



Designation: ~~A269-07a~~ Designation: A 269 – 08

## Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service<sup>1</sup>

This standard is issued under the fixed designation A 269; 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 ( $\epsilon$ ) 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 nominal-wall-thickness, stainless steel tubing for general corrosion-resisting and low- or high-temperature service, as designated in Table 1.

1.2 The tubing sizes and thicknesses usually furnished to this specification are ¼ in. (6.4 mm) in inside diameter and larger and 0.020 in. (0.51 mm) in nominal wall-thickness and heavier.

1.3 Mechanical property requirements do not apply to tubing smaller than ½ in. (3.2 mm) in inside diameter or 0.015 in. (0.38 mm) in thickness.

NOTE 1—Additional testing requirements may apply for use in ASME B31.3 applications.

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

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

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

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

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products

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

A 632 Specification for Seamless and Welded Austenitic Stainless Steel Tubing (Small-Diameter) for General Service

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 in the Unified Numbering System (UNS)

#### 2.2 ASME Piping Code:

ASME B31.3 Process Piping<sup>3</sup>

#### 2.3 Other Standard:

SAE J1086 Practice for Numbering Metals and Alloys (UNS)<sup>4</sup>

### 3. Ordering Information

3.1 Orders for material under this specification should include the following, as required, to describe the desired material adequately:

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

3.1.2 Name of material (seamless or welded tubes),

3.1.3 Grade (Table 1),

3.1.4 Size (outside diameter and nominal wall thickness),

<sup>1</sup> 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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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

<sup>4</sup> Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.

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

- 3.1.5 Length (specific or random),
- 3.1.6 Optional requirements (heat treatment, see Section 6; hydrostatic or nondestructive electric test, see Section 10),
- 3.1.7 Test report required (see Section on Inspection of Specification A 1016/A 1016M),
- 3.1.8 Specification designation, and

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TABLE 1 Chemical Requirements %

Grade	Composition, %																
	TP 201	TP 201LN	TP 304	TP 304L	TP 304LN	TP 316	TP 316L	TP 316LN	TP 317	TP 321	TP 347	TP 348	TP XM-10	TP XM-11	TP XM-15	TP XM-19 XM-29	UNS Designation <sup>A</sup>
Carbon	0.15 max	0.03 max	0.08 max	0.035 max <sup>B</sup>	0.035 max <sup>B</sup>	0.08 max	0.035 max <sup>B</sup>	0.035 max <sup>B</sup>	0.08 max	0.08 max	0.08 max	0.08 max	0.08 max	0.04 max	0.08 max	0.06 max	S30400
Manganese, max <sup>C</sup>	5.5- 7.5	6.4- 7.5	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00- 10.00	8.00- 10.00	2.00	4.0- 6.0	S31600
Phosphorus, max.	0.060	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	S31603
Sulfur, max.	0.030	0.015	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	S31653
Silicon <sup>C</sup>	1.00	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	S31700
Nickel	3.5- 5.5	4.0- 5.0	8.0- 11.0	8.0- 12.0	8.0- 11.0	10.0- 14.0	10.0- 15.0	10.0- 13.0	11.0- 15.0	9.0- 12.0	9.0- 12.0	9.0- 12.0	5.5- 7.5	5.5- 7.5	17.5- 18.5	11.5- 13.5	S34700
Chromium	16.0- 18.0	16.0- 17.5	18.0- 20.0	18.0- 20.0	18.0- 20.0	16.0- 18.0	16.0- 18.0	16.0- 18.0	18.0- 20.0	17.0- 19.0	17.0- 19.0	17.0- 19.0	19.0- 21.5	19.0- 21.5	17.0- 19.0	20.5- 23.5	S38100
Molybdenum	...	...	...	...	...	2.00- 3.00	2.00- 3.00	2.00- 3.00	3.0- 4.0	...	...	...	...	...	...	...	S20910 S24000
Titanium	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S21900
Niobium	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S21904
Columbium	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S34800
Tantalum, max	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S20910 S24000
Tantalum, max	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S38100
Nitrogen <sup>F</sup>	0.25	0.10- 0.25	...	...	...	...	...	...	...	...	...	...	0.15- 0.40	0.15- 0.40	...	0.20- 0.40	S21900
Vanadium	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S21904
Copper	...	1.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S34700
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	S34800



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Co 0.20 max
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Co 0.20 max
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Others

TABLE 1 Continued

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