

## Aluminium Alloy 1050A H14 Sheet



### SPECIFICATIONS

Commercial	1050A
EN	1050A

Aluminium alloy 1050 is a popular grade of aluminium for general sheet metal work where moderate strength is required.

Alloy 1050 is known for its excellent corrosion resistance, high ductility and highly reflective finish.

Applications - Alloy 1050 is typically used for:

Chemical process plant equipment

Food industry containers

Pyrotechnic powder

Architectural flashings

Lamp reflectors

Cable sheathing

### CHEMICAL COMPOSITION

BS EN 573-3:2009  
Alloy 1050A

Element	% Present
Iron (Fe)	0.0 - 0.40
Silicon (Si)	0.0 - 0.25
Zinc (Zn)	0.0 - 0.07
Magnesium (Mg)	0.0 - 0.05
Titanium (Ti)	0.0 - 0.05
Manganese (Mn)	0.0 - 0.05
Copper (Cu)	0.0 - 0.05
Other (Each)	0.0 - 0.03
Aluminium (Al)	Balance

### ALLOY DESIGNATIONS

Aluminium alloy 1050A also corresponds to the following standard designations and specifications **but may not be a direct equivalent:**

AA1050

S1B

A91050

### TEMPER TYPES

The most common tempers for 1050 aluminium are:

- H14 - Work hardened by rolling to half hard, not annealed after rolling

### SUPPLIED FORMS

Plain sheet

Plain sheet with a PVC coating on one side

Stucco sheet

Stucco sheet with a PVC coating on one side

Shate

- Sheet

### GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.71 g/cm <sup>3</sup>
Melting Point	650 °C
Thermal Expansion	24 x10 <sup>-6</sup> /K
Modulus of Elasticity	71 GPa
Thermal Conductivity	222 W/m.K
Electrical Resistivity	0.0282 x10 <sup>-6</sup> Ω .m

### MECHANICAL PROPERTIES

BS EN 485-2:2008  
Sheet  
0.2mm to 6.00mm

Property	Value
Proof Stress	85 Min MPa
Tensile Strength	105 - 145 MPa
Hardness Brinell	34 HB

Properties above are for material in the H14 condition

### WELDABILITY

When welding 1050 to itself or an alloy from the same subgroup the recommended filler wire is 1100. For welding to alloys 5083 and 5086 or alloys from the 7XXX series, the recommend wire is 5356. For other alloys use 4043 filler wire.

### FABRICATION

Workability - Cold: Excellent

Machinability: Poor

Weldability - Gas: Excellent

Weldability - Arc: Excellent

Weldability - Resistance: Excellent

Brazability: Excellent

Solderability: Excellent



## CONTACT

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**Web:** [www.aalco.co.uk](http://www.aalco.co.uk)

## REVISION HISTORY

**Datasheet Updated** 03 December 2013

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The old BS1470 standard has been replaced by nine EN standards:

- EN485-1: Technical conditions for inspection and delivery
- EN485-2: Mechanical Properties
- EN485-3: Tolerances for HOT Rolled Material
- EN485-4: Tolerances for COLD Rolled material
- EN515: Temper Designations
- EN573-1: Numerical alloy designation system
- EN573-2: Chemical symbol designation system
- EN573-3: Chemical Compositions
- EN573-4: Product forms in different alloys

For those familiar with the old BS1470 it is useful to highlight where the new EN standards differ:

- Chemical Compositions – No Change.
- Alloy Numbering System – No Change.
- Temper Designations for Heat Treatable Alloys – A new wider range of special tempers having up to four digits after the T have been introduced for non-standard applications (e.g. T6151).
- Temper Designations for Non Heat Treatable Alloys – No change to existing tempers but a more comprehensive definition of how tempers are achieved.
- Mechanical Properties – Similar but not identical. Also, 0.2% Proof Stress must now be quoted on test certificates.
- Thickness Tolerances – Considerably tighter for alloys 1050A & 3103. To reflect manufacturing difficulty the tolerances for alloys 5251, 5083 & 6082 are now wider than this, although still a little tighter than in BS1470.
- Length and Width Tolerances – These tend to be tighter and are now all on the plus side (i.e. minus zero).
- Flatness Tolerances – These are considerably tighter.

### ALLOY GROUPS

Please note that thickness tolerances for Cold Rolled material vary according to Alloy, with the Alloys falling into two groups as shown below.

Alloy Group I
1080A, 1070A, 1050A, 1200
3003, 3103, 3005, 3105
4006, 4007
5005, 5050
8011A
Alloy Group II
2014, 2017A, 2024
3004
5040, 5049, 5251, 5052, 5154A, 5454, 5754, 5182, 5083, 5086
6061, 6082
7020, 7021, 7022, 7075

### THICKNESS TOLERANCES - COLD ROLLED SHEET & STRIP

Please note that thickness tolerances for Cold Rolled material vary according to Alloy, with the Alloys falling into two groups as shown above.

