

Norm: UNI EN 1676 e 1706

**Numeric designation:** EN AB and AC - 71100

**Symbolic designation:** EN AB and AC - AlZn10Si8Mg

#### CHEMICAL COMPOSITION %

ALLOY DESIGNATION		ELEMENTS												
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other each	Other total
EN AB 71100 EN 1676:2020	Min	7,5	0	0	0	0,25	0	0	9,0	0	0	0	0	0
	Max	9,5	0,40	0,08	0,45	0,50	0,05	0,05	10,5	0,05	0,05	0,15	0,05	0,15
EN AC 71100 EN 1706:2020	Min	7,5	0	0	0	0,20	0	0	9,0	0	0	0	0	0
	Max	9,5	0,45	0,10	0,45	0,50	0,05	0,05	10,5	0,05	0,05	0,15	0,05	0,15

NOTE: Other each includes the limits of all elements unspecified in the grid.

#### MECHANICAL PROPERTIES

(Mechanical properties obtained from samples cast separately at +20°C room temperature)

CASTING PROCESS (condition)	TEMPER DESIGNATION	Rm	Rp02	A	HB	R Fatigue*
		Tensile strength	Yield strength	Elongation	Brinell hardness	Fatigue resistance
		EN 1706:2020	EN 1706:2020	EN 1706:2020	EN 1706:2020	EN 1706:2020
		MPa	MPa	%	HBW	MPa
SAND	T1	210	190	1	80	80 - 110
PERMANENT MOULD	T1	230	200	1	90	80 - 110
HIGH PRESSURE DIE CASTING	T1	260	220	< 1	100	80 - 110

\*Values for tests under rotating bending conditions up to 10<sup>7</sup> cycles (Wöhler curve)

#### PHYSICAL PROPERTIES

(The following properties are spoiled by the variation of the chemical composition, by its metallurgic structure, casting integrity and casting conditions, therefore these values are approximate)

SPECIFIC WEIGHT	2,85 Kg/dm <sup>3</sup>	ELECTRICAL CONDUCTIVITY	EN 1706:2020	17 - 20 MS/m
SPECIFIC HEAT (at 100 °C)	0,86 J/gK	THERMAL CONDUCTIVITY	EN 1706:2020	120 - 130 W/(m K)
ELASTIC MODULUS	75 GPa	LINEAR THERMAL EXPANSION (20 °C - 100 °C)	EN 1706:2020	21·10 <sup>-6</sup> /K

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### TECHNOLOGICAL FEATURES

(Quality indications excerpted from the norm EN 1706:2020)

CASTABILITY	B	DECORATIVE ANODIZING	E
RESISTANCE TO HOT TEARING	A	ABILITY TO BE WELDED	A
PRESSURE TIGHTNESS	B	ABILITY TO BE POLISHED	C
MACHINABILITY (after cast)	A	STRENGTH AT ROOM TEMPERATURE	B
MACHINABILITY (after heat treatment)	-	STRENGTH AT ELEVATED TEMPERATURE (200°C)	C
RESISTANCE TO CORROSION	C	DUCTILITY	C

A: EXCELLENT, B: GOOD, C: FAIR, D: POOR, E: NOT RECOMMENDED, F: UNSUITABLE

### GUIDELINES FOR USE

The ingot re-melting process must be carried out as fast as possible and overheating must be avoided (maximum melting temperature 800°C). Iron tools that may be touched by the liquid metal must be specially painted to avoid spoiling the alloy. The best alloy purification results are achieved by treating the alloy with inert gases, such as nitrogen and/or argon, to remove dissolved hydrogen and any oxides in the liquid bath. A careful skimming of the bath is recommended. It is allowed to recycle sprues and casting appendages up to 40% out of the total charge weight.

**Heat Treatment** - The possible treatments and the properties to be potentially achieved are listed in the table "MECHANICAL PROPERTIES".

### FURTHER FEATURES OF THE ALLOY

**Resistance to weathering and seawater** - Limited resistance to weathering; not suitable for applications directly touched by seawater.

**Notes** - Castability is excellent and makes it possible to use it a lot.

### USUAL APPLICATIONS

This self-tempering alloy has excellent mechanical strength, elongation characteristics, especially in permanent mould casting, and excellent ability to be polished. It is used in the mechanical engineering, transport, plumbing industries.

This alloy **does not comply** with Standard **EN 601**.

### DISCLAIMER

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