

Datasheet: EN 1.4401/316 – Austenite Welded Tubes - 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 Geometric Tolerance: EN 1127 D3/T3: Stainless steel tubes- Dimensions, tolerances and conventional masses per unit length Product standards: EN 10217-7: Welded steel tubes for pressure purposes- Technical delivery conditions-Part 7: Stainless steel tubes ASTM A554-98E1: Standard specification for welded stainless steel mechanical tubing																											
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 10217-7 <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 10217-7 <table><tr><td>Outer diameter (mm)</td><td>Wall thickness (mm)</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>21,3 - 600</td><td>1,3 - 3</td><td>530 - 680</td><td>Min. 240</td><td>Min. 270</td><td>40</td><td>100</td><td>Max. 215</td></tr></table> * Information values only;										Outer diameter (mm)	Wall thickness (mm)	Rm MPa	Rp _{0,2} MPa	Rp _{1,0} MPa	Elongation (Longitudinal) A%	Impact energy (Longitudinal) KV ₂	Hardness* HB	21,3 - 600	1,3 - 3	530 - 680	Min. 240	Min. 270	40	100	Max. 215				
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Typical Alumeco products with this alloy Outer Dia: 21.3 (3.5'')-606 mm (21.3'') ; Wall Thickness: 1.6-3 mm																													

Tolerances for welded steel tubes for EN 1.4401:

Tolerances on outside diameter	
Tolerance class	Tolerance on outside diameter
D ₁	± 1,5% with min. ± 0,75 mm
D ₂	± 1% with min. ± 0,5 mm
D ₃	± 0,75% with min. ± 0,3 mm
D ₄	± 0,5% with min. ± 0,1 mm

* Values are referred from Table 1 of EN 1127:1992

Tolerances on thickness	
Tolerance class	Tolerance on thickness
T ₁	± 15% with min. ± 0,6 mm
T ₂	± 12,5% with min. ± 0,4 mm
T ₃	± 10% with min. ± 0,2 mm
T ₄	± 7,5% with min. ± 0,15 mm
T ₅	± 5% with min. ± 0,1 mm

* Values are referred from Table 2 of EN 1127:1992

Tolerances on exact lengths	
Length L (mm)	Tolerance on exact length (mm)
$L \leq 6000$	+ 5 0
$6000 < L \leq 12000$	+10 0
$L > 12000$	+ by agreement 0

* Values are referred from Table 12 of EN 10217-7:2014