The thickness tolerances also vary according to the width of the material as shown in the tables below.

Thickness mm	Tolerance (+/-)mm	Tolerance (+/-)mm	Tolerance (+/-)mm
	Group I 1000mm wide	Group I 1250mm wide	Group I 1500mm wide
0.2 to 0.4	0.02	0.04	0.05
0.41 to 0.50	0.03	0.04	0.05
0.51 to 0.60	0.03	0.05	0.06
0.61 to 0.80	0.03	0.06	0.07
0.81 to 1.0	0.04	0.06	0.08
1.1 to 1.2	0.04	0.07	0.09
1.21 to 1.50	0.05	0.09	0.10
1.51 to 1.80	0.06	0.10	0.11
1.81 to 2.0	0.06	0.11	0.12
2.1 to 2.5	0.07	0.12	0.13
2.6 to 3.0	0.08	0.13	0.15
3.1 to 3.5	0.10	0.15	0.17



**THICKNESS TOLERANCES - COLD ROLLED SHEET & STRIP**

Thickness mm	Tolerance (+/-)	Tolerance (+/-)	Tolerance (+/-)
	Group II 1000mm wide	Group II 1250mm wide	Group II 1500mm wide
0.2 to 0.4	0.03	0.05	0.06
0.41 to 0.50	0.03	0.05	0.06
0.51 to 0.60	0.04	0.06	0.07
0.61 to 0.80	0.04	0.07	0.08
0.81 to 1.0	0.05	0.08	0.09
1.1 to 1.2	0.05	0.09	0.10
1.21 to 1.50	0.07	0.11	0.12
1.51 to 1.80	0.08	0.12	0.13
1.81 to 2.0	0.09	0.13	0.14
2.1 to 2.5	0.10	0.14	0.15
2.60 to 3.0	0.11	0.15	0.17
3.1 to 3.5	0.12	0.17	0.19

**THICKNESS TOLERANCES - HOT ROLLED PLATE**

Thickness mm	Tolerance (+/-) 1250mm Wide	Tolerance (+/-) 1500mm Wide
2.5 to 4.0	0.28	0.28
4.1 to 5.0	0.30	0.30
5.1 to 6.0	0.32	0.32
6.1 to 8.0	0.35	0.40
8.1 to 10.0	0.45	0.50
10.1 to 15.0	0.50	0.60
15.1 to 20	0.60	0.70
21 to 30	0.65	0.75
31 to 40	0.75	0.85
41 to 50	0.90	1.0
51 to 60	1.1	1.2
61 to 80	1.4	1.5
81 to 100	1.7	1.8
101 to 150	2.1	2.2
151 to 220	2.5	2.6
221 to 350	2.8	2.9
351 to 400	3.5	3.7

**THICKNESS TOLERANCES - COLD ROLLED SHEET & STRIP**

Thickness mm	Tolerance (+/-)	Tolerance (+/-)	Tolerance (+/-)
	Group I/II 1000mm wide	Group I/II 1250mm wide	Group I/II 1500mm wide
3.6 to 4.0	0.15	0.20	0.22
4.1 to 5.0	0.18	0.22	0.24
5.1 to 6.0	0.20	0.24	0.25
6.1 to 8.0	0.24	0.30	0.31
8.1 to 10.0	0.27	0.33	0.36
10.1 to 12.0	0.32	0.38	0.40
12.1 to 15.0	0.36	0.42	0.43
15.1 to 20	0.38	0.44	0.46
21 to 25	0.40	0.46	0.48
26 to 30	0.45	0.50	0.53
31 to 40	0.50	0.55	0.58
41 to 50	0.55	0.60	0.63

**LENGTH TOLERANCES**

Thickness mm	Hot Rolled EN485-3 (-0mm) Plus:	Cold Rolled EN 485-4 (-0mm) Plus:
0.2 to 3.0	8.0mm	6.0mm
3.0 to 6.0	8.0mm	8.0mm
6.0 to 12.0	8.0mm	10mm
12.0 to 50.0	9.0mm	-
over 50.0	9.0mm	-

Applies to lengths 2001mm to 3000mm



## WIDTH TOLERANCES

Thickness mm	Hot Rolled EN485-3 (-0mm) Plus:	Cold Rolled EN 485-4 (-0mm) Plus:
0.2 to 3.0	-	3.0mm
3.1 to 6.0	7.0mm	4.0mm
6.1 to 12.0	7.0mm	5.0mm
12.1 to 50.0	8.0mm	-
51.0 to 200	8.0mm	-
201 to 400	11.0mm	-
	Applies to widths 1001mm to 2000mm	Applies to widths 501mm to 1250mm

## FLATNESS TOLERANCES

Product	Thickness mm	Max Deviation over 2500mm length	Max Deviation over 1250mm width
Cold Rolled	0.5 to 3.0	10.0mm	5.0mm
	3.0 to 6.0	7.5mm	3.75mm
Hot Rolled	6.0 to 200	5.0mm	2.5mm

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## REVISION HISTORY

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