



**VIS-LOK<sup>®</sup>**

**SEAMLESS  
INSTRUMENTATION  
TUBE**

**SPECIFICATIONS BROCHURE**

**ibex**  
AUSTRALIA



# SEAMLESS STAINLESS STEEL BRIGHT ANNEALED (BA) INSTRUMENTATION TUBE

VIS-LOK high-quality seamless stainless steel instrumentation tube is stocked across Australia specifically for use with compression fittings and is suitable for bending and flaring. VIS-LOK seamless instrumentation tube is dual certified 316/316L, dual specified A269/A213 and used extensively in fields such as:

- Oil and gas
- Petrochemical
- Industrial and medical gases
- Mining and resources
- Process and power piping
- Power and cogeneration
- Pharmaceutical
- Food and beverage processing
- Water treatment and chemicals
- Automotive, ship building and aerospace
- Heat exchanger applications
- Industrial machinery manufacturing

VIS-LOK seamless instrumentation tube is available in imperial and metric sizes, fully certified, containing a minimum of 2.5% molybdenum to provide increased corrosion protection with a maximum hardness of 80 HRB.

## ■ SPECIFICATIONS:

**Product:** VIS-LOK seamless stainless steel tube

**Standard:** ASTM A269/A213 ASME SA213

**Grade:** TP316/316L (dual certified)

**Process:** Cold finish, ave. wall, bright annealed

**Delivery condition:** Plain ends, plugged or capped

**Certification:** EN 10204 3.1 available

**Molybdenum content:** Minimum of 2.5% moly

**Chemical composition:** meets 1.4435 as per EN10216-5

**Maximum hardness:** 80 HRB

**Country of origin:** Japan



## IMPERIAL



Seamless SS316/316L Bright Annealed A269/A213 Min Moly 2.5%

CODE	DIMENSION	LENGTH
SST1/4SBF35	1/4" x 0.035" (6.35mm x 0.89mm)	6m
SST1/4SBF49	1/4" x 0.049" (6.35mm x 1.24mm)	6m
SST5/16SBF49	5/16" x 0.049" (7.94mm x 1.24mm)	6m
SST3/8SBF35	3/8" x 0.035" (9.53mm x 0.89mm)	6m
SST3/8SBF49	3/8" x 0.049" (9.53mm x 1.24mm)	6m
SST3/8SBF65	3/8" x 0.065" (9.53mm x 1.65mm)	6m
SST1/2SBF35	1/2" x 0.035" (12.70mm x 0.89mm)	6m
SST1/2SBF49	1/2" x 0.049" (12.70mm x 1.24mm)	6m
SST1/2SBF65	1/2" x 0.065" (12.70mm x 1.65mm)	6m
SST1/2SBF83	1/2" x 0.083" (12.70mm x 2.11mm)	6m
SST5/8SBF65	5/8" x 0.065" (15.88mm x 1.65mm)	6m
SST3/4SBF49	3/4" x 0.049" (19.05mm x 1.24mm)	6m
SST3/4SBF65	3/4" x 0.065" (19.05mm x 1.65mm)	6m
SST3/4SBF83	3/4" x 0.083" (19.05mm x 2.11mm)	6m
SST1SBF49	1" x 0.049" (25.40mm x 1.24mm)	6m
SST1SBF65	1" x 0.065" (25.40mm x 1.65mm)	6m
SST1SBF83	1" x 0.083" (25.40mm x 2.11mm)	6m

## METRIC



Seamless SS316/316L Bright Annealed A269/A213 Min Moly 2.5%

CODE	DIMENSION	LENGTH
SST6SBF10	6mm x 1mm	6m
SST8SBF10	8mm x 1mm	6m
SST10SBF10	10mm x 1mm	6m
SST12SBF15	12mm x 1.5mm	6m
SST16SBF15	16mm x 1.5mm	6m
SST20SBF20	20mm x 2mm	6m
SST25SBF20	25mm x 2mm	6m

Other sizes are available on request. Please contact us on 1300 85 45 20.

# VIS-LOK® IMPERIAL TUBING THEORETICAL ALLOWABLE WORKING PRESSURE

Outside Diameter	TP316/TP316L														PSI
	Wall Thickness														
	Inch		0.035	0.049	0.065	0.068	0.083	0.088	0.091	0.095	0.109	0.119	0.126	0.133	0.178
	MM		0.89	1.24	1.65	1.73	2.11	2.24	2.31	2.41	2.77	3.02	3.20	3.38	4.52
1/4"	6.35	5400	8100	11100											
5/16"	7.94	4300	6200	8700											
3/8"	9.53	3500	5100	7100	7400										
1/2"	12.7	2600	3700	5100	5300	6700									
5/8"	15.88	2000	2900	4000	4200	5200	5500	5800							
3/4"	19.05	1700	2400	3300	3400	4200	4500	4700	4900	5800	6400				
7/8"	22.23	1400	2000	2800	2900	3600	3800	4000	4200	4800	5300	5700	6100	8400	
1"	25.4	1200	1800	2400	2500	3100	3300	3400	3600	4200	4600	4900	5200	7300	

Values derived from ASTM A269 and B31.3 under -20 to 100°F (-28 to 37°C).

