

Datasheet: EN AW 6101A Rectangular Bar - Aluminium Alumeco ApS 06-03-2025		Internal alloy name: 6101A Chemical Symbol: AW-<chem>AlSiMg(A)</chem> 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		Important norms and literature: General Standards: EN 573-3:2013: Aluminium and aluminium alloys – Chemical composition and form of wrought products – Part 3: Chemical composition and form of products. Geometric Tolerance: EN 755-5: Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 5: Rectangular bars, tolerances on dimensions and form Product standards: EN 755-2:2016: Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 2: Mechanical properties.																						
Main properties: Relative high conductivity Very good atmospheric corrosion resistance Very good workability Good machinability																								
Chemical composition in %: EN 573-3:2013 <table><tr><td>Al</td><td>Si</td><td>Fe</td><td>Cu</td><td>Mg</td><td colspan="2">Others</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>Each</td><td>Total</td></tr><tr><td>Remainder</td><td>0,30 – 0,7</td><td>Max. 0,40</td><td>Max. 0,05</td><td>0,40 – 0,90</td><td>0,03</td><td>0,10</td></tr></table>				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
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Mechanical properties: EN 755-2:2016 <table><tr><td>Temper</td><td>Dimensions Width mm</td><td>Tensile Stress R_m MPa</td><td>Proof Stress R_{p0,2} MPa</td><td>Elongation A % Min.</td><td colspan="2">Hardness*</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td colspan="2">HBW</td></tr><tr><td>T6</td><td>≤ 150</td><td>Min. 200</td><td>Min. 170</td><td>10</td><td colspan="2">70</td></tr></table>				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	
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Physical properties: <table><tr><td>Density</td><td>Solidification range</td><td>Electrical conductivity</td><td>Thermal conductivity</td><td>Thermal expansion</td><td>Annealing temperature</td><td>E - modulus</td></tr><tr><td>g/cm³</td><td>°C</td><td>%IACS</td><td>W/m K</td><td>(µm m⁻¹ K⁻¹)</td><td>°C</td><td>(N / mm²)</td></tr><tr><td>2,70</td><td>645 – 658</td><td>52</td><td>210 – 220</td><td>23,4</td><td>350</td><td>69.500</td></tr></table>				Density	Solidification range	Electrical conductivity	Thermal conductivity	Thermal expansion	Annealing temperature	E - modulus	g/cm ³	°C	%IACS	W/m K	(µm m ⁻¹ K ⁻¹)	°C	(N / mm ²)	2,70	645 – 658	52	210 – 220	23,4	350	69.500
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Properties and information's (3 high/good; 2 Middle; 1 Poor/bad) <table><tr><td> 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 </td><td> Weldability: TIG welding: 2 MIG welding: 2 Solderability: Brazability index: 2 Solderability index: 2 </td><td> Machinability: Machinability index: 2 Anodizing: Decorative anodizing surface treatment: 2 Protective anodizing index: 3 Hard anodizing: 3 Color anodizing: 2 </td></tr></table>				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																		
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Tolerances for Rectangular Bars of AW 6101A

Dimensions: EN 755-5:2008*

Width and thickness tolerances for alloy group 1

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

* 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)
$2 \leq t \leq 10$	0,6
$10 < t \leq 30$	1,0
$30 < t \leq 80$	1,8
$80 < t \leq 120$	2,0
$120 < t \leq 180$	2,5
$180 < t \leq 240$	3,5

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

Dimensions: EN 755-5:2008*

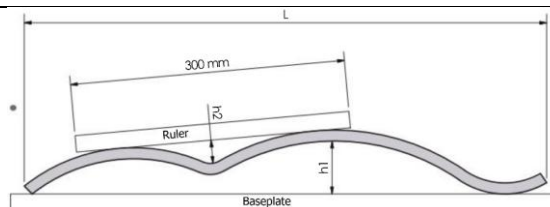
Fixed length tolerances

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

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

Dimensions: EN 755-5:2008*

Straightness tolerances

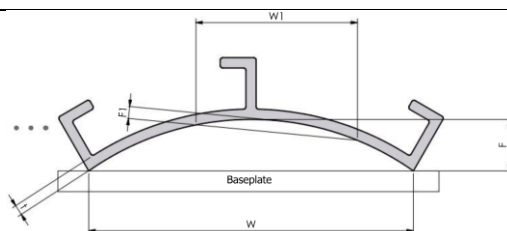


Width W (mm)	Thickness t	Maximum deviation from straightness per metre length h_1 / L (mm/m)	Maximum localized kink in any 300 mm portion h_2
$10 \leq W \leq 80$	$10 \leq t \leq 80$	2	1
$80 < W \leq 120$	$10 \leq t \leq 50$	2	1
	$50 < t \leq 120$	3	1,5
$120 < W \leq 180$	$10 \leq t \leq 50$	3	1,5
	$50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

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

Dimensions: EN 755-5:2008*

Convexity-Concavity tolerances

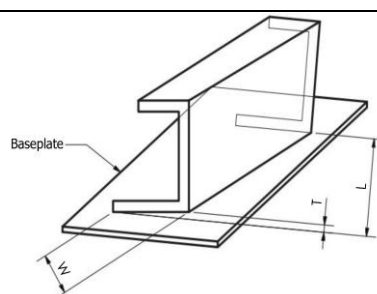


Width W	Tolerances for convexity-concavity F
$10 \leq t \leq 30$	0,2
$30 < t \leq 50$	0,3
$50 < t \leq 80$	0,4
$80 < t \leq 120$	0,6
$120 < t \leq 180$	0,9
$180 < t \leq 240$	1,2
$240 < t \leq 350$	1,5
$350 < t \leq 450$	2,0
$450 < t \leq 600$	2,5

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

Dimensions: EN 755-5:2008*

Twist tolerances

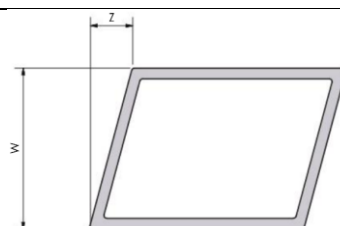


Width W	Twist tolerances T (mm)	
	Per 1000 mm of length	Over the total length
$10 \leq t \leq 30$	1	3
$30 < t \leq 50$	1,5	4
$50 < t \leq 120$	2	5
$120 < t \leq 240$	3	8
$240 < t \leq 350$	4	10
$350 < t \leq 450$	5	12
$450 < t \leq 600$	6	14

* 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)
$2 \leq t \leq 10$	0,1
$10 < t \leq 100$	0,01 * thickness
$100 < t \leq 180$	1,0
$180 < t \leq 240$	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	$0,4 \leq t \leq 1,5$	-	$2,5 * t^b$
	$1,5 < t \leq 3,0$	-	$3,5 * t^b$
	$3,0 < t \leq 6,0$	-	$4,5 * t^b$
	$6,0 < t \leq 12,5$	-	$6,0 * t^b$
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