Designation: A 949/A 949M – 01

Standard Specification for Spray-Formed Seamless Ferritic/Austenitic Stainless Steel Pipe[1]

This standard is issued under the fixed designation A 949/A 949M; 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 ferritic/austenitic stainless steel pipe intended for general corrosive service, with particular emphasis on resistance to stress corrosion cracking. These steels are susceptible to embrittlement if used for prolonged periods at elevated temperatures.

1.2 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.

1.3 Appendix X1 of this specification lists the dimensions of seamless stainless steel pipe as shown in ANSI B 36.19. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of this specification.

1.4 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 450/A 450M Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes[2]

A 941 Terminology Relating to Steel, Stainless Steel, Related Alloys and Ferroalloys[2]

A 999/A 999M Specification for General Requirements for Alloy and Stainless Steel Pipe[2]

E 381 Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings[3]

E 527 Practice for Numbering Metals and Alloys (UNS)[2]

2.2 *ANSI/ASME Standards:*

B 1.20.1 Pipe Threads, General Purpose[4]

B 36.10M-1995 Welded and Seamless Wrought Steel Pipe[4]

B 36.19 Stainless Steel Pipe

2.3 *Other Standard:*

SAE J1086 Practice for Numbering Metals and Alloys (UNS)[5]

3. Terminology

3.1 *Definitions*:

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

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *spray-formed*—denotes the fabrication of different shapes of a metallic material by deposition of a spray, consisting of droplets, solid particles, and particles that are partially solid, onto a moving substrate.

3.2.1.1 *Discussion*—The spray is produced by gas atomization of the liquid metal or alloy. On impingement with the substrate, the species of the spray consolidate and solidify completely to produce a product that is essentially free of porosity. The metallurgical characteristics of the spray-formed product are controlled primarily by the thermal condition of the spray, and that of the surface of the metallic deposit formed on the substrate.

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 (ferritic/austenitic steel pipe),

4.1.3 Grade (Table 1),

4.1.4 Size (NPS designator or outside diameter and schedule number of average wall thickness, or other),

[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 01.01.

[3] *Annual Book of ASTM Standards*, Vol 03.01.

[4] Available from American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036, and ASME International, Three Park Avenue, New York, NY 10016–5990.

[5] Available from Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

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