Datasheet:

EN AW 6101A
Rectangular Bar - Aluminium

Alumeco ApS
06-03-2025

Internal alloy name:	**6101A**
Chemical Symbol:	**AW-AlSiMg(A)**
International alloy name:	**EN AW-6101A**
UNS:	**A96101**
DIN-Werkstoff no.:	**3.3207**
Alloy type:	**Heat treatable alloy**

Main usage:

- Electrical busbar
- Heatsinks
- Forgings
- Conductors/connectors

Main properties:

- Relative high conductivity
- Very good atmospheric corrosion resistance
- Very good workability
- Good machinability

Important norms and literature:

General Standards:
EN 573-3:2013: Aluminium and aluminium alloys – Chemical composistion and form of wrought products – Part 3: Chemical composition and form of products.

Product standards:
EN 755-2:2016: Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 2: Mechanical properties.

Geometric Tolerance:
EN 755-5: Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 5: Rectangular bars, tolerances on dimensions and form

Chemical composition in %: EN 573-3:2013

Al	Si	Fe	Cu	Mg	Others	
					Each	Total
Remainder	0,30 – 0,7	Max. 0,40	Max. 0,05	0,40 – 0,90	0,03	0,10

Mechanical properties: EN 755-2:2016

Temper	Dimensions Width mm	Tensile Stress R_m MPa	Proof Stress $R_{p0,2}$ MPa	Elongation A % Min.	Hardness* HBW
T6	≤ 150	Min. 200	Min. 170	10	70

*** Information values only;**

Physical properties:

Density g/cm³	Solidification range °C	Electrical conductivity %IACS	Thermal conductivity W/m K	Thermal expansion (µm m^{-1} K^{-1})	Annealing temperature °C	E - modulus (N / mm²)
2,70	645 – 658	52	210 – 220	23,4	350	69.500

Properties and information's (3 high/good; 2 Middle; 1 Poor/bad)

Resistance:
Corrosion index, general: 3
Marine Atm. Corr index: 3

Hot workability:
Extrusion: 3
Forging: 3

Cold formability:
Cold formability general: 2
Deep drawing: 1
Bending: 2

Weldability:
TIG welding: 2
MIG welding: 2

Solderability:
Brazability index: 2
Solderability index: 2

Machinability:
Machinability index: 2

Anodizing:
Decorative anodizing surface treatment: 2
Protective anodizing index: 3
Hard anodizing: 3
Color anodizing: 2

Tolerances for Rectangular Bars of AW 6101A

Dimensions: EN 755-5:2008*
Width and thickness tolerances for alloy group 1

Width *W*		Thickness *t* tolerances for thickness ranges								
	Tolerances	2 ≤ *t* ≤ 6	6 < *t* ≤ 10	10 < *t* ≤ 18	18 < *t* ≤ 30	30 < *t* ≤ 50	50 < *t* ≤ 80	80 < *t* ≤ 120	120 < *t* ≤ 180	180 < *t* ≤ 240
10 ≤ *W* ≤ 18	± 0,25	± 0,20	± 0,25	± 0,25	-	-	-	-	-	-
18 < *W* ≤ 30	± 0,30	± 0,20	± 0,25	± 0,30	± 0,30	-	-	-	-	-
30 < *W* ≤ 50	± 0,40	± 0,25	± 0,25	± 0,30	± 0,35	± 0,40	-	-	-	-
50 < *W* ≤ 80	± 0,60	± 0,25	± 0,30	± 0,35	± 0,40	± 0,50	± 0,60	-	-	-
80 < *W* ≤ 120	± 0,80	± 0,30	± 0,35	± 0,40	± 0,45	± 0,60	± 0,70	± 0,80	-	-
120 < *W* ≤ 180	± 1,0	± 0,40	± 0,45	± 0,50	± 0,55	± 0,60	± 0,70	± 0,90	± 1,0	-
180 < *W* ≤ 240	± 1,4	-	± 0,55	± 0,60	± 0,65	± 0,70	± 0,80	± 1,0	± 1,2	± 1,4
240 < *W* ≤ 350	± 1,8	-	± 0,65	± 0,70	± 0,75	± 0,80	± 0,90	± 1,1	± 1,3	± 1,5
350 < *W* ≤ 450	± 2,2	-	-	± 0,80	± 0,85	± 0,90	± 1,0	± 1,2	± 1,4	± 1,6
450 < *W* ≤ 600	± 3,0	-	-	-	-	± 0,90	± 1,0	± 1,4	-	-

* Values are referred from Table 2 of EN 755-5:2008

Dimensions: EN 755-5:2008*
Maximum corner radii

Thickness *t*	Maximum corner radii (Alloy group 1)
2 ≤ *t* ≤ 10	0,6
10 < *t* ≤ 30	1,0
30 < *t* ≤ 80	1,8
80 < *t* ≤ 120	2,0
120 < *t* ≤ 180	2,5
180 < *t* ≤ 240	3,5

