



TECHNICAL DATA-SHEET

ALLOY DESCRIPTION: EN AB ed AC 45300 - Al Si 5 Cu 1 Mg

ALLOY GROUP: Al Si 5 Cu

STANDARD: UNI EN 1676 e 1706

CHEMICAL COMPOSITION %

Alloy	Elements	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Others each	Others tot.
EN AB 45300	Min	4,5		1,0		0,40								
	Max	5,5	0,55	1,5	0,55	0,65	0,05	0,25	0,15	0,15	0,05	0,20	0,05	0,15
EN AC 45300	Min	4,5		1,0		0,35								
	Max	5,5	0,65	1,5	0,55	0,65	0,05	0,25	0,15	0,15	0,05	0,25	0,05	0,15

MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGTH	YIELD STRENGTH	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
SAND CASTING	T4	170	120	2	80
	T6	230	200	< 1	100
SHELL CASTING	T4	230	140	3	85
	T6	280	210	< 1	100

PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,67 Kg/dm ³	SOLIDIFICATION AND MELTING RANGES	554-627°C
FATIGUE RESISTANCE	70-100 MPA	OPTIMUM RANGE OF SAND CASTING	690-750°C
ELECTRIC CONDUCTIVITY	19-23 MS/m	OPTIMUM RANGE OF SHELL CASTING	680-740°C
THERMAL CONDUCTIVITY	140-150 W/(m K)	THERMAL EXPANSION (from 20°C to 100°C)	22·10 ⁻⁶ /K

TECHNOLOGICAL PROPERTIES - EN 1706:2020

CASTABILITY	MEDIUM	RESISTANCE TO HOT TEARING	GOOD
WELDABILITY	MEDIUM	STRENGTH AT ELEVATED TEMPERATURE	GOOD
POLISHING	GOOD	PRESSURE TIGHTNESS	MEDIUM
MACHINABILITY	GOOD	DECORATIVE ANODIZING	SUFFICIENT
CORROSION RESISTANCE	SUFFICIENT	PROTECTIVE ANODIZING	SUFFICIENT

APPLICATIONS

Alloy with excellent mechanical characteristics and pressure seal, used in sand or shell.

Alloy not compliant with food standard EN 601.

HEAT TREATMENTS

	SOLUBILISATION TEMPERATURE	SOLUBILISATION DURATION	WATER HARDENING TEMPERATURE	AGEING TEMPERATURE	AGEING DURATION
F RAW STATE	-	-	-	-	-
O ANNEALING	520-530 °C	6-8 hours	20 °C	-	-
T1 SELF-HARDENING	-	-	-	-	-
T4 SOLUBILISATION AND NATURAL AGEING	480-530 °C	2-16 hours	20-80 °C	15-30 °C	120 hours
T5 CONTROLLED COOLING AND ARTIFICIAL AGEING	-	-	AIR	210-230 °C	5-12 hours
T6 SOLUBILISATION AND ARTIFICIAL AGEING	480-555 °C	2-20 hours	20-80 °C	130-185 °C	2-15 hours
T64 SOLUBILISATION AND PARTIAL AGEING	520-545 °C	4-10 hours	20-50 °C	135-160 °C	2-7 hours
T7 HYPERAGEING	480-530 °C	1-8 hours	20 °C	190-240 °C	1-8 hours

The temperatures and the duration of the treatments vary according to the type of alloy, melting (shell, sand or die casting) and the result you want to obtain.

Ideal parameters shall be determined by a test.

EQUIVALENTS OR SIMILARS FOREIGN REGULATIONS

	ITALY	GERMANY	FRANCE	G.B.R.	USA	ISO	JAPAN	TURKEY
	UNI	Din1725/5-86	NFA57-105	BS1490-88	ASTM 179-82	3522-84	JIS H2211-92	ETIAL
Equivalents	3600		AS 4 GU	LM 16	355.2	AlSi Cu Mg	C 4 DS	
Similar	SA 313.1			L78	SAE X 355		AC 4 D	

What is indicated in this data sheet is limited to inform only and does not imply any guarantee regarding the properties reported.

Everything that involves decisions based on the information stated here is direct responsibility of the end user, as well as any risks, not excluded from the verification.