BAYRAM METAL

Continuous casting aluminium alloys.

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si 5 Cu**

Alloy designation: **EN AB and AC 45300 - Al Si 5 Cu 1 Mg**

Replaces: **UNI 3600 - G Al Si 5 Cu Mg**

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Individual impurities	Global impurities
EN AB 45300	min	4,5		1,0		0,40								
	max	5,5	0,55	1,5	0,55	0,65	-	0,25	0,15	0,15	0,05	0,20	0,05	0,15
UNI 3600 - G Al Si 5 Cu Mg	min	4,5		1,10		0,45								
	max	5,5	0,5	1,50	0,1	0,65	-	0,10	0,05			0,15		0,15

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 3600	EN 1706	UNI 3600	EN 1706	UNI 3600	EN 1706	UNI 3600
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast)	F		145-175		125-145		1-2		65-85
Hardened and Artificially Aged.	T4	170	215-245	120	155-185	2	2-3	80	85-100
	T6 2	230	245-265	200	185-215	1	1-2	100	95-110
SHELL (as cast)	F		205-245		125-155		4-5		70-95
Hardened and Artificially Aged.	T4	230	305-345	140	195-235	3	5-9	85	100-130
	T6 3	280	345-390	210	275-315	1	2-5	110	110-140

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

DENSITY	2.71 Kg/dm³
MELTING RANGE or MELTING POINT	554 ℃ 627 ℃
SPECIFIC HEAT (at 100)°	0.23 cal/g °C
LATENT HEAT OF MELTING	93 cal/g
LINEAR SHRINKAGE	˜1,30 %
ELECTRIC CONDUCTIVITY	19 - 23 MS/m
MODULUS OF ELASTICITY	7200 Kg/mm²

THERMAL CONDUCTIVITY at 20°C	140 - 150 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100℃	22.2x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 200℃	23.3x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300℃	24.1x10-6/°C
SUGGESTED MAXIMUM TEMPERATURE	780 ℃
SUGGESTED CASTING TEMPERATURE	
°in sand	690-750 ℃
°in shell	680-740 ℃
°in pressure die	

TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS

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

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

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