

Datasheet: EN 1.4401/316 – Austenite Square Bars - Stainless Steel Alumeco ApS 05-12-2024				Internal alloy name:1.4401 Alloy type:Acid-resistance Austenite Chemical Symbol:X5CrNiMo17-12-2 EN:EN 1.4401 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 Geometric Tolerance: EN 10278: Dimensions & tolerances of bright steel products 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																									
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 <table><tr><td>C</td><td>Si</td><td>Mn</td><td>P</td><td>S</td><td>Cr</td><td>Mo</td><td>Ni</td><td>Remarks</td><td>Rest</td></tr><tr><td>≤ 0,07</td><td>≤ 1,00</td><td>≤ 2,00</td><td>≤ 0,045</td><td>≤ 0,030*</td><td>16,5-18,5</td><td>2,0-2,5</td><td>10,0-13,5</td><td>N ≤ 0,10</td><td>Fe</td></tr></table> * 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.									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
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Mechanical properties: EN 10088-3 <table><tr><td>Dim. Range / Thickness (mm)</td><td>Temper</td><td>Rm MPa</td><td>Rp_{0,2} MPa</td><td>Rp_{1,0} MPa</td><td>Elongation (Longitudinal) A%</td><td>Impact energy (Longitudinal) KV₂</td><td>Hardness* HB</td></tr><tr><td>10-100</td><td>Hot rolled</td><td>500 - 700</td><td>Min. 220</td><td>Min. 260</td><td>40</td><td>100</td><td>Max. 215</td></tr></table> * Information values only;									Dim. Range / Thickness (mm)	Temper	Rm MPa	Rp _{0,2} MPa	Rp _{1,0} MPa	Elongation (Longitudinal) A%	Impact energy (Longitudinal) KV ₂	Hardness* HB	10-100	Hot rolled	500 - 700	Min. 220	Min. 260	40	100	Max. 215				
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Typical Alumeco products with this alloy Square Bars - Dim: 10-100 mm x Length: 3000 mm																												

Tolerances for square bars for EN 1.4401:

Dimensions: EN 10059:2003*		
Preferred sizes and size tolerances of hot rolled square bars for general purposes		
Nominal Dimensions mm	Tolerance class to ISO 286-2	
	h11	h12
3 < s ≤ 6	+0 -0,075	+0 -0,120
6 < s ≤ 10	+0 -0,090	+0 -0,150
10 < s ≤ 18	+0 -0,110	+0 -0,180
18 < s ≤ 30	+0 -0,130	+0 -0,210
30 < s ≤ 50	+0 -0,160	+0 -0,250
50 < s ≤ 80	+0 -0,190	+0 -0,300
80 < s ≤ 120	+0 -0,220	+0 -0,350
120 < s ≤ 180	+0 -0,250	+0 -0,400

* Values are referred from Table 2 of EN 10278:1999

Dimensions: EN 10278:1999*			
Deviation from straightness			
Product form	Steel group	Nominal dimension	Deviation max. (mm)
Squares	< 0,25% C	d ≤ 75 mm	1,0
	≥ 0,25% C, alloy steels, quenched and tempered steels	d ≤ 75 mm	2,0
	Stainless steels, ball and roller bearing steels, tool steels	d ≤ 75 mm	1,0
	< 0,25% C	d > 75 mm	1,5
	≥ 0,25% C, alloy steels, quenched and tempered steels	d > 75 mm	2,5
	Stainless steels, ball and roller bearing steels, tool steels	d > 75 mm	1,5

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

Dimensions: EN 10278:1999*		
Types of length and length tolerances		
Type of length	Length range (mm)	Limit deviation (mm)
Manufacturing length (M)	3000 < L ≤ 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 ≤ 13000	±100
Exact length (E)	< 6000	±25
	6000 ≤ L ≤ 13000	±50

* Values are referred from Table 5 of EN 10278:1999