



Continuous casting aluminium alloys.

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si**

Alloy designation: **EN AB and AC 44100 - Al Si 12 (b)**

Replaces: **UNI 4514 - G Al Si 13**

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Individual impurities	Global impurities
EN AB 44100	min	10,5												
	max	13,5	0,55	0,10	0,55	0,10	-	0,10	0,15	0,10	-	0,15	0,05	0,15
UNI 4514 - G Al Si 13	min	12,0												
	max	13,5	0,6	0,05	0,4	0,05	-	0,01	0,08			0,10		0,15*

*Exc.Fe+Mn+Ti

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 4514	EN 1706	UNI 4514	EN 1706	UNI 4514	EN 1706	UNI 4514
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast) Annealed	F	150	165-195	70	80-100	4	4-8	50	50-60
	T5		155-195		70-110		6-10		50-60
SHELL (as cast) Annealed	F	170	175-215	80	90-110	5	5-7	55	55-65
	T5		165-215		80-100		6-10		50-60
PRESSURE DIE (as cast)	F		225-265		125-165		1,5-2,5		75-95

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

DENSITY	2.65 Kg/dm ³
MELTING RANGE or MELTING POINT	577 °C
SPECIFIC HEAT (at 100)°	0.23 cal/g °C
LATENT HEAT OF MELTING	93 cal/g
LINEAR SHRINKAGE	~1,30 %
ELECTRIC CONDUCTIVITY	16 - 23 MS/m
MODULUS OF ELASTICITY	7600 Kg/mm ²

THERMAL CONDUCTIVITY at 20°C	130 - 160 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	20.0x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 200°C	20.5x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300°C	21.5x10-6/°C
SUGGESTED MAXIMUM TEMPERATURE	780 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	700-750 °C
°in shell	700-750 °C
°in pressure die	640-700 °C

TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS

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

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

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