

AlSi10Mg Aluminium

Strong, Hard, Good thermal properties and Low Weight

Applications

- Offers good strength and hardness
- Ideal for applications which require a combination of good thermal properties and low weight
- High dynamic load bearing capacity
- Typically used for cast parts with thin walls and complex capacity
- Often used in automotive, aerospace and automation
- Applications include housings, engine parts and production tools



Physical Properties

Colour	Grey
Type	Aluminium

Mechanical Properties

	Heat Treated	
	Horizontal	Vertical
Ultimate tensile strength, R_m	340 MPa	350 MPa
Yield strength, $R_{p0.2}$	220 MPa	225 MPa
Elongation at break, A	12%	9%

¹ The numbers are typical values and are determined from samples with horizontal and vertical orientation.

² Tensile testing according to ISO 6892-1 B10, proportional test pieces, diameter of the neck area 5 mm (0.2 inch), original gauge length 25 mm (1 inch).

³ Stress relieve: anneal for 90 minutes at 270 °C (518 °F). Oven type & configuration may have impact on the mechanical properties: longer holding time and higher temperature can lead to decreased strength and in-creased elongation properties and vice versa. Values given in above table were obtained by inserting parts to preheated oven; annealing time calculation started when part temperature reached 6 °C below target temperature; maximum overheating was < 5 °C.

Material Composition

Component	Indicative Value (%)
Al	Balance
Si	9.0 – 11.0
Fe	0.55
Cu	0.05
Mn	0.45
Mg	0.25 – 0.45
Ni	0.05
Zn	0.10
Pb	0.05
Sn	0.05
Ti	0.15

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