

Tubing

Comparison of Tolerances for Welded Tubing

ASTM-A269 Unpolished				
Tube OD Size	Nominal Wall Thickness	O.D. Tolerance	Wall Thickness Tolerance	Ovality Allowance
½"	.065	± .005	± .006	0
¾"	.065	± .005	± .006	.020
1"	.065	± .005	± .006	.020
1½"	.065	± .010	± .006	.040
2"	.065	± .010	± .006	.040
2½"	.065	± .010	± .006	.040
3"	.065	± .010	± .006	.040
4"	.083	± .015	± .008	.060
6"	.109	± .030	± .010	.120
8"	.120	± .040	± .012	.120

ASTM-A269-02 Welded Austenitic Stainless Steel Tubing for General Service

ASTM-A270 Polished OD & ID				
Tube OD Size	Nominal Wall Thickness	O.D. Tolerance	Wall Thickness Tolerance	Ovality Allowance
1"	.065	+.002/-.008	± .008	*
1½"	.065	+.002/-.008	± .008	*
2"	.065	+.002/-.011	± .008	*
2½"	.065	+.002/-.011	± .008	*
3"	.065	+.003/-.012	± .008	*
4"	.083	+.003/-.015	± .010	*

ASTM-A270-02 Welded Austenitic Stainless Steel Sanitary Tubing

* Ovality can not exceed the OD range

Operating Pressures

304 Stainless Steel Tube				
Tube OD Size	Nominal Wall Thickness	Working Pressure PSI	Yield Pressure PSI	Burst Pressure PSI
½"	.065	4,880	7,800	19,500
¾"	.065	3,250	5,200	13,000
1"	.065	2,440	3,900	9,800
1½"	.065	1,630	2,600	6,500
2"	.065	1,220	2,000	4,900
2½"	.065	980	1,600	3,900
3"	.065	810	1,300	3,300
4"	.083	780	1,200	3,100
6"	.109	680	1,100	2,700
8"	.120	510	820	2,000

The pressures shown in the table are calculated using Barlow's Formula and the following properties:

- Material - 304
- Yield Strength (PSI) - 30,000
- Tensile Strength (PSI) - 75,000

Working Pressure = ¼ of Burst Pressure. These calculate from -20°F to 100°F.

316L Stainless Steel Tube				
Tube OD Size	Nominal Wall Thickness	Working Pressure PSI	Yield Pressure PSI	Burst Pressure PSI
½"	.065	4,550	6,500	18,200
¾"	.065	3,030	4,300	12,100
1"	.065	2,280	3,300	9,100
1½"	.065	1,520	2,200	6,100
2"	.065	1,140	1,600	4,600
2½"	.065	910	1,300	3,600
3"	.065	760	1,100	3,000
4"	.083	730	1,000	2,900
6"	.109	640	900	2,500
8"	.120	480	680	1,900

The pressures shown in the table are calculated using Barlow's Formula and the following properties:

- Material - 316L
- Yield Strength (PSI) - 25,000
- Tensile Strength (PSI) - 70,000

Working Pressure = ¼ of Burst Pressure. These calculate from -20°F to 100°F.

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