



Standard Specification for Seamless and Welded Austenitic and Ferritic/Austenitic Stainless Steel Sanitary Tubing¹

This standard is issued under the fixed designation A 270; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This specification covers grades of seamless, welded, and heavily cold worked welded austenitic and ferritic/austenitic stainless steel sanitary tubing intended for use in the dairy and food industry and having special surface finishes. Pharmaceutical quality may be requested, as a supplementary requirement.

1.2 This specification covers tubes in sizes up to and including 12 in. (304.8 mm) in outside diameter.

1.3 The values stated in inch-pound units are to be regarded as the standard.

1.4 Optional supplementary requirements are provided, and when one or more of these are desired, each shall be so stated in the order.

2. Referenced Documents

2.1 ASTM Standards:²

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels

A 480/A 480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip

A 923 Test Methods for Detecting Detrimental Intermetallic Phase in Wrought Duplex Austenitic/Ferritic Stainless Steels

A 967 Specification for Chemical Passivation Treatments for Stainless Steel Parts

A 1016/A 1016M Specification for General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes

E 527 Practice for Numbering Metals and Alloys (UNS)

2.2 ASME Standard:

B46.1 Surface Texture (Surface Roughness, Waviness, and Lay)³

2.3 ASME Boiler and Pressure Vessel Code:
Section VIII Pressure Vessels³

2.4 Other Standard:

SAE J1086 Practice for Numbering Metals and Alloys (UNS)⁴

3. Terminology

3.1 Definition:

3.1.1 *roughness average, Ra, n*—arithmetic average surface roughness normally reported in microinches or microns; a measurement of surface roughness usually performed by moving a stylus in a straight line along the surface, although other methods may be used.

4. Ordering Information

4.1 It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Such requirements may include, but are not limited to, the following:

4.1.1 Quantity (feet, metres, or number of lengths),

4.1.2 Name of material (austenitic steel tube),

4.1.3 Process seamless (SML), welded (WLD), or heavily cold worked (HCW),

4.1.4 Size (outside diameter and average wall thickness),

4.1.5 Length (specific or random),

4.1.6 Surface finish (Section 13),

4.1.7 Optional requirements (product analysis, see Section 9; hydrostatic or nondestructive electric test, see Section 11).

4.1.8 Test report required (Certification Section of Specification A 1016/A 1016M),

4.1.9 Specification designation,

4.1.10 Special requirements, and

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys, and is the direct responsibility of Subcommittee A01.10 on Stainless and Alloy Steel Tubular Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from ASME International, Three Park Avenue, New York, NY 10016–5990.

⁴ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

***A Summary of Changes section appears at the end of this standard.**