



Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service¹

This standard is issued under the fixed designation A 420/A 420M; 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 specification² covers wrought carbon steel and alloy steel fittings of seamless and welded construction, covered by the latest revision of ASME B16.9, ASME B16.11, ASME B16.28, MSS-SP-79, and MSS SP-95. Fittings differing from these ASME and MSSVF standards shall be furnished in accordance with Supplementary Requirement S6. These fittings are for use in pressure piping and pressure vessel service at low temperatures.

1.2 Optional supplementary requirements are provided for fittings where a greater degree of examination is desired. When desired, one or more of these supplementary requirements shall be specified in the order.

1.3 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.

1.4 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.

2. Referenced Documents

2.1 In addition to those Referenced Documents listed in Specification A 960, the following list of standards apply to this specification.

2.2 ASTM Standards:

A 275 Test Method for Magnetic Particle Examination of Steel Forgings³

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products⁴

A 960 Specification for Common Requirements for

Wrought Steel Piping Fittings⁵

2.3 ASME Standards:

B 16.9 Factory-Made Wrought Steel Butt-Welding Fittings⁶

B 16.11 Forged Steel Fittings, Socket-Welding Threaded⁶

B 16.28 Wrought Steel Butt-Welding Short Radius Elbows and Returns⁶

Section VIII Division 1, Pressure Vessels⁶

Section V Nondestructive Examination⁶

2.4 MSS Standards:

MSS SP-25 Standard Marking System for Valves, Fittings, Flanges, and Unions⁷

MSS SP-79 Socket Welding Reducer Inserts⁷

MSS SP-95 Swage(d) Nipples and Bull Plugs⁷

2.5 ASNT Standards:

ASNT (1984) Recommended Practice No. SNT-TC-1A⁸

3. Ordering Information

3.1 See specification A 960.

4. General Requirements

4.1 Product furnished to this specification shall conform to the requirements of Specification A 960, including any supplementary requirements that are indicated in the purchase order. Failure to comply with the general requirements of Specification A 960 constitutes non-conformance with this specification. In case of conflict between the requirements of this specification and Specification A 960, this specification shall prevail.

5. Material

5.1 The material for fittings shall consist of forgings, bars, plates, seamless or fusion welded tubular products with filler metal added. It shall conform to the chemical requirements in Table 1, and be made by one of the following processes: open-hearth, basic-oxygen, or electric-furnace. The steels shall be made using recognized melting practices necessary to produce steels that shall meet the impact requirements of this specification.

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-420 in Section II of that Code.

³ *Annual Book of ASTM Standards*, Vol 01.05.

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

⁵ *Annual Book of ASTM Standards*, Vol 01.01.

⁶ Available from ASME International, Three Park Avenue, New York, NY 10016-5990.

⁷ Available from Manufacturers' Standardization Society of the Valve and Fittings Industry, 127 Park St. N.E., Vienna, VA 22180.

⁸ Available from American Society for Nondestructive Testing, 4153 Arlingate Plaza, Columbus, OH 43228-0518.