



Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels¹

This standard is issued under the fixed designation A 479/A 479M; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification² covers hot- and cold-finished bars of stainless steel, including rounds, squares, and hexagons, and hot-rolled or extruded shapes such as angles, tees, and channels for use in boiler and pressure vessel construction.²

NOTE 1—There are standards covering high nickel, chromium, austenitic corrosion, and heat-resisting alloy materials. These standards are under the jurisdiction of ASTM Subcommittee B02.07 and may be found in *Annual Book of ASTM Standards*, Vol 02.04.

1.2 The values stated in either inch-pound units or SI (metric) units are to be regarded separately as standards; within the text and tables, the SI units are shown in [brackets]. The values stated in each system are not exact equivalents; therefore, each system must be used independent of the other. Combining values from the two systems may result in nonconformance with the specification.

1.3 Unless the order specifies the applicable “M” specification designation, the material shall be furnished to the inch-pound units.

2. Referenced Documents

2.1 ASTM Standards:

- A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels³
- A 370 Test Methods and Definitions for Mechanical Testing of Steel Products³
- A 484/A 484M Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings³
- A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products³
- E 112 Test Methods for Determining the Average Grain Size⁴
- E 527 Practice for Numbering Metals and Alloys (UNS)⁵

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 A01.17 on Flat Stainless Steel Products.

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² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-479/SA-479M in Section II of that Code.

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

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

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

2.2 Other Document:

SAE J1086 Recommended Practice for Numbering Metals and Alloys⁶

3. Ordering Information

3.1 It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Such requirements may include, but are not limited to, the following:

- 3.1.1 Quantity (weight or number of pieces),
- 3.1.2 Dimensions, including diameter or thickness (and width), shape or form, applicable prints or sketches, length, etc.,
- 3.1.3 Type or UNS designation, (Table 1),
- 3.1.4 ASTM designation and edition year if other than latest edition,
- 3.1.5 Heat treated condition (Section 4.)
- 3.1.6 Finish (see Manufacture section of Specification A 484/A 484M).
- 3.1.7 Supplementary Requirements invoked for special services (described at the end of this specification):
- 3.1.8 Whether bars are to be rolled as bars or cut from strip or plate,
- 3.1.9 Preparation for delivery (see Preparation for Delivery section of Specification A 484/A 484M),
- 3.1.10 Marking requirements (see Marking section of Specification A 484/A 484M).
- 3.1.11 Surface preparation of shapes (see Manufacture section of Specification A 484/A 484M),
- 3.1.12 The intended use of the material, if the purchaser considers this useful information.

NOTE 2—A typical ordering description is as follows: 5000 lb [2000 kg]; 1.000 in. [25 mm] round bar by 10 to 12 ft [3 to 4 m]; Type 304 or UNS S30400; to Specification A 479 [A 479M]; annealed; centerless ground; plus any optional supplementary requirements; such as, for example, special marking instructions.

4. Heat Treatment

4.1 Austenitic Grades:

4.1.1 Except for the strain-hardened grade (see 4.1.3), and

⁶ Available from Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.