



Designation: A285/A285M – 17

# Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength<sup>1</sup>

This standard is issued under the fixed designation A285/A285M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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

## 1. Scope\*

1.1 This specification<sup>2</sup> covers carbon steel plates of low- and intermediate-tensