



Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service¹

This standard is issued under the fixed designation A 268/A 268M; 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 specification² covers a number of grades of nominal-wall-thickness, stainless steel tubing for general corrosion-resisting and high-temperature service. Most of these grades are commonly known as the “straight-chromium” types and are characterized by being ferromagnetic. Two of these grades, TP410 and UNS S 41500 (Table 1), are amenable to hardening by heat treatment, and the high-chromium, ferritic alloys are sensitive to notch-brittleness on slow cooling to ordinary temperatures. These features should be recognized in the use of these materials. Grade TP439 is used primarily for hot-water tank service and does not require post-weld heat treatment to prevent attack of the heat affected zone.

NOTE 1—TP329 (S32900) formerly in this specification, has been transferred to Specifications A 789/A 789M and A 790/A 790M.

1.2 An optional supplementary requirement is provided, and when desired, shall be so stated in the order.

NOTE 2—For tubing smaller than ½ in. [12.7 mm] in outside diameter, the elongation values given for strip specimens in Table 2 shall apply. Mechanical property requirements do not apply to tubing smaller than ⅝ in. [3.2 mm] in outside diameter or with walls thinner than 0.015 in. [0.4 mm].

1.3 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification. The inch-pound units shall apply unless the “M” designation of this specification is specified in the order.

2. Referenced Documents

2.1 ASTM Standards:

A 450/A 450M Specification for General Requirements for

Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes³
A 480/A 480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip⁴
A 763 Practices for Detecting Susceptibility to Intergranular Attack in Ferritic Stainless Steels⁴
A 789/A 789M Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service³
A 790/A 790M Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe³
A 941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys³
E 213 Practice for Ultrasonic Examination of Metal Pipe and Tubing⁵
E 273 Practice for Ultrasonic Examination of Longitudinal Welded Pipe and Tubing⁵
E 527 Practice for Numbering Metals and Alloys (UNS)³
2.2 *Other Standard:*
SAE J1086 Practice for Numbering Metals and Alloys (UNS)⁶

3. Terminology

3.1 For definitions of terms used in this specification, refer to Terminology A 941.

4. Ordering Information

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

- 4.1.1 Quantity (feet, metres, or number of lengths),
- 4.1.2 Name of material (seamless or welded tubes),
- 4.1.3 Grade (Table 1),
- 4.1.4 Size (outside diameter and nominal wall thickness),
- 4.1.5 Length (specific or random),
- 4.1.6 Optional requirements (hydrostatic or electric test, 14.7),

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.

Current edition approved Oct. 10, 2000. Published January 2001. Originally published as A 268 – 44 T. Last previous edition A 268/A 268M – 00^ε.

² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-268 in Section II of that Code.

³ *Annual Book of ASTM Standards*, Vol 01.01.

⁴ *Annual Book of ASTM Standards*, Vol 01.03.

⁵ *Annual Book of ASTM Standards*, Vol 03.03.

⁶ Available from Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.