ARM Assisi Recycling Maclodio Spa
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TECHNICAL DATA-SHEET

ALLOY DESCRIPTION: EN AB ed AC 42100 - AlSi7Mg0,3
ALLOY GROUP: Al Si
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 42100	Min	6,5				0,30								
	Max	7,5	0,15	0,03	0,10	0,45	0,03	0,03	0,07	0,03	0,03	0,18	0,03	0,10
EN AC 42100	Min	6,5				0,25								
	Max	7,5	0,19	0,05	0,10	0,45	0,03	0,03	0,07	0,03	0,03	0,25	0,03	0,10

MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGHT	YIELD STRENGHT	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
SAND CASTING	T6	230	190	2	75
	T64	200	120	4	60
SHELL CASTING	T6	290	210	4	90
	T64	250	180	8	80
INVESTMENT CASTING	T6	260	200	3	75

PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,66 Kg/dm^3	**SOLIDIFICATION AND MELTING RANGES**	550-625°C
FATIGUE RESISTANCE	80-110 MPA	**OPTIMUM RANGE OF SAND CASTING**	680-750°C
ELECTRIC CONDUCTIVITY	20-27 MS/m	**OPTIMUM RANGE OF SHELL CASTING**	680-750°C
THERMAL CONDUCTIVITY	160-180 W/(m K)	**THERMAL EXPANSION (from 20°C to 100°C)**	$22 \cdot 10^{-6}$/K

TECHNOLOGICAL PROPERTIES - EN 1706:2020

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

APPLICATIONS

High mechanical characteristics, with good pressure seal and weldability.
Used in the automotive sector (alloy wheels), railways, aeronautics and armaments. Alloy 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	8024	GAlSi 7 Mg	AS 7 G03		A 356.2	AlSi 7 Mg	C 4 CV	
Similars				LM 25				