

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si 7 Mg**

Alloy designation: **EN AB and AC 42100 Al Si 7 Mg 0.3**

Replaces:

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti			
EN AB 42100	min	6,5				0,30						0,10			
	max	7,5	0,15	0,03	0,10	0,45	-	-	0,07	-	-	0,18	0,03	0,10	
	min	6,5				0,30						0,10			
	max	7,5	0,15	0,02	0,10	0,45	-	-	0,07	-	-	0,18	0,03	0,10	

MECHANICAL FEATURES DETECTED FROM SEPARATE CASTING TEST SPECIMENS

Casting process	Temper designations	Rm Tensile strenght		Sp 0,2 Yield strenght		A Elongation		HB Brinell hardness	
		EN 1706		EN 1706		EN 1706		EN 1706	
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast) Partially Aged Hardened and Aged artif.	F		140 - 220		80 - 140		2 - 6		45 - 60
	T64		200 - 270		120 - 170		4 - 10		60 - 80
	T6	230	240 - 320	190	220 - 280	2	3 - 6	75	80 - 110
SHELL (as cast) Partially Aged Hardened and Aged artif.	F		180 - 240		90 - 150		4 - 8		50 - 65
	T6	290	250 - 340	210	220 - 280	4	5 - 9	90	80 - 100
	T64	250	220 - 270	180	120 - 180	8	6 - 12	80	65 - 85

PHYSICAL PROPERTIES (indicative values subject to the UNI EN and ex DIN Standards)

DENSITY	2.66 Kg/dm ³
MELTING RANGE or MELTING POINT	550 °C 625 °C
SPECIFIC HEAT (at 100)°	0.92 J/Gk
LINEAR SHRINKAGE IN SAND PROCESS	1.1 - 1.2 %
LINEAR SHRINKAGE IN SHELL PROCESS	0.8 - 1.1 %
ELECTRIC CONDUCTIVITY	21 - 27 MS/m
MODULUS OF ELASTICITY	7400 m/mm ²

THERMAL CONDUCTIVITY at 20°C	160 - 180 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	-
LINEAR THERMAL EXPANSION from 20 t 200°C	22.0-10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300°C	-
SUGGESTED MAXIMUM TEMPERATURE	780 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	680 - 750 °C
°in shell	680 - 750 °C
°in pressure die	-

TECHNOLICL FEATURES, QUALITATIVE INDICATIONS

STRENGTH AT ELEVATED TEMPERATURE(to 200°C)	LOW
GENERAL RESIATANCE TO CORROSION	GOOD
MACHINABILITY	GOOD
CASTABILITY	GOOD
POLISHING	MEDIUM

RESISTANCE TO HOT TEARING	SMALL
PRESSURE TIGHTNESS	GOOD
WELDABILITY	EXCELLENT
DECORATIVE ANODISING	BAD
PROTECTIVE ANODISING	BAD

COMPARISON WITH EQUIVALENT OR SIMILAR FOREIGN STANDARDS

	ITALY	GERMANY	FRANCE	G.B.R.	USA	ISO	JAPAN	TURKEY
	UNI	(Din1725/5-86)	(NFA57-105)	(BS1490-88)	(ASTM B179-82)	(3522-84)	(JIS H2211-92)	(ETIAL)
Equivalent	UNI 8024	GALSI 7 MG	AS 7 G03		A 356.2	Al Si 7 Mg	C 4 CV	
Similar				LM 25				

HEAT TREATMENTS

Hardening 520 - -535°C after pre-heating of 4 - 10 hours in aging conditions
 Complete Artificial Aging at 155 - 165°C for 6 - 8 hours.
 Partial aging at 150 - 160 °C for 2 - 3 hours.