



Standard Specification for Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service¹

This standard is issued under the fixed designation A 409/A409M; 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 (€) indicates an editorial change since the last revision or reapproval.

€¹ NOTE—The Celsius conversion in 5.3.1 was corrected editorially in May 1996.

1. Scope

1.1 This specification² covers straight seam or spiral seam electric-fusion-welded, light-wall, austenitic chromium-nickel alloy steel pipe for corrosive or high-temperature service. The sizes covered are NPS 14 to 30 with extra light (Schedule 5S) and light (Schedule 10S) wall thicknesses. Table X1.1 shows the wall thickness of Schedule 5S and 10S pipe. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of this specification.

1.2 Several grades of alloy steel are covered as indicated in Table 1.

1.3 Optional supplementary requirements are provided. These call for additional tests to be made, and when desired shall be stated in the order, together with the number of such tests required.

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 240 Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels³

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels³

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.10 on Steel Tubing.

Current edition approved Oct. 10 and Nov. 10, 1995. Published March 1996. Originally published as A 409 – 57 T. Last previous edition A 409 – 92.

² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-409 in Section II of that Code.

³ *Annual Book of ASTM Standards*, Vol 01.03.

A 530/A530M Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe⁴

E 527 Practice for Numbering Metals and Alloys (UNS)⁴

2.2 ASME Boiler and Pressure Vessel Code:

Section IX Welding Qualifications.⁵

2.3 AWS Standards:⁶

A 5.22 Flux Cored Arc Welding

A 5.30 Consumable Weld Inserts for Gas Tungsten Arc Welding

A 5.4 Corrosion-Resisting Chromium and Chromium-Nickel Steel Covered Welding Electrodes

A 5.9 Corrosion-Resisting Chromium and Chromium-Nickel Steel Welding Rods and Bare Electrodes

A 5.11 Nickel and Nickel-Alloy Covered Welding Electrodes

A 5.14 Nickel and Nickel-Alloy Bare Welding Rods and Electrodes

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 (straight seam or spiral seam electric-fusion-welded austenitic steel pipe),

3.1.3 Grade (Table 1),

3.1.4 Size (outside diameter and schedule number, or wall thickness).

3.1.5 Length (specific or random) (Section 11),

3.1.6 End finish (Section on Ends of Specification A 530/A 530M),

3.1.7 Optional requirements (5.2.1-5.2.3 removal of weld bead; 5.3.2, special heat treatment; 15.2, nondestructive test; 10.1.1, outside diameter tolerance; 11.2, length circumferentially welded; 12.3, repair by welding and heat treatment subsequent to repair welding; 12.4, sand blasted or pickled; 17.1 Certification; Supplementary Requirements S1 to S6).

⁴ *Annual Book of ASTM Standards*, Vol 01.01.

⁵ Available from American Society of Mechanical Engineers, 345 E. 47th St., New York, NY 10017.

⁶ Available from American Welding Society, 550 Le Jeune Road, P.O. Box 351040, Miami, FL 33135.