

Alloy EN AW-1050A [Al99.5]

Technical datasheet - Extruded products

The 1xxx series are essentially pure with a minimum of 99% aluminum content by weight. The series are non-heat treatable but can be work hardened. Alloy 1050 has a minimum purity of 99.5% aluminum and it can be extruded into profiles, rods, bars and tubes.

This alloy offers very good corrosion resistance and displays excellent forming, welding, brazing and finishing characteristics. Typical applications include chemical and food handling equipment, as well as containers for food, pharmaceuticals and liquids.

Typical Applications

- Heat exchanger tubing
- Medical and chemical equipment
- Cable sheathing
- Food handling equipment
- Electrical conductors
- Pharmaceutical containers

Chemical Composition¹

Si		Fe		Cu		Mn		Mg		Cr		Zn		Ti		Pb		Others		Al	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Each	Tot	Min	
	0.25		0.40		0.05		0.05		0.05				0.07		0.05				0.03		99.50

¹ Chemical composition in weight-% according to EN-573-3:2013

Mechanical Properties²

Temper	Wall thickness t [mm]	R _{p0.2} [MPa]	R _m [MPa]	A [%]	A _{50mm} [%]	HBW ^c TYPICAL VALUE
F ^a , H112	all	20	60	25	23	20

² Properties according to EN 755-2:2016 for extruded profile, minimum values unless else specified

^a F temper: properties are for information only

^c Brinell hardness values are for information only

Temper Designations⁴

F	As fabricated. This designation applies to the products of shaping processes in which no special control over thermal conditions or strain-hardening is employed. For this temper there is no mechanical property limits specified.
O	Annealed. This designation applies to products which are annealed to obtain the lowest strength temper
H112	Strain hardened temper via the extrusion process to develop minimum property requirements

⁴ Temper designations according to EN 515:1993

Physical Properties⁵

Temper	Modulus of Elasticity [GPa]	Modulus of Rigidity [GPa]	Melting Range [°C]	Density [g/cm ³]	Thermal Conductivity [W/m·K]	Specific Heat Capacity [J/kg·K]	Electrical Resistivity [nΩm]	Coefficient of linear expansion [10 ⁻⁶ K ⁻¹]
	69	26	645 - 658	2.70	229	901	28	23.5

⁵ Reference: MNC Handbok nr 12, version 2, SIS, 1989. Typical properties at room temperature 20°C