

General Information Sheet Aluminium Alloy EN AC- 42000 (LM25)

This alloy conforms to BS EN 1706:1998

Chemical Composition

Copper	0.2% max
Magnesium	0.20-0.65%
Silicon	6.5 - 7.5%
Iron	0.55% max
Manganese	0.35% max
Nickel	0.15% max
Zinc	0.15% max
Lead	0.15% max
Tin	0.05% max
Titanium	0.05-0.25% max
Aluminium	Remainder

Mechanical Properties

0.2% Proof Stress (N/mm ²)	90 min
Tensile Stress (N/mm ²)	170 min
Elongation (%)	2.5 min
Brinell Hardness Number	55 min

Physical Properties

Coefficient of Thermal Expansion per °C	22 x 10 ⁻⁶
Thermal Conductivity at 25°C	150-170W/(m.k)
Electrical Conductivity at 20°C	19 to 25 MS/m
Specific Gravity	2.68
Freezing Range	615 - 550°C

Machinability

The heat treated alloy has fairly good machining properties, but tools should preferably be of high speed steel and must be kept sharp.

A moderately high rate of tool wear may be expected. Liberal cutting lubricant should be employed.

Corrosion Resistance

Resistance to corrosive attack by seawater and marine atmosphere is high.

Anodising

A protective anodic film can be obtained by either the sulphuric or chromic acid process but the grey opaque character of coating of normal thickness precludes their colouring in light shades for decorative purposes.

Application

EN AC-42000 alloy is mainly used where good mechanical properties are required in castings of a shape or dimensions requiring an alloy of excellent castability in order to achieve the desired standard to soundness.

The alloy is also used where resistance to corrosion is an important consideration particularly where high strength is also required.

Consequently, EN AC-42000 finds applications in the chemical, marine, electrical and many other industries. It is, in practice, the general purpose high strength casting alloy.