

S-LOK

Stainless steel Seamless Tubing

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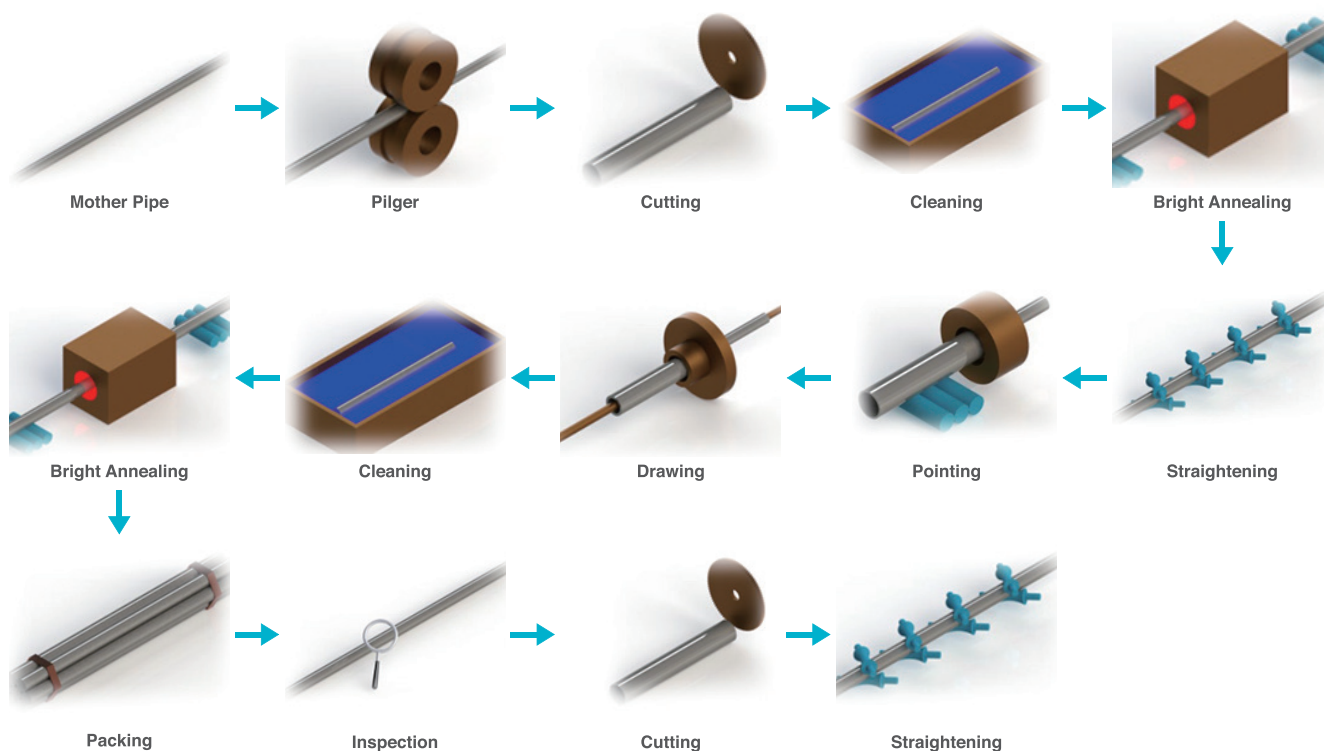
S-LOK Stainless Steel Seamless Tubing

Feature

- 316/316L stainless steel
- 1/8 to 1 inch sizes
- 4 to 20mm sizes
- Tubing is marked with size material, specification, heat no and lot no.



Manufacturing Process



Material Standard

Seamless Tube				Welded Tube			
ASTM / ASME	DIN	EN	JIS	ASTM / ASME	DIN	EN	JIS
A213 / SA213	17458	10216-5	G3463	A249 / SA249	17457	10216-7	G3463
A312 / SA312				A312 / SA312			
A269 / SA269			G3459	A269 / SA269			G3459
A632			G3459 (Special)	A632			G3459 (Special)
A270			G3447	A270			G3447

Technical Data

Inspection item

Items	AP	BA	EP
Chemical Composition	Mill Sheet	Mill Sheet	Mill Sheet
Mechanical Properties	Mill Sheet	Mill Sheet	Mill Sheet
Measure Tolerance	O	O	O
Roughness	O	O	O
Welding Test	*	*	*
Surface Microscope	*	*	*
Particle Test		*	*
Oil Content		*	*
Eluant Ion check			*
SEM Test			*
Moisture Test			*

* marked are optional tests - Optional tests are available upon request.

