



Standard Specification for Spray-Formed Seamless Austenitic Stainless Steel Pipes¹

This standard is issued under the fixed designation A 943/A 943M; 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.

1. Scope

1.1 This specification covers spray-formed seamless austenitic stainless steel pipe intended for high-temperature and general corrosive service.

1.2 Grades TP304H, TP309H, TP309HCb, TP310H, TP310HCb, TP316H, TP321H, TP347H, and TP348H are modifications of Grades TP304, TP309Cb, TP309S, TP310Cb, TP310S, TP316, TP321, TP347, and TP348, and are intended for high-temperature service.

1.3 Optional supplementary requirements are provided for pipe where a greater degree of testing is desired. These supplementary requirements call for additional tests to be made and, when desired, one or more of these may be specified in the order.

1.4 Appendix X1 lists the dimensions of seamless stainless steel pipe as shown in ANSI B36.19. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of this specification.

1.5 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.

NOTE 1—The dimensionless designator NPS (nominal pipe size) has been substituted in this standard for such traditional terms as “nominal diameter,” “size,” and “nominal size.”

2. Referenced Documents

2.1 ASTM Standards:

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels²

A 450/A 450M Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes³

A 999/A 999M Specification for General Requirements for Alloy and Stainless Steel Pipe³

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 Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 01.01.

E 112 Test Methods for Determining the Average Grain Size⁴

E 381 Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings⁴

E 527 Practice for Numbering Metals and Alloys (UNS)³

2.2 ANSI/ASME Standards:⁵

B1.20.1 Pipe Threads, General Purpose

B36.10 Welded and Seamless Wrought Steel Pipe

B36.19 Stainless Steel Pipe

2.3 Other Standard:⁶

SAE J1086 Practice for Numbering Metals and Alloys (UNS)

3. Ordering Information

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

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

3.1.2 Name of material (austenitic steel pipe),

3.1.3 Grade (Table 1),

3.1.4 Size (NPS or outside diameter and schedule number or average wall thickness or other),

3.1.5 Length (specific or random) (Section 10),

3.1.6 End finish (Section on Ends of Specification A 999/A 999M),

3.1.7 Optional requirements (Section 7),

3.1.8 Test report required (Certification Section of Specification A 999/A 999M),

3.1.9 Specification number, and

3.1.10 Special requirements or any supplementary requirements selected, or both.

4. General Requirements

4.1 Material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A 999/A 999M unless otherwise provided herein.

5. Materials and Manufacture

5.1 *Melting*—The steel shall be made by the electric-furnace process or by other similar processes. The primary

⁴ Annual Book of ASTM Standards, Vol 03.01.

⁵ Available from American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

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