Characteristics of aluminium

Mechanical characteristics

MULTI-BOX Aluminium Enclosures made of DIN-alloy Al Si 9 are are manufactured in pressure die casting and chilled casting. Therefore, different mechanical characteristics have been evaluated.

	Al Si 9 according to DIN 172/Page 2		
	Measurement unit	**Pressure diecasting* 3.2582.05**	**Chilled casting 3.2581.02**
Tensile strength	N/mm²	220 - 280	180 - 240
0.2 Limit	N/mm²	140 - 180	80 - 110
Ultimate strain	%	ca. 3	6 - 12
Brinell hardness	HB	60 - 80	50 - 60
Impact test	J/cm²	6 - 9	7 - 10

* Values on test bar

Physical characteristics

The physical characteristics are allowed to be influenced by permissible analytic tolerances and the casting method. The specific values are recommended values.

	Measurement unit	**Gal Si 9**
Density at 20°C	G/cm³	2,65
Thermal conductivity co-efficient 20-200°C	10^{-6}K	20 - 23
Thermal conductivity 20°C	W cm K^{-1}	1,5 - 1,7
Electrical conductivity 20°C	M Ω mm^{-1}	17 - 27

Chemical behavior

The following chart is applicable for the alloy Al Si 9 which can be used for both casting methods.

	Al Si 9	
Medium	**Resistance**	**Comments**
Acetone	Resistant	
Sea water	Resistant	Limited brackish water use
Ammoniac (dry)	Resistant	Limited Ammoniac damp use
Petrol	Resistant	
Benzene	Resistant	
Concrete	Resistant	
Heating oil	Resistant	
Petroleum	Resistant	
Water steam	Resistant	Limited hot steam use
Weather influences	Resistant	Limited extreme influences

Resistance to other media on request

	Type of seal	
Condition	**Standard (PU-foamed)**	**Silicone**
Unpainted	-40 °C to +100 °C	-50 °C to +140 °C
Painted*	-40 °C to +100 °C	-50 °C to +140 °C

* In use with suitable paints or coatings