



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

This standard is issued under the fixed designation A 210/A 210M; 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 (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 When these products are to be used in applications conforming to ISO Recommendations for Boiler Construction, the requirements of Specification A 520, shall supplement and supersede the requirements of this specification.

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.

2. Referenced Documents

2.1 ASTM Standards:

A 450/A 450M Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes³

A 520 Specification for Supplementary Requirements for Seamless and Electric-Resistance-Welded Carbon Steel Tubular Products for High-Temperature Service Conform-

ing to ISO Recommendations for Boiler Construction³

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 A 450/A 450M),
- 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 A 450/A 450M, 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.

7. Surface Condition

7.1 If pickling or shot blasting or both are required, this shall be specifically stated in the order.

8. Chemical Composition

8.1 The steel shall conform to the requirements as to chemical composition prescribed in Table 1.

8.2 When a grade is ordered under this specification, supplying an alloy grade that specifically requires the addition of

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

³ *Annual Book of ASTM Standards*, Vol 01.01.