



Continuous casting aluminium alloys.

Standard: UNI EN 1676 and 1706

Alloy group: Al Si 7 Mg

Alloy designation: EN AB and AC 42000 - Al Si 7 Mg

Replaces: UNI 3599 G Al Si 7 Mg

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti			
EN AB 42000	min	6,5				0,25						0,05			
	max	7,5	0,45	0,15	0,35	0,65	-	0,15	0,15	0,15	0,05	0,20	0,05	0,15	
UNI 3599	min	6,5			0,40	0,30						0,10			
	max	7,5	0,5	0,05	0,6	0,45	-	0,05	0,05			0,20		0,15*	

*Exc.Fe

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	UNI 3599	EN 1706	UNI 3599	EN 1706	UNI 3599	EN 1706	UNI 3599
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast)	F	140	145-165	80	100-120	2	2-3	50	55-70
	T6	220	215-245	180	175-205	1	2-3	75	70-90
SHELL (as cast)	F	170	165-195	90	110-125	2,5	4-6	55	65-80
	T6	260	255-295	220	175-205	1	6-10	90	90-110
	T64	240	-	200	-	2	-	80	-
PRESSURE DIE (as cast)									

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

DENSITY	2.68 Kg/dm ³
MELTING RANGE or MELTING POINT	559 °C 620 °C
SPECIFIC HEAT (at 100)°	0.23 cal/g °C
LATENT HEAT OF MELTING	93 cal/g
LINEAR SHRINKAGE	~1.20 %
ELECTRIC CONDUCTIVITY	19 - 25 MS/m
MODULUS OF ELASTICITY	7400 Kg/mm ²

THERMAL CONDUCTIVITY at 20°C	150 - 170 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	21.6x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 200°C	22.6x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300°C	23.4x10-6/°C
SUGGESTED MAXIMUM TEMPERATURE	780 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	690-740 °C
°in shell	680-730 °C
°in pressure die	-

TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS

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

RESISTANCE TO HOT TEARING	SMALL
PRESSURE TIGHTNESS	GOOD
WELDABILITY	GOOD
DECORATIVE ANODISING	MEDIUM
PROTECTIVE ANODISING	SUFFICIENT

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