

TOLERANCES

Length (not acc. to ASTM A554)	0 / + 0.78" (0 / + 20 mm)
External dimensions h,b in. (mm)	
to 1 1/4 (31.8)	+/- 0.015" (0.38mm)
Over 1 1/4 to 2 1/2 (31.8 to 63.5)	+/- 0.020" (0.51mm)
Over 2 1/2 to 5 1/2 (63.5 to 139.7)	+/- 0.030" (0.76mm)
Over 5 1/2 to 8 (139.7 to 203.2)	+/- 0.060" (1.52mm)
Over 8 (203.2) *)	+/- 0.8% x side length
Concavity/convexity	<i>these are incl.in external dimensions</i>
Wall thickness	+/- 10%
Wall thickness, inch (mm)	Radii of corners max in. (mm)
Over 0.049 to 0.065 (1.24 to 1.65)	1/8 (3.2)
Over 0.065 to 0.083 (1.65 to 2.11)	9/64 (3.6)
Over 0.083 to 0.095 (2.11 to 2.42)	3/16 (4.8)
Over 0.095 to 0.109 (2.42 to 2.77)	13/64 (5.2)
Over 0.109 to 0.134 (2.77 to 3.40)	7/32 (5.6)
Over 0.134 to 0.156 (3.40 to 3.96)	1/4 (6.4)
Over 0.156 to 0.200 (3.96 to 5.08)	3/8 (9.5)
Over 0.200 to 0.250 (5.08 to 6.35)	1/2 (12.7)
Over 0.250 to 0.375 (6.35 to 9.53)	3/4 (19.1)
Twist (largest side length, in. (mm))	Twist in 3 feet, max, in. (mm/m)
Under 1/2 (12.7)	0.050 (1.4)
1/2 to 1 1/2 (12.7 to 38.1) incl.	0.075 (2.1)
Over 1 1/2 to 2 1/2 (38.1 to 63.5) incl.	0.095 (2.6)
Over 2 1/2 to 4 (63.5 to 101.6) incl.	0.125 (3.5)
Over 4 to 6 (101.6 to 152.4)	0.250 (6.9)
Over 6 (152.4)	0.375 (10.4)
Squareness of sides	0.006 x longest side
Straightness	0.075 in. in 3 ft (2.1 mm / 1 m)

*) Acc. to Stalatube norm, not included in ASTM A 554

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Stainless steel hollow sections – technical information

Austenitic (304, 304L, 321, 316, 316L, 316Ti)

Durability with excellent properties

- Strength, formability and toughness
- Good corrosion resistance
- High temperature performance
- Elegance and hygiene

PHYSICAL PROPERTIES, TYPICAL VALUES, 68 °F

Density	lb/in ³	0.285 for grades 304, 304L and 321 0.290 for grades 316, 316L and 316Ti
Modulus of Elasticity	psi	29 x 10 ⁶
Thermal Conductivity	Btu/hr-ft-°F	8.7
Coefficient of Thermal Expansion	in/in/ °F	9.2 x 10 ⁻⁶
Electrical Resistivity	μΩin	28.3 for grades 304, 304L and 321 29.1 for grades 316, 316L and 316Ti

DELIVERY CONDITION

Forming	Cold formed (roll formed)
Welding	TIG/Plasma or Laser
Weld condition	Grinded, when tube dimension ≤ 4" x 4" x 0.25" Brushed, when tube dimension > 4" x 4" x 0.25"

SURFACE CONDITION

Standard	As welded
Optional	Polished, pickled, glass beat blasting

PROCESSING SERVICE

Length	14-40 ft, standard length 20 ft
Precise cutting	1"-350", tolerance ± 0.05"
Angle cutting	30-90°, tolerance ± 1°
Laser cutting	Perforating
Tailored components	Components ready for installation

CORROSION RESISTANCE COMPARISON OF STALATUBE STEEL GRADES (PRE, Cr% + 3.3Mo% + 16N%)

1.4003 (S40977)	11
304, 304L and 321	19
316, 316L and 316Ti	23
1.4162 (S32101)	26

TUBE MARKING

Ink-jet marking on tube	Stalatube Oy made in Finland, steel grade, dimensions, coil number, production date, welding operator
Bundle tag	Dimensions, steel grade, surface, bundle size (pcs), length (m), bundle weight (kg), batch id, coil No., bundle No.

