

Aluminium alloy STENAL 460

Chemical designation:

STENAL 460 (EN AB-ALSi9Cu3(Fe))

Chemical composition:

Element	Min %	Max %
Si	8,70	9,40
Fe	0,5	0,60
Cu	2,70	3,30
Mn	0,30	0,47
Mg	0,35	0,45
Cr	-	-
Ni	-	0,30
Zn	-	1,20
Pb	-	0,094
Sn	-	0,10
Ti	0,05	0,10
Sr	0,030	0,05
Sb	-	0,005
P	-	0,002
Ca	-	0,003

Other elements, each max 0,05%
total max 0,25%

General description:

A development of the most common alloy for high pressure die casting AlSi9Cu3(Fe), and with higher mechanical properties. Key properties are high mechanical strength, good fatigue properties and good ductility.

Suitable applications:

Suitable in a variety of applications where high mechanical properties are required. Excellent for complex and/or thin walled castings.

Heat treatment:

Castings can be cooled in air or water after casting. The alloy can be artificially aged or precipitation hardened, provided that porosity can be kept low.

Remark:

Sr content is higher for delivery condition of ingots. Sr level will, in liquid state, decrease with time and needs to be maintained with separately added Sr. Recommended Sr level for castings is in range of 0,02-0,03 %

Mechanical properties

	R _{p0,2} , MPa	R _m , MPa	Förlängning, %
ac, material potential *	220	360	2,8
wc, material potential *	225	350	2,6
HPDC**	150	280	3,5

- Air (ac) and water cooled (wc) separately casted test bars thickness 4 mm, material potential, process depending
- True properties only when testing component.
- HPDC, circular cross section type test bar, diam. 6 mm. Normally expected values.