

# Aluminium alloy EN AC-44300 data sheet



## Chemical composition and mechanical properties according to EN1706:2010

### Chemical designation:

EN AC-AI Si12(Fe)(a)

### General description of properties:

AlSi12(Fe)(a) is a typical casting alloy with excellent casting properties and is typically used for cast parts with thin walls and complex geometry. It offers good strength, hardness and dynamic properties and is therefore also used for parts subject to high loads.

### Suitable applications:

For complicated, thin-wall, pressure-tight, high-strength corrosion-resistant castings subjected to fatigue loading.

### Heat treatment:

Not usually age hardened

## Chemical composition:

	Expressed in percentage by mass
Si	10.5 to 13.5
Fe	1.0 (0.45 to 0.9)
Cu	0.10 (0.08)
Mn	0.55
Mg	-
Cr	-
Ni	-
Zn	0.15
Pb	-
Sn	-
Ti	0.15

Others each max 0.05% and total max 0.25%

## Casting characteristics

Solidification range °C	Casting temperature °C	Fluidity	Resistance to hot tearing	Shrinkage %	Pressure tightness
580-570	650-700	Excellent	Excellent	0.5-0.8	Good

## Mechanical properties of pressure die cast alloys

Temper designat	Tensile strength $R_m$ , MPa, min.	Yield strength $R_{p0.2}$ , MPa, min.	Elongation $A_{50\%}$ %, min.	Brinell hardness HBW, min.
F (as cast)	240	130	1	60

## Mechanical and physical properties

Density kg/dm <sup>3</sup>	Strength	Machinability	Weldability	Resistance to corrosion
2.65	Good	Satisfactory	Poor	Satisfactory

  

Decorative anodizing	Ability to be polished	Linear thermal expansion 293-373°K, °K <sup>-1</sup>	Electrical conductivity MS/m	Thermal conductivity W/m°K
Not recommended	Poor	$21 \times 10^{-6}$	16-22	130-160

Alteams version 2018/07. The material specification is based on EN1706:2010 and serves mainly as a guideline for comparison of different alloys and design of aluminium casted parts.