



Designation: A423/A423M – 19

Standard Specification for Seamless and Electric-Welded Low-Alloy Steel Tubes¹

This standard is issued under the fixed designation A423/A423M; 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 minimum-wall-thickness, low-alloy steel tubes for pressure containing parts such as economizers or other applications where corrosion resistance is important.

1.2 The tubing sizes and thicknesses usually furnished to this specification are ½ to 5 in. [12.7 to 127 mm] in outside diameter and 0.035 to 0.500 in. [0.9 to 12.7 mm] inclusive, in minimum wall thickness. Tubing having other dimensions may be furnished, provided such tubes comply with all other requirements of this specification.

1.3 Mechanical property requirements do not apply to tubing smaller than ¼ in. [3.2 mm] in inside diameter or 0.015 in. [0.4 mm] in thickness.

1.4 This specification covers three grades, two types, and two manufacture finishes:

1.4.1 Grades 1, 2, and 3 are identified in **Table 1** (Chemical Requirements), and **Table 3** (Tensile Requirements),

1.4.2 Type (seamless or electric-resistance welded),

1.4.3 Manufacture (hot finished or cold finished).

1.5 Optional supplementary requirements S1 and S2 are provided and, when desired, shall be so stated in the order.

1.6 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. The inch-pound units shall apply unless the “M” designation of this specification is specified in the order.

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recom-*

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 A01.09 on Carbon Steel Tubular Products.

Current edition approved Nov. 1, 2019. Published November 2019. Originally approved in 1958. Last previous edition approved in 2014 as A423/A423M – 09 (2014). DOI: 10.1520/A0423_A0423M-19.

² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-423 in Section II of that Code.

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 *ASTM Standards:*³

A450/A450M Specification for General Requirements for Carbon and Low Alloy Steel Tubes

E213 Practice for Ultrasonic Testing of Metal Pipe and Tubing

E273 Practice for Ultrasonic Testing of the Weld Zone of Welded Pipe and Tubing

3. Ordering Information

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

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

3.1.2 Type of material (seamless or electric-resistance-welded tubes),

3.1.3 Grade 1, 2, or 3 (**Table 1** and **Table 3**),

3.1.4 Manufacture (hot finished or cold finished),

3.1.5 Size (outside diameter and minimum wall thickness),

3.1.6 Length (specific or random),

3.1.7 Required test options (hydrostatic or electric test, 11.7),

3.1.8 Test report required (see Certification Section of Specification A450/A450M),

3.1.9 Specification designation (including year of issue), and

3.1.10 Special requirements and any supplementary requirements selected.

4. Manufacture

4.1 Tubes made by the seamless process may be hot finished or cold finished.

5. Heat Treatment

5.1 All tubes shall be normalized or given such heat treatment as may be necessary to conform to the requirements of this specification.

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.

*A Summary of Changes section appears at the end of this standard