

Aluminium alloy EN AC-43400 data sheet



Chemical composition and mechanical properties according to EN1706:2010

Chemical designation:

EN AC-AI Si10Mg(Fe)

General description of properties:

AlSi10Mg(Fe) 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. Good machinability and high resistance to chemical attack.

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	9.0 to 11.0
Fe	1.0 (0.45 to 0.9)
Cu	0.10 (0.08)
Mn	0.55
Mg	0.20 to 0.50 (0.25 to 0.50)
Cr	-
Ni	0.15
Zn	0.15
Pb	0.15
Sn	0.15
Ti	0.20 (0.15)

Others each max 0.05% and total max 0.15%

Casting characteristics

Solidification range °C	Casting temperature °C	Fluidity	Resistance to hot tearing	Shrinkage %	Pressure tightness
600-550	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_{50t} %, min.	Brinell hardness HBW, min.
F (as cast)	240	140	1	70

Mechanical and physical properties

Density kg/dm ³	Strength	Machinability	Weldability	Resistance to corrosion
2.65	Good	Good	Good	Satisfactory
Decorative anodizing	Ability to be polished	Linear thermal expansion 293-373°K, °K ⁻¹	Electrical conductivity MS/m	Thermal conductivity W/m°K
Not recommended	Poor	21×10^{-6}	16-21	130-150

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.