

# A270

## Sanitary Stainless Steel Tubing

For Dairy, Food, Beverage, and Other Sanitary Processes

RathGibson's sanitary tubing exceeds ASTM A270 S2 and 3A specifications and most user specifications. It is manufactured from the finest quality stainless steel materials made exclusively to the RathGibson melt criteria and formed by the RathGibson Micro-Weld™ process to assure weld seam integrity and industry leading ID and OD finishes to the low Ra values demanded by RathGibson's customers. RathGibson leads the industry in manufacturing the highest quality welded sanitary tubing, backed with technical expertise, advanced manufacturing and polishing capabilities, and unmatched service before and after the sale. All standard sanitary tubing sizes are available in 1/2" (12.7 mm) to 8" (203.2 mm) OD in stock 20' (6.1 m) lengths.



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## Materials

- 304L & 316L available from stock.

## 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, 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.

## Surface Finishes\*

Surface finish is 20 µ-in Ra (0.5 µm) ID maximum, 30 µ-in Ra (0.8 µm) OD maximum surface roughness measured per ASME/ANSI B46.1 with the profilometer reading at 90 degrees to major polishing pattern. RathGibson's polishing techniques result in surface finishes that lead the industry. All tubing is printed with size, gauge, alloy, ASTM and ASME specifications, heat number, and date of manufacturing for full traceability.

## Packaging

As a final step in maintaining purity standards, RathGibson's A270 S2 tubing is packaged using protective 2 mil poly sleeving along with air tight plastic end caps. The tubing is then placed in triple walled boxes for maximum protection during shipment. Other packaging is available on customer request.

## Specification

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

\* 1/2" (12.7 mm)

Surface finish for this size range is 30 µ-in Ra (0.8 µm) ID maximum.

Other Ra finishes are available upon request.

## Chemical Composition

Elements		304L (wt%)	316L (wt%)
(C)	Carbon, Max.	0.035	0.035
(Mn)	Manganese, Max.	2.00	2.00
(P)	Phosphorus, Max.	0.040	0.040
(S)	Sulfur, Max.	0.030	0.030**
(Si)	Silicon, Max.	0.75	0.75
(Ni)	Nickel	8.0-13.0	10.0-15.0
(Cr)	Chromium	18.0-20.0	16.0-18.0
(Mo)	Molybdenum	N/A	2.0-3.0
(Fe)	Iron	Bal.	Bal.
(Cu)	Copper	N/A	N/A
(N)	Nitrogen	N/A	N/A

\*\*ASTM A270 S2, 0.005-0.017

## Dimensional Tolerances

all dimensions in inches (mm)

Size OD	Nominal Wall	Outside Diameter	Length	Wall
1/2" (12.7)	0.065" (1.65) / 0.049" (1.25)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
3/4" (19.1)	0.065" (1.65) / 0.049" (1.25)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
1" (25.4)	0.065" (1.65) / 0.049" (1.25)	+/-0.005 (0.13)	+1/8" (3.18) - 0	+/-10.0%
1-1/4" (31.8)	0.065" (1.65)	+/-0.008 (0.20)	+1/8" (3.18) - 0	+/-10.0%
1-1/2" (38.1)	0.065" (1.65) / 0.049" (1.25)	+/-0.008 (0.20)	+1/8" (3.18) - 0	+/-10.0%
2" (50.8)	0.065" (1.65) / 0.049" (1.25)	+/-0.008 (0.20)	+1/8" (3.18) - 0	+/-10.0%
2-1/2" (63.5)	0.065" (1.65)	+/-0.010 (0.25)	+1/8" (3.18) - 0	+/-10.0%
3" (76.2)	0.065" (1.65)	+/-0.010 (0.25)	+1/8" (3.18) - 0	+/-10.0%
4" (101.6)	0.065" (1.65) / 0.083" (2.11)	+/-0.015 (0.38)	+1/8" (3.18) - 0	+/-10.0%
6" (152.4)	0.083" (2.11)	+/-0.030 (0.76)	+1" (25.4) - 0	+/-10.0%
6" (152.4)	0.109" (2.77)	+/-0.030 (0.76)	+1" (25.4) - 0	+/-10.0%
8" (203.2)	0.109" (2.77)	+0.061 (1.55) - 0.031 (0.79)	+1" (25.4) - 0	+/-10.0%

The information herein was correct at the time of publication and is subject to change without notice.

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