## ■ [Formula]

$$P = \frac{2 \times WT_{min} \times S \times E}{OD_{max} - (2 \times WT_{min} \times Y)}$$

P:	Allowable working pressure (psi)	
WT <sub>min</sub> :	Min. wall thickness (in.)	WT <sub>min</sub> =WT×0.90
WT:	Nominal wall thickness (in.)	
S:	Allowable stress (=20,000 psi)	
E:	Quality factors (=1.0)	
OD <sub>max</sub> :	Max outside diameter (in.)	OD <sub>max</sub> =OD+0.005
OD:	Nominal outside diameter (in.)	
Y:	Thickness coefficients	t ≤ D/6: Y=0.4 T > D/6: Y=(ID+2c)/(OD+ID+2c)
ID:	Nominal inside diameter (in.)	
c:	Coefficients (=0.02)	

# VIS-LOK® IMPERIAL TUBING THEORETICAL BURSTING PRESSURE

Outside Diameter	TP316/TP316L														PSI
	Wall Thickness														
	Inch		0.035	0.049	0.065	0.068	0.083	0.088	0.091	0.095	0.109	0.119	0.126	0.133	0.178
	MM		0.89	1.24	1.65	1.73	2.11	2.24	2.31	2.41	2.77	3.02	3.20	3.38	4.52
1/4"	6.35	21000	29400	39000											
5/16"	7.94	16800	23500	31200											
3/8"	9.53	14000	19600	26000	27200										
1/2"	12.7	10500	14700	19500	20400	24900									
5/8"	15.88	8400	11700	15600	16300	19900	21100	21800							
3/4"	19.05	7000	9800	13000	13600	16600	17600	18200	19000	21800	23800	25200			
7/8"	22.23	6000	8400	11100	11600	14200	15000	15600	16200	18600	20400	21600	22800	30500	
1"	25.4	5200	7300	9700	10200	12400	13200	13600	14200	16300	17800	18900	19900	26700	

Values derived from ASTM A269 and B31.3.

## ■ [Formula]

$$P = (2 \times WT \times S) / OD$$

P:	Bursting pressure (psi)
WT:	Nominal wall thickness (in.)
S:	Min. tensile strength (=75,000psi)
OD:	Nominal outside diameter (in.)

# METRIC TUBING THEORETICAL ALLOWABLE WORKING PRESSURE

Outside Diameter	TP316/TP316L			PSI
	Wall Thickness			
	MM	1	1.5	2
6	6500	10600		
8	4800	7700		
10	3700	5900	8300	
12	3100	4800	6800	
16	2300	3500	4900	
20	1800	2800	3800	
25	1400	2200	3000	

Values derived from ASTM A269 and B31.3 under -20 to 100°F (-28 to 37°C).

■ [Formula]  $P = (2 \times WT_{min} \times S \times E) / (OD_{max} - (2 \times WT_{min} \times Y))$

P:	Allowable working pressure (psi)		
WT <sub>min</sub> :	Min. wall thickness (mm.)	WT <sub>min</sub> = WT × 0.90	
WT:	Nominal wall thickness (mm.)		
S:	Allowable stress (=20,000 psi)		
E:	Quality factors (=1.0)		
OD <sub>max</sub> :	Max outside diameter (mm.)	OD <sub>max</sub> = OD + 0.005	
OD:	Nominal outside diameter (mm.)		
Y:	Thickness coefficients	t ≤ D/6:	Y = 0.4
		T > D/6:	Y = (ID + 2c) / (OD + ID + 2c)
ID:	Nominal inside diameter (mm.)		
c:	Coefficients (=0.02)		

# METRIC TUBING THEORETICAL ALLOWABLE BURSTING PRESSURE

Outside Diameter	TP316/TP316L			PSI
	Wall Thickness			
	MM	1	1.5	2
6	24700	37400		
8	18500	28000		
10	14800	22400	30000	
12	12300	18700	25000	
16	9200	14000	18800	
20	7400	11200	15000	
25	5900	8900	12000	

Values derived from ASTM A269 and B31.3.

■ [Formula]  $P = (2 \times WT \times S) / OD$

P:	Bursting pressure (psi)
WT:	Nominal wall thickness (mm.)
S:	Min. tensile strength (=75,000psi)
OD:	Nominal outside diameter (mm.)

# NOTABLE AUSTRALIAN PROJECTS

The following are notable Australian projects that were supplied with this Seamless Stainless Steel BA Instrumentation Tube.

## ■ CHEVRON - GORGON PROJECT

Gorgon is one of the world's largest LNG projects and the largest single resource project in Australia's history.

Material Supplied	Tons	Year
ASTM A269/A213TP316/316L	12	2011
ASTM A269/A213TP316L	4	2014

## ■ INPEX - ICHTHYS PROJECT

Ichthys LNG is ranked among the most significant oil and gas projects in the world.

Material Supplied	Tons	Year
ASTM A269/A213TP316/316L	7	2012

## ■ WOODSIDE - GREATER ENFIELD PROJECT

The Greater Enfield Project was approved in 2016, with a total investment of approximately US\$1.9 billion.

Material Supplied	Tons	Year
ASTM A213/A269TP316L	1	2017

## COMPLEMENTARY PRODUCTS



- Stainless Steel Compression Fittings
- Double ferrule compression
- Unique perfect tightness indicator

**VIS-LOK®**



- Stainless Steel Threaded High Pressure Pipe Fittings

**VIS-LOK®**

**EN 10204 3.1 Mill Certifications Available**



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**SEAMLESS INSTRUMENTATION TUBE**

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