Chemical Composition

Element	Composition, wt. %	
	316 / 316L	304 / 304L
C	≤ 0.035	≤ 0.035
Si	≤ 1.0	≤ 1.0
Mn	≤ 2.00	≤ 2.00
P	≤ 0.045	≤ 0.045
S	≤ 0.03	≤ 0.03
Ni	10 ~ 15	8 ~ 12
Cr	16 ~ 18	18 ~ 20
Mo	2 ~ 3	-

Inner Surface Roughness

Level	Ry
AP	≤ 2.0 μm
BA	≤ 0.38 μm
EP	≤ 0.25 μm

Ordering Information



1 - Product

M-T : Tube

2 - Manufacturing method

S : Seamless
W : Welding

3 - Type of Product

S : Straight Type
C : Coil Type

4 - Tube O.D

01 : 1/16" 2M : 2mm
02 : 1/8" 3M : 3mm
03 : 3/16" 4M : 4mm
04 : 1/4" 6M : 6mm
05 : 5/16" 8M : 8mm
06 : 3/8" 10M : 10mm
08 : 1/2" 12M : 12mm
10 : 5/8" 16M : 16mm
12 : 3/4" 20M : 20mm
14 : 7/8" 22M : 22mm
16 : 1" 25M : 25mm
20 : 1-1/4" 28M : 28mm
24 : 1-1/2" 32M : 32mm
32 : 2" 38M : 38mm

5 - Wall Thickness

028 : 0.028" 080 : 0.8mm
035 : 0.035" 100 : 1.0mm
049 : 0.049" 12T : 1.2mm
065 : 0.065" 150 : 1.5mm
083 : 0.083" 180 : 1.8mm
095 : 0.095" 200 : 2.0mm
109 : 0.109" 220 : 2.2mm
120 : 0.120" 250 : 2.5mm
134 : 0.134" 280 : 2.8mm
156 : 0.156" 300 : 3.0mm

6 - Length

03 : 3m
04 : 4m
06 : 6m
50 : 50m
60 : 60m

7 - Product Grade

AP : AP Grade
BA : BA Grade
EP : EP Grade

8 - Material

S6 : 316/316L
Stainless Steel
S4 : 304/304L
Stainless Steel
CU : Copper

Ordering Information and Dimensions

Fractional Stainless Steel Seamless Tubing

Tube O.D inch	Tube Wall Thickness inch (mm)	Ordering Number	Length, m	Grade
1/16	0.012 (0.30)	M-TSS-01-012-04-BA-S6	4	BA
1/8	0.028 (0.71)	M-TSS-02-028-06-BA-S6	6	BA
3/16	0.035 (0.89)	M-TSS-03-035-06-BA-S6	6	BA
1/4	0.035 (0.89)	M-TSS-04-035-06-BA-S6	6	BA
	0.039 (1.00)	M-TSS-04-100-04-BA-S6	4	BA
	0.039 (1.00)	M-TSS-04-100-04-EP-S6	4	EP
	0.049 (1.24)	M-TSS-04-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-04-065-06-BA-S6	6	BA
3/8	0.035 (0.89)	M-TSS-06-035-06-BA-S6	6	BA
	0.039 (1.00)	M-TSS-06-100-04-BA-S6	4	BA
	0.039 (1.00)	M-TSS-06-100-04-EP-S6	4	EP
	0.049 (1.24)	M-TSS-06-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-06-065-06-BA-S6	6	BA
1/2	0.035 (0.89)	M-TSS-08-035-06-BA-S6	6	BA
	0.039 (1.00)	M-TSS-08-100-04-BA-S6	4	BA
	0.039 (1.00)	M-TSS-08-100-04-EP-S6	4	EP
	0.049 (1.24)	M-TSS-08-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-08-065-06-BA-S6	6	BA
5/8	0.035 (0.89)	M-TSS-10-035-06-BA-S6	6	BA
	0.049 (1.24)	M-TSS-10-049-06-BA-S6	6	BA
3/4	0.035 (0.89)	M-TSS-12-035-06-BA-S6	6	BA
	0.049 (1.24)	M-TSS-12-049-04-BA-S6	4	BA
	0.049 (1.24)	M-TSS-12-049-04-EP-S6	4	EP
	0.049 (1.24)	M-TSS-12-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-12-065-06-BA-S6	6	BA
7/8	0.065 (1.65)	M-TSS-14-150-06-BA-S6	6	BA
1	0.049 (1.24)	M-TSS-16-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-16-065-04-BA-S6	4	BA
	0.065 (1.65)	M-TSS-16-065-04-EP-S6	4	EP
	0.065 (1.65)	M-TSS-16-065-06-BA-S6	6	BA
	0.083 (2.11)	M-TSS-16-083-06-BA-S6	6	BA
1-1/4	0.049 (1.24)	M-TSS-20-049-06-BA-S6	6	BA
	0.065 (1.65)	M-TSS-20-065-06-BA-S6	6	BA
	0.083 (2.11)	M-TSS-20-083-06-BA-S6	6	BA
1-1/2	0.065 (1.65)	M-TSS-24-065-06-BA-S6	6	BA
	0.083 (2.11)	M-TSS-24-083-06-BA-S6	6	BA
2	0.083 (2.11)	M-TSS-32-083-06-BA-S6	6	BA

