

Chemical composition and mechanical characteristics according to DIN EN 1706

Designation of the die cast aluminium alloy			
Group of alloys:	ALSi		
Structural material symbol:	GD-ALSi12 (DIN 1725)	EN AC 44300 (DIN EN 1706)	
Chemical composition of mass proportions in %			
Silicium	(Si)		10,5 – 13,5
Iron, pure	(Fe)		1,0 (0,45 – 0,9)
Copper	(Cu)		0,1 (0,08)
Manganese	(Mn)		0,55
Magnesium	(Mg)		--
Chromium	(Cr)		--
Nickel	(Ni)		--
Zinc	(Zn)		0,15
Lead	(Pb)		--
Tin	(Sn)		--
Titanium	(Ti)		0,15
Further additions			0,25
Aluminium	(Al)		Rest
Mechanical characteristics			
Tensile strength	R_m	Mpa min.	240
Permanent elongation limit	$R_{p0,2}$	Mpa min.	130
Breaking elongation	A_{50mm}	% min.	1
Brinell hardness	HBS	min.	60
Solidity at ambient temperature			good
Solidity till 200 °C			acceptable
Impact strength (ductility)			acceptable
Fatigue resistance	$Mpa^9 - Mpa^{10}$		60 – 90
Further characteristics			
Thermal conductivity	W/(m · K)		130 - 160
Electric conductivity	MS/m		16 - 22
Longitudinal elongation coefficient	$10^{-6}/K$	293K – 373K	20