

High Purity Stainless Steel Tubing

Mechanically polished tubing to 20 μ -in Ra ID for pharmaceutical, semiconductor, biotechnology, and other high purity processes.

Summary:

Manufactured to stringent ASME BPE and ASTM A270 S2 specifications, this high quality tubing is 100% bore-scoped and mechanically polished on both the ID and OD. RathGibson proprietary finishing processes guarantee specific ID and OD Ra values for customer application, minimizing surface anomalies. A270-BPE series tubing is (available upon request) cleaned in the RathGibson ISO Class 5 Cleanroom (Fed 209E), significantly reducing customer inspection requirements prior to installation. Finest quality stainless steel materials made exclusively to RathGibson melt criteria are formed by the RathGibson Micro-Weld™ process to assure highest weld seam integrity to meet the most demanding applications. This tubing is available in 1/2" (12.7 mm) to 6" (152.4 mm) OD in 20ft. (6.1 m) lengths.

Materials

- 316L available from stock. Other alloys available on request.
- See reverse side for complete specifications regarding materials and dimensional tolerances.

Mechanical Tests

To ensure the highest surface quality in all of our sanitary tubing, RathGibson goes beyond the requirements of ASTM A269 and A270 by performing the full battery of ASTM bend and deformation tests required by ASME SA249 as well as additional deformation tests developed by RathGibson. The tests, combined with specific raw material requirements, eddy current testing at the tube mill, 100% bore-scoping prior to mechanical polish, and tighter OD and wall tolerances allow RathGibson to provide a more consistent superior quality product.

Annealing

- Hydrogen bright annealed in line to 1900°F (1040°C) minimum and rapidly quenched.

Cleaning

RathGibson® A270-BPE high purity tubing is available, upon request, with the ID cleaned for oxygen service, thermocouple cleaning per ASTM A632 or Nitric Acid & deionized water rinse. RathGibson's deionized water system guarantees less than 50 ppb TOC with an average of 10 ppb and a resistivity up to 18 M Ω . RathGibson also utilizes 99.9999% pure Nitrogen which is filtered to 0.5 micron at the point of use. Cleaning and packaging are performed in a certified ISO Class 5 Cleanroom.

Surface Finish

Surface finish is 20 μ -in Ra (0.5 μ m) ID maximum, 30 μ -in Ra (0.8 μ m) OD maximum measured per ASME/ANSI B46.1 with the profilometer reading at 90 degrees to major polishing pattern.

Packaging

As a final step in maintaining purity standards, RathGibson's A270-BPE tubing is packaged using protective 2 mil poly sleeving along with air tight plastic end caps. The tubing is then placed in triple wall boxes for maximum protection during shipment. Other packaging is available on customer request.

Specification

Tubing shall be RathGibson A270-BPE 316L tubing exceeding the requirements of ASME BPE and ASTM A270 S2. All tubing will be 100% bore-scoped and certified to 20 μ -in Ra (0.5 μ m) ID maximum and 30 μ -in Ra (0.8 μ m) OD maximum surface roughness measured per ASME/ANSI B46.1 with the profilometer reading at 90 degrees to major polishing pattern.

Tubing Sizes

1/2" to 6" OD



ISO 9001:2000
CERTIFIED

PED 97/23/EC
CERTIFIED



Photo courtesy
Holland® Applied Technologies





A270-BPE

High Purity Stainless Steel Tubing

Chemical Composition

Elements	316L (wt%)
(C) Carbon, max	0.035
(Mn) Manganese, max	2.00
(P) Phosphorus, max	0.040
(S) Sulfur	0.005 - 0.017
(Si) Silicon, max	0.75
(Ni) Nickel	10.0 - 15.0
(Cr) Chromium	16.0 - 18.0
(Mo) Molybdenum	2.0 - 3.0



RathGibson's certified ISO Class 5 Cleanroom.

Dimensional Tolerances

all dimensions in inches (mm)

Size OD	Nominal Wall	Outside Diameter	Length	Wall
1/2" (12.7)	.065" (1.65)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
3/4" (19.1)	.065" (1.65)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
1" (25.4)	.065" (1.65)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
1-1/2" (38.1)	.065" (1.65)	+/-0.008 (0.20)	+1/8" (3.18) - 0	+/-10.0%
2" (50.8)	.065" (1.65)	+/-0.008 (0.20)	+1/8" (3.18) - 0	+/-10.0%
2-1/2" (63.5)	.065" (1.65)	+/-0.010 (0.25)	+1/8" (3.18) - 0	+/-10.0%
3" (76.2)	.065" (1.65)	+/-0.010 (0.25)	+1/8" (3.18) - 0	+/-10.0%
4" (101.6)	.083" (2.11)	+/-0.015 (0.38)	+1/8" (3.18) - 0	+/-10.0%
6" (152.4)	.109" (2.77)	+/-0.030 (0.76)	+1/8" (3.18) - 0	+/-10.0%

**Take Full
Advantage of
RathGibson®
Performance**

RathGibson's extensive manufacturing facility in Janesville, Wisconsin can deliver superior tube and pipe quality along with the service performance needed by RathGibson's customers. We offer prompt quotations, tight production controls for best possible delivery, plus complete in-house testing and finishing for an extra measure of value. Rely on RathGibson® technology and the experience of our entire team to meet customers application requirements.



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