



Designation: A210/A210M – 19

Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes¹

This standard is issued under the fixed designation A210/A210M; 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, seamless medium-carbon steel, boiler tubes and boiler flues, including safe ends (see **Note 1**), arch and stay tubes, and superheater tubes.

NOTE 1—This type is not suitable for safe ending by forge welding.

1.2 The tubing sizes and thicknesses usually furnished to this specification are ½ in. 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 ⅛ in. [3.2 mm] in inside diameter or 0.015 in. [0.4 mm] in thickness.

1.4 This specification covers grades A-1 and C of Seamless Medium-Carbon Boiler and Superheater Tubes with different chemical and tensile requirements. (**Table 1**, **Table 3**, and **Section 11**.)

1.5 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.

1.6 *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 Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

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.

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² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-210 in Section II of that Code.

2. Referenced Documents

2.1 *ASTM Standards*:³

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

3. Ordering Information

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

- 3.1.1 Quantity (feet, metres, or number of lengths),
- 3.1.2 Name of material (seamless tubes),
- 3.1.3 Grade,
- 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 Optional requirements (Sections 7 and 10),
- 3.1.8 Test report required, (see Certification Section of Specification A450/A450M),
- 3.1.9 Specification designation, and
- 3.1.10 Special requirements.

4. General Requirements

4.1 Material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A450/A450M, unless otherwise provided herein.

5. Manufacture

5.1 *Steelmaking Practice*—The steel shall be killed.

5.2 The tubes shall be made by the seamless process and shall be either hot-finished or cold-finished, as specified.

6. Heat Treatment

6.1 Hot-finished tubes need not be heat treated. Cold-finished tubes shall be given a subcritical anneal, a full anneal, or a normalizing heat treatment after the final cold finishing process.

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