



Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings¹

This standard is issued under the fixed designation A403/A403M; 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 U.S. Department of Defense.

1. Scope*

1.1 This specification covers wrought stainless steel fittings for pressure piping applications.²

1.2 Several grades of austenitic stainless steel alloys are included in this specification. Grades are designated with a prefix, WP or CR, based on the applicable ASME or MSS dimensional and rating standards, respectively.

1.3 For each of the WP stainless grades, several classes of fittings are covered, to indicate whether seamless or welded construction was utilized. Class designations are also utilized to indicate the nondestructive test method and extent of nondestructive examination (NDE). Table 1 is a general summary of the fitting classes applicable to all WP grades of stainless steel covered by this specification. There are no classes for the CR grades. Specific requirements are covered elsewhere.

1.4 This specification is expressed in both inch-pound units and in SI units. However, unless the order specifies the applicable “M” specification designation (SI units), the material shall be furnished to inch-pound units.

1.5 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.6 This specification does not apply to cast steel fittings. Austenitic stainless steel castings are covered in Specifications A351/A351M, A743/A743M, and A744/A744M.

2. Referenced Documents

2.1 ASTM Standards:³

A351/A351M Specification for Castings, Austenitic, for Pressure-Containing Parts

A743/A743M Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application

A744/A744M Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

A960/A960M Specification for Common Requirements for Wrought Steel Piping Fittings

E112 Test Methods for Determining Average Grain Size

E165 Practice for Liquid Penetrant Examination for General Industry

2.2 ASME Standards:⁴

ASME B16.9 Factory-Made Wrought Steel Butt-Welding Fittings

ASME B16.11 Forged Steel Fittings, Socket-Welding and Threaded

2.3 MSS Standards:⁵

MSS SP-25 Standard Marking System for Valves, Fittings, Flanges, and Unions

MSS SP-43 Standard Practice for Light Weight Stainless Steel Butt-Welding Fittings

MSS SP-79 Socket-Welding Reducer Inserts

MSS SP-83 Steel Pipe Unions, Socket-Welding and Threaded

MSS SP-95 Swage(d) Nipples and Bull Plugs

MSS SP-97 Integrally Reinforced Forged Branch Outlet Fittings—Socket Welding, Threaded and Buttwelding Ends

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 A01.22 on Steel Forgings and Wrought Fittings for Piping Applications and Bolting Materials for Piping and Special Purpose Applications.

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² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-403 in Section II of that Code.

³ 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.

⁴ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

⁵ Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602, <http://www.mss-hq.com>.