RECTANGULAR AUSTENITIC HOLLOW SECTIONS

Outside dimensions H x B [inch]	Weight [lb/ft]							
	.060	.080	.120	.180	.250	.312	.375	.500
1.5 x 1	0.983	1.294	1.890					
2 x 1	1.187	1.566	2.299					
2 x 1.5	1.391	1.838	2.707					
3 x 1	1.596	2.111	3.116					
3 x 1.5	1.800	2.383	3.524					
3 x 2		2.655	3.932	6.386	7.562			
4 x 2		3.200	4.749	7.747	9.195			
4 x 3			5.566	9.108	10.829			
5 x 2			5.566	9.108	10.829			
5 x 3			6.383	10.469	12.462			
6 x 2			6.383	10.469	12.462			
6 x 3			7.199	11.831	14.096			
6 x 4			8.016	13.192	15.729	20.703	25.542	
8 x 2			8.016	13.192	15.729			
8 x 4			9.650	15.194	18.996	25.059	30.987	
8 x 6			11.283	18.367	22.263	29.415	36.432	43.315
10 x 4			11.283	18.637	22.263	29.415	36.432	
10 x 6			12.917	21.359	25.530	33.771	41.877	49.849
10 x 8				24.082	28.797	38.127	47.323	56.383
12 x 4				21.359	25.530	33.771	41.877	
12 x 6				24.082	28.797	38.127	47.323	
12 x 8				26.804	32.064	42.483	52.768	62.917
12 x 10				29.527	35.331	46.839	58.213	69.451
14 x 6				26.804	32.064	42.483	52.768	62.917
14 x 8				29.527	35.331	46.839	58.213	69.451
14 x 10				32.250	38.589	51.195	63.658	75.985
16 x 8				32.250	38.589	51.195	63.658	75.985

Also other dimensions may be possible on request.

SQUARE AUSTENITIC HOLLOW SECTIONS

Outside dimensions H x B [inch]	Weight [lb/ft]							
	.060	.080	.120	.180	.250	.312	.375	.500
1 x 1	0.779	1.022	1.482					
1.25 x 1.25	0.983	1.294	1.890					
1.5 x 1.5	1.187	1.566	2.299	3.663				
2 x 2	1.596	2.111	3.116	5.024	5.928			
2.5 x 2.5	2.004	2.655	3.932	6.386	7.562			
3 x 3		3.200	4.749	7.747	9.195			
3.5 x 3.5			5.566	9.108	10.829			
4 x 4			6.383	10.469	12.462	16.347	20.097	
5 x 5			8.016	13.192	15.729	20.703	25.542	30.247
6 x 6			9.650	15.914	18.996	25.059	30.987	36.781
8 x 8			12.917	21.359	25.530	33.771	41.877	49.849
10 x 10				26.804	32.064	42.483	52.768	62.917
12 x 12				32.250	38.598	51.195	63.658	75.985

CHEMICAL COMPOSITION

(FULFILLS THE STANDARDS ASTM A 554-03 AND EN 10088-2)

AISI	EN	C %, max	Mn %, max	P %, max	Ni %	Cr %	Mo %	Ti %
304	1.4301	0.07	2.00	0.040	8.0-10.5	18.0-19.5		
304L	1.4307	0.03	2.00	0.040	8.0-10.5	18.0-19.5		
321	1.4541	0.08	2.00	0.040	9.0-12.0	17.0-19.0		5 x(C+N)-0.7
316	1.4401	0.07	2.00	0.040	10.0-13.0	16.5-18.0	2.0-2.5	
316L	1.4404	0.03	2.00	0.040	10.0-13.0	16.5-18.0	2.0-2.5	
316Ti ¹⁾	1.4571	0.08	2.00	0.045	10.0-13.5	16.5-18.0	2.0-2.5	5 x(C+N)-0.7

For all grades S max 0.015, Si max 0.75 and N max 0.10

¹⁾ Fulfills the standards A240-06b and EN 10088-2

MECHANICAL PROPERTIES

STANDARD STRENGTH CLASS MEASURED FROM COIL
(EN 10088-2)

AISI	EN	Yield strength R _{p0.2} min ksi	Tensile strength R _m min ksi	Elongation A ¹⁾ min %
304	1.4301	33	78	45
304L	1.4307	32	75	45
321	1.4541	32	75	40
316	1.4401	34	76	40
316L	1.4404	34	76	40
316Ti	1.4571	34	76	40

HIGH STRENGTH CLASS (STALA 350)

UP TO THICKNESS 0.250 "

MEASURED FROM TUBE IN LONGITUDINAL DIRECTION

Same for all grades	50	87	30
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¹⁾ A80 when thickness T < 0.120", A5 when thickness T ≥ 0.120"

We reserve the right to changes. Stalutube takes no responsibility for any errors in numerical information that might appear in this brochure.