

## 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 47100 (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