

Datasheet: EN 1.4401/316 – Austenite Flat Bars - Stainless Steel Alumeco ApS 05-12-2024					Internal alloy name: 1.4401				
					Alloy type: Acid-resistance Austenite Chemical Symbol: X5CrNiMo17-12-2				
					EN: EN1.4401 AISI: 316 UNS: S31600 SS: 2347 JIS: SUS316 GB: S31608				
Main usage: - Food processing industry. - Brewery, chemical & petrochemical equipment. - Boat fittings, nuts & bolts, springs. - Building and Construction sector - Overland transport tankers				Important norms and literature: General Standards: EN 10088-1: List of stainless Steel Product standards: EN 10088-3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes Geometric Tolerance: EN 10058: Hot rolled flat steel bars & steel wide flats for general purposes - Dimensions & tolerances on shape & dimensions. EN 10278: Dimensions & tolerances of bright steel products					
Main properties: - Great weldability - High corrosion resistance to non-oxidising acids and chlorine-containing materials - Good formability, both cold and hot - Higher thermal expansion and lower heat conductivity compared to other carbon steels									
Chemical composition in %: EN 10088-1									
C	Si	Mn	P	S	Cr	Mo	Ni	Remarks	Rest
≤ 0,07	≤ 1,00	≤ 2,00	≤ 0,045	≤ 0,030*	16,5-18,5	2,0-2,5	10,0-13,5	N ≤ 0,10	Fe
* For machinability, a controlled sulfur content of 0,015%-0,030% is recommended & permitted. For weldability a controlled sulfur content of 0,008%- 0,030% is recommended & permitted. For polishability, a controlled sulfur content of 0,015% is recommended.									
Mechanical properties: EN 10088-3									
Width/ Thickness Range (mm)	Temper	Rm MPa	Rp0,2 MPa	Rp1,0 MPa	Elongation (Longitudinal) A%	Impact energy (Longitudinal) KV ₂	Hardness* HB		
W: 20 - 100 T: 3 - 10	Hot rolled	530 - 680	Min. 240	Min. 270	40	100	Max. 215		
* Information values only;									
Physical properties:									
Density g/cm ³	Electrical resistivity Ω mm ² / m	Thermal conductivity W/m K	Thermal expansion (µm m ⁻¹ K ⁻¹)	Specific heat (J kg ⁻¹ K ⁻¹)	E - modulus (N / mm ²)	Magnetizable	PREN (Min.)		
8,0	0,75	15	16,0	500	200.000	No	16,5		
Typical Alumeco products with this alloy									
• Flat bars - Dim: Width 20-100 mm x Thickness 3-10 mm									

Tolerances for flat bars for EN 1.4401:

Tolerances on drawn flats		
Width w (mm)	Tolerance on Width	
	Deviation (mm)	ISO 286-2 Class
$w \leq 18$	+0 -0,110	h11
$18 < w \leq 30$	+0 -0,130	h11
$30 < w \leq 50$	+0 -0,160	h11
$50 < w \leq 80$	+0 -0,190	h11
$80 < w \leq 100$	+0 -0,220	h11

* Values are referred from Table 3 of EN 10278:1999

Tolerances on drawn flats		
Thickness t (mm)	Tolerance on Thickness	
	Deviation (mm)	ISO 286-2 Class
$3 < t \leq 6$	-0,075	h11
$6 < t \leq 10$	-0,090	h11

* Values are referred from Table 3 of EN 10278:1999

Deviation from straightness				
Product form	Steel group	Nominal dimension	Deviation max. (mm)	
			Width	Thickness
Flats	< 0,25% C	$w < 120$ mm	1,5	1,5
	$\geq 0,25\%$ C, alloy steels, quenched and tempered steels		1,5	2,0
	Stainless steels, ball and roller bearing steels, tool steels		1,5	2,0
	< 0,25% C	$w \geq 120$ mm $w/t < 10:1$	1,5	2,0
	$\geq 0,25\%$ C, alloy steels, quenched and tempered steels		2,0	2,5
	Stainless steels, ball and roller bearing steels, tool steels		2,0	2,5
	< 0,25% C	$w \geq 120$ mm $w/t \geq 10:1$	2,0	2,5
	$\geq 0,25\%$ C, alloy steels, quenched and tempered steels		2,5	3,0
	Stainless steels, ball and roller bearing steels, tool steels		2,5	3,0

* Values are referred from Table 4 of EN 10278:1999

Types of length and length tolerances		
Type of length	Length range (mm)	Limit deviation (mm)
Manufacturing length (M)	$3000 < L \leq 13000$	10% of bars supplied may be below the minimum for the ordered range but not less than 75% of the minimum of the range.
Fixed length (F)	$3000 < L \leq 13000$	± 100
Exact length (E)	< 6000	± 25
	$6000 \leq L \leq 13000$	± 50

* Values are referred from EN 10058