

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si Mg Ti**

Alloy designation: **EN AB and AC 41000 - Al Si 2 Mg Ti**

Replaces: **UNI 3055 - G Al Si 2 Mn Mg**

**CHEMICAL COMPOSITION %**

ALLOY		ELEMENTS												Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti			
EN AB 41000	min	1,6			0,30	0,50						0,07			
	max	2,4	0,50	0,08	0,50	0,65	-	0,05	0,10	0,05	0,05	0,15	0,05	1,15	
UNI 3055	min	1,8			0,60	0,55									
	max	2,3	0,5	0,05	0,8	0,75	-	0,01	0,05			0,15		0.1*	

\*Exc.Fe+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 3055	EN 1706	UNI 3055	EN 1706	UNI 3055	EN 1706	UNI 3055
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast)	F	140	120-175	70	80-125	3	1.0-3.0	50	50-70
	T6	240	215-295	180	195-245	3	1.0-2.5	85	80-100
SHELL (as cast)	F	170	125-195	70	100-150	5	1.0-5.0	50	50-80
	T6	260	245-295	180	195-275	5	1.0-3.0	85	90-105
PRESSURE DIE (as cast)									

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

DENSITY	2.70 Kg/dm <sup>3</sup>
MELTING RANGE or MELTING POINT	550 °C 640 °C
SPECIFIC HEAT (at 100)°	0.23 cal/g °C
LATENT HEAT OF MELTING	93 cal/g
LINEAR SHRINKAGE	~1.35 %
ELECTRIC CONDUCTIVITY	19 - 25 MS/m
MODULUS OF ELASTICITY	7200 Kg/mm <sup>2</sup>

THERMAL CONDUCTIVITY at 20°C	140 - 160 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	23.0x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 200°C	23.5x10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300°C	24.0x10-6/°C
SUGGESTED MAXIMUM TEMPERATURE	
SUGGESTED CASTING TEMPERATURE	
°in sand	680-720 °C
°in shell	680-720 °C
°in pressure die	

**TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS**

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

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

**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	SA-3551,1							
Similar								

**HEAT TREATMENTS**

Water quenching from 520-540°C after pre-heating in normal conditions for 2 - 4 hours.  
Artificial Aging 155 - 165°C for 8 - 12 hours in normal conditions.  
Annealing 330 - 370 °C for 4 - 8 hours in normal conditions.