

L169 Aluminium Casting Alloy

BSL 169

Aluminium Casting Alloy (Al-Si7Mg0.6)

This alloy conforms to British standard L169. Castings are standardized in the solution treated and artificially aged condition

MECHANICAL PROPERTIES

0.2% Proof Stress (N/mm ²)	240
Tensile Stress (N/mm ²)	290
Elongation (%)	3.0
Brinell Hardness	80
Endurance Limit (5x10 ⁸ cycles; N/mm ²)	110
Modulus of elasticity (x10 ³ N/mm ²)	72

MACHINABILITY

The heat-treated alloy has fairly good machining properties, but tools should 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 atmospheres is high.

ANODOZING

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

STRENGTH AT ELEVATED TEMPERATURES

On short term testing the properties fall slowly and uniformly up to 200°C. For prolonged heating above 135°C, the properties will be reduced by half.

CASTING CHARACTERISTICS

Fluidity	-Good suitable for fairly thin castings.
Pressure Tightness	-Good, suitable for castings required to be leak tight.
Hot Tearing	-Excellent. Problems due to hot tearing are seldom encountered.
Typical Pouring Temperature	-710°C. The practical temperature may range between 675-790°C, depending on mould configuration.
Patternmaker's Shrinkage	-1.3% or 1/75.

APPLICATIONS

L169 has high strength and toughness and is used in critical aerospace applications. It is easily weldable and may be heat-treated. The permanent mould process is easily the easily preferred casting method for this alloy.