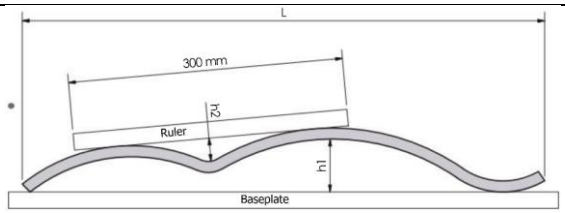
* Values are referred from Table 4 of EN 755-5:2008

Dimensions: EN 755-5:2008*
Fixed length tolerances

Width *W* (mm)	Tolerances on length		
	L ≤ 2000	2000 < *L* ≤ 5000	*L* > 5000
w ≤ 100	+5 0	+7 0	+10 0
100 < *w* ≤ 200	+7 0	+9 0	+12 0
200 < *w* ≤ 450	+8 0	+11 0	+14 0
450 < *w* ≤ 600	+9 0	+12 0	+16 0

* Values are referred from Table 5 of EN 755-5:2008

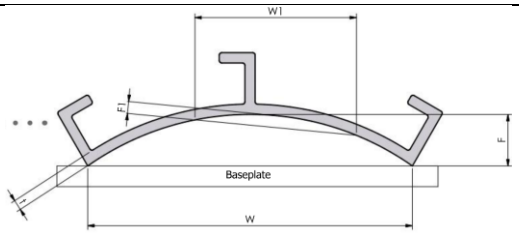
Dimensions: EN 755-5:2008*
Straightness tolerances



Width *W* (mm)	Thickness *t*	Maximum deviation from straightness per metre length h_1 / *L* (mm/m)	Maximum localized kink in any 300 mm portion h_2
10 ≤ *W* ≤ 80	10 ≤ *t* ≤ 80	2	1
80 < *W* ≤ 120	10 ≤ *t* ≤ 50	2	1
	50 < *t* ≤ 120	3	1,5
120 < *W* ≤ 180	10 ≤ *t* ≤ 50	3	1,5
	50 < *t* ≤ 180	4	2
180 < *W* ≤ 350	10 ≤ *t* ≤ 50	4	2
	50 < *t* ≤ 240	6	4
350 < *W* ≤ 450	10 ≤ *t* ≤ 240	6	4
450 < *W* ≤ 600	30 < *t* ≤ 120	6	4

* Values are referred from Table 6 of EN 755-5:2008

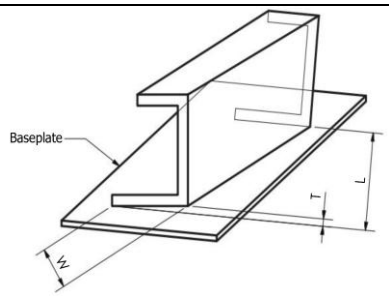
Dimensions: EN 755-5:2008*
Convexity-Concavity tolerances



Width *W*	Tolerances for convexity-concavity *F*
10 ≤ *t* ≤ 30	0,2
30 < *t* ≤ 50	0,3
50 < *t* ≤ 80	0,4
80 < *t* ≤ 120	0,6
120 < *t* ≤ 180	0,9
180 < *t* ≤ 240	1,2
240 < *t* ≤ 350	1,5
350 < *t* ≤ 450	2,0
450 < *t* ≤ 600	2,5

* Values are referred from Table 7 of EN 755-5:2008

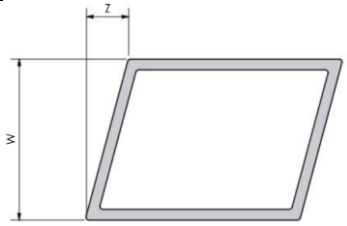
Dimensions: EN 755-5:2008*
Twist tolerances



Width *W*	Twist tolerances *T* (mm)	
	Per 1000 mm of length	Over the total length
10 ≤ *t* ≤ 30	1	3
30 < *t* ≤ 50	1,5	4
50 < *t* ≤ 120	2	5
120 < *t* ≤ 240	3	8
240 < *t* ≤ 350	4	10
350 < *t* ≤ 450	5	12
450 < *t* ≤ 600	6	14

* Values are referred from Table 8 of EN 755-5:2008

Dimensions: EN 755-5:2008*
Squareness tolerances



Thickness *t* (mm)	Maximum deviation from square *Z* (mm)
2 ≤ *t* ≤ 10	0,1
10 < *t* ≤ 100	0,01 * thickness
100 < *t* ≤ 180	1,0
180 < *t* ≤ 240	1,5

* Values are referred from Table 9 of EN 755-5:2008

Dimensions: EN 485-2:2016+A1:2018*

Bending tolerances AW 6082 (AW 6101A equivalent)

Temper	Specified thickness *t* (mm)	Bend radius[a]	
		180°	90°
T6	0,4 ≤ *t* ≤ 1,5	-	2,5 * *t* [b]
	1,5 < *t* ≤ 3,0	-	3,5 * *t* [b]
	3,0 < *t* ≤ 6,0	-	4,5 * *t* [b]
	6,0 < *t* ≤ 12,5	-	6,0 * *t* [b]

a) for information only

b) Appriciably smaller cold bend radii can be achieved immediately after quenching

* Values are referred from Table 47 of EN 485-2:2016+A1:2018