

# 6005 A

## EN AW-6005A - EN AW-AI SiMg(A)



### Chemical composition :

According to: EN 573-3:2009(F)

Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	remarks	Others		Aluminium min
												Each	Total	
0,50 - 0,90	0,35	0,30	0,50	0,40 - 0,70	0,30	...	0,20	0,10	...	...	0,12-0,50 Mn+Cr	0,05	0,15	Balance

### Typical physical properties:

According to: "mill products general properties" Pechiney

1MPa = 1N/mm<sup>2</sup>

Density g/cm <sup>3</sup> .....	2,7	Poisson ratio .....	0,33
Melting range °C .....	605 - 655	Thermal conductivity (0 to 100°C)- W/m °C (T6 temper) .....	178
Coefficient of linear expansion (0 to 100°C)-°C <sup>-1</sup> x 10(6) .....	23,6	Resistivity at 20°C - μΩ cm (T6 temper) .....	3,5
Modulus of elasticity MPa (average) .....	69 500	Specific heat (0 to 100°C) J/kg °C .....	940

### Technological properties :

According to: "mill products general properties" Pechiney

(A)-Very good (B)-Good (C)-Acceptable (D)-Poor or not recommended

#### Welding:

Electron beam  
Inert gas (TIG or MIG)  
Resistance welding  
Soldering

A
B
B
B

#### Deep drawing:

Annealed  
1/2 hard  
4/4 hard  
Spinning O temper


#### Normal behaviour

Atmospheric corrosion  
Marine environments  
**Machinability T5 temper**  
Break-up of chip

A
B
C

#### Anodizing

Protective  
Bright  
Hard

A
C
A

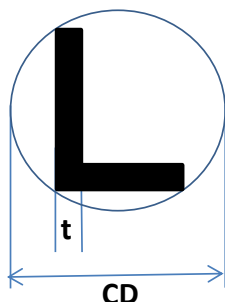
### Tolerances on width, depth or flat width

According to: EN 755-9 2008 (F)

Extracts from EN standard, please refer to EN standard for full specifications.

Dimensions in millimeters

#### STANDARD PROFILES



Flat width		Flat tolerances for circumference CD a) b)				
		CD ≤ 100	100 < CD ≤ 200	200 < CD ≤ 300	300 < CD ≤ 500	500 < CD ≤ 800
Superior to	Inferior or equal to					
...	10	± 0,25	± 0,30	± 0,35	± 0,40	± 0,50
10	25	± 0,30	± 0,40	± 0,50	± 0,60	± 0,70
25	50	± 0,50	± 0,60	± 0,80	± 0,90	± 1,00
50	100	± 0,70	± 0,90	± 1,10	± 1,30	± 1,50
100	150	...	± 1,10	± 1,30	± 1,50	± 1,70
150	200	...	± 1,30	± 1,50	± 1,80	± 2,00
200	300	...	...	± 1,70	± 2,10	± 2,40
300	450	...	...	...	± 2,80	± 3,00
450	600	...	...	...	± 3,80	± 4,20
600	800	...	...	...	...	± 5,00

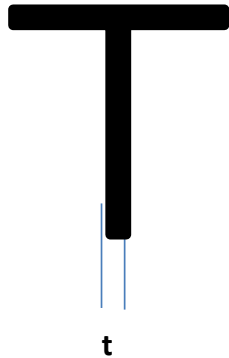
Alloys of group I : 6060, 6005 (for other alloys, please refer to EN standards).

(a) These tolerances do not apply for O and Tx510 tempers. For these tempers, tolerances must be agreed between buyer and supplier.

(b) General tolerances, see EN standards for specific tolerances (ie, on open ends to which data must be added).

**Thickness tolerances:**

Alloys of group I : AW-6060, AW-6005 (for other alloys, please refer to EN standard).



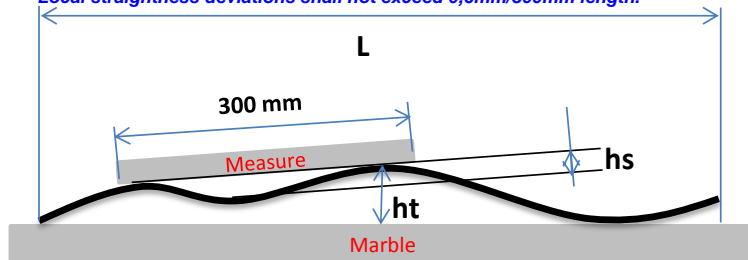
According to: EN 755-9 2008 (F) Extracts from EN standard, please refer to EN standard for full specifications. Dimensions in millimeters

Nominal wall thickness t		Wall thickness tolerances for circumscribed CD	
		CD ≤ 100	100 < CD ≤ 300
Superior to	Inferior or equal to		
...	1,5	± 0,20	± 0,30
1,5	3	± 0,25	± 0,40
3	6	± 0,40	± 0,60
6	10	± 0,60	± 0,80
10	15	± 0,80	± 1,00
15	20	± 1,20	± 1,50
20	30	± 1,50	± 1,80
30	40	...	± 2,00
40	50	...	...



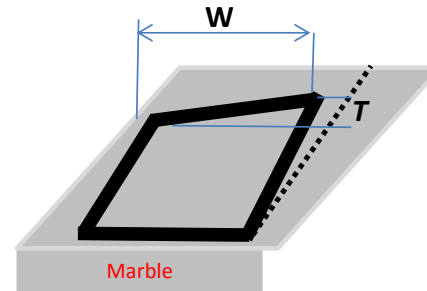
**Straightness tolerances:**

Straightness tolerance shall not exceed 1,5mm/m length.  
Local straightness deviations shall not exceed 0,6mm/300mm length.



**Twist tolerances:**

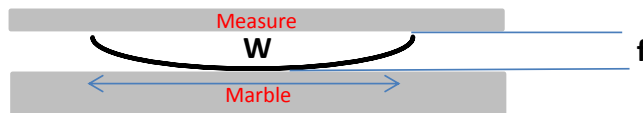
Straightness tolerance ht shall not exceed 1,5mm



Dimensions in millimeters

Width W		Twist tolerances T		
		On a 1000 mm length	On a total length of	
> to	≤ to		≤ to 6000 mm	> to 6000 mm
...	30	1,2	2,5	3,0
30	50	1,5	3,0	4,0
50	100	2,0	3,5	5,0
100	200	2,5	5,0	7,0
200	300	2,5	6,0	8,0
300	450	3,0	8,0	...

**Concavity - convexity tolerances:**



Dimensions in millimeters

Width W		Maximum allowable deviation f
> to	≤ or = to	
...	30	0,20
30	60	0,30
60	100	0,40
100	150	0,60
150	200	0,80
200	300	1,20
300	400	1,60
400	500	2,00

**Mechanical properties at room temperature :**

Extruded profile:

According to: EN 755-2 : 2008 (F) in MPA 1mpa = 1 N/m/m2

\* Values offered merely as a guide

Product	Temper	Thickness t mm	TENSILE PROPERTIES							Hardness
			Rm-UTS min (Mpa)	Rm-UTS max (Mpa)	Rp0,2MPa-0,2%ps	A% min	A% 50mm			HBW *
6005A Open profile	T4 c)	<= 25	180	...	90	15	13			50
6005A Open profile	T6 c)	<= 5	270	...	225	8	6			90
6005A Open profile	T6 c)	5 < t <= 10	260	...	215	8	6			85
6005A Open profile	T6 c)	10 < t <= 25	250	...	200	8	6			85

c) Characteristics can be obtained by press quenching