1350

Aluminium Alloy
Data sheet

Material NOTE: The following data is for general reference only and NOT FOR DESIGN.

General

With a minimum of 99.5% aluminium purity it is one of the highest purity commercially available aluminium. Typically used for electrical conductors this alloy has high formability, corrosion resistance and highest conductivity of all aluminium grades.

Tempers range from typically H0(annealed) <80 MPA tensile strength through to H18 (hard drawn) 180 Mpa.

Description

Aluminium 1350 alloy is a high purity wrought aluminium with controlled copper content. It can be hardened by cold work with a high degree of ductility. It cannot be heat treated to a higher strength.

Alloy designations

1350 alloy , EC1350 Electrical Conductor grade, 1xxx series wrought aluminium, UNS A91350, ASTM B479, A1050, BS-1E (UK), DIN E-AI99.5

Applications

- Electrical conductors and components
- Food industry packaging
- Cold forged components, fasteners and hardware
- Binding & tie wires
- Decorative coatings industry

Substitutable Alloys

Alloys that can be easily substituted for 1350 include 1100 , 1050 & 1199

Chemical Composition[1]

EC1350 Grade

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	**Al(min)**
1350	0.10	0.40	0.05	0.01	-	0.01	-	0.05	-	0.10	**99.5 %**

NB: Assays in % max.

Alternatives alloys comparison

1 Complying with ASTM Aluminium Association

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al(min)
1050	0.25	0.4	0.05	0.05	0.05			0.05	0.03		99.5 %
1100	0.09		0.1	0.05	-	-	-	0.1	-	0.15	99.0%

Physical Properties

Property	Value
Density	2.705 g/ cc
Melting point	646-657 ˚C
Modulus if Elasticity	68.9 GPA
Resistivity	2.790E-08 Ohm-m
Electrical Conductivity	**61.8 IACS**

Mechanical properties #

AS1865 Aluminium & Alloys – drawn wire, rod bar & strip

Temper	**Ultimate Tensile strength**		**Elongation**
	Mpa	**Ksi**	**%**
H0 (Annealed)	75	10	18-30
H12	110	12	12-16
H14	130	15	10
H16	150+	19	5%
H18 (Hard drawn)	>172	>25	< 2%

#: Typical averages

Physical performance

Weldability	Readily weldable using commercial filler metals
Fabrication	Is readily formable in the annealed condition
Corrosion	1xxx series aluminium has the best resistance to corrosion of aluminium alloys. Corrosion resistance relies upon its protective oxide film layer that forms in air. High resistance to aqueous solutions with pH range 4-9. Aluminium is an active noble metal and will form galvanic corrosion readily in contact with most other metals
Appearance	Bright chrome like appearance in drawn condition. Annealed metal is dull in appearance.
Surface coatings	1350 alloy is readily anodised to provide a wear coating.
Annealing	1350 alloy is readily annealed at 350˚C
Surface cleaning	Wire surface can be cleaned readily with mineral solvents. Heavily contaminated surfaces can be cleaned using hot +70˚C diluted caustic solution