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AL8

Material designation

CuAl6Si2Fe

EN12163 / EN12165 / EN12167 (1998)	CW301G
DEF STAN 02-834 / NES834	CuAl6Si2Fe
DEF STAN 02-879	CuAl6Si2Fe

Chemical composition*

Elements	% mean	Impurities	% max.
Fe	0.6	Pb	0.01
Si	2.2	Sn	0.
Al	6.8	Ni	0.1
		Mn	0.1
		Zn	0.4
Cu	Balance	Others	0.2

* Reference values in % by weight

Properties and typical applications

AL8 is a single-phase alloy with excellent corrosion and wear resistances. The addition of silicon improves the mechanical properties as well as the machinability of the material. Used in the marine industry, valve seats, screws, bolts …

Physical properties at 20°C

Density (g/cm3)	7.7
Young modulus (GPa)	110
Thermal expansion coefficient (20-300°C) (10^{-6}/K)	18
Thermal conductivity (W/m.K)	45
Thermal capacity (J/Kg.K)	430
Electrical conductivity (% I.A.C.S.)	8

Heat treatment

Melting range (°C)	985-1005
Hot working (°C)	850-900
Annealing temperature (°C)*	650-750
Stress relieving treatment (°C)**	300-400

Annealing treatment of a material leads to reduce its hardness and increase its ductility.

****Stress relieving treatment allows to eliminate the residual stresses present in the material in ordrer to avoid the stress corrosion cracking.***

Forming

Hot forming	Good
Cold forming	Good
Machinability	80% (CuZn39Pb3 = 100%)

Corrosion resistance

The bronzes of aluminum have a high corrosion resistance, in particular in the sea environments.

Joining

Soldering	
Soft	Not recommanded
Hard	Fair
Welding	
Gaz welding	Not recommanded
Inert gas shielded arc welding	Good
Resistance welding	Good

Mechanical properties according to EN 12163

Condition of material	Diameter [mm] from	Diameter [mm] to	Rp0,2 [Mpa] min.	Rm [Mpa] min.	A(%) min.	Hardness HB
M	All		As extruded - without specific mechanical properties			
R500	8	80	(250)	500	20	-
H120			-	-	-	120-150
R600	8	40	(350)	600	12	-
H140			-	-	-	> 140

Fabrication range

Available forms: 

Do not hesitate to contact us for further information regarding the dimensions, tolerances and metallurgical conditions.
Our technical teams are by your side to help you succeed in your projects.

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