Metric Stainless Steel Seamless Tubing

Tube O.D mm	Thickness mm Tube Wall	Ordering Number	Length, m	Grade
4	1.0	M-TSS-04M-100-06-BA-S6	6	BA
6	1.0	M-TSS-06M-100-06-BA-S6	6	BA
8	1.0	M-TSS-08M-100-06-BA-S6	6	BA
	1.5	M-TSS-08M-150-06-BA-S6	6	BA
10	1.0	M-TSS-10M-100-06-BA-S6	6	BA
	1.5	M-TSS-10M-150-06-BA-S6	6	BA
12	1.0	M-TSS-12M-100-06-BA-S6	6	BA
	1.5	M-TSS-12M-150-06-BA-S6	6	BA
15	1.5	M-TSS-15M-150-06-BA-S6	6	BA
16	1.5	M-TSS-16M-150-06-BA-S6	6	BA
20	1.5	M-TSS-20M-150-06-BA-S6	6	BA

✦ Suggested Allowable Working Pressure for Stainless Steel Tubing

Fully annealed 304 or 316 high quality seamless steel tube to ASTM A269 or equivalent.
Hardness : HRB80 or less

Tube O.D (inch)	Tube Wall Thickness (inch)																
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188	
1/16	5,600	6,800	8,100	9,400	12,000												
1/8						8,500	10,900					Working pressure (psig)					
3/16						5,400	7,000	10,200									
1/4						4,000	5,100	7,500	10,200								
5/16							4,000	5,800	8,000								
3/8							3,300	4,800	6,500	7500							
1/2							2,600	3,700	5,100	6,700							
5/8		For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.						2,900	4,000	5,200	6,000						
3/4								2,400	3,300	4,200	4,900	5,800					
7/8								2,000	2,800	3,600	4,200	4,800					
1									2,400	3,100	3,600	4,200	4,700				
1-1/4										2,400	2,800	3,300	3,600	4,100	4,900		
1-1/2											2,300	2,700	3,000	3,400	4,000	4,900	
2												2,000	2,200	2,500	2,900	3,600	

Tube O.D (mm)	Tube Wall Thickness (mm)														
	0.3	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	5.0
2	210	660													
3		670									Working pressure (bar)				
4		500	660												
6		310	420	540	710										
8			310	390	520										
10			240	300	400	510	580								
12			200	250	330	410	470								
14			160	200	270	340	380	430							
15			150	190	250	210	360	400							
16				170	230	290	330	370	400						
18				150	200	260	290	320	370						
20				140	180	230	260	290	330	380					
22				140	180	200	230	260	300	340					
25						180	200	230	260	290	320				
28							180	200	230	260	280	330			
30		For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.					170	180	210	240	260	310			
32							160	170	200	220	240	290	330		
38								140	160	190	200	240	270	310	
50											150	180	210	240	270

- Allowable working pressures are calculated from as S value of 20,000 psi (137.8 MPa) for ASTM A269 tubing at -20 to 100°C (-28 to 37°C), as listed in ASME B 31.3 and ASME B31.1.
- Pressure calculations are based on maximum O.D and minimum wall thickness without allowance for corrosion and erosion.
- To determine bar, multiply psig by 0.0689 / To determine psig, multiply bar by 14.51. / To determine kPa, multiply psig by 6.89.
- For welded tubing, the following derating rate to be applied to weld integrity.
 - for single seam welded tubing, multiply by 0.80
 - for double seam welded tubing, multiply by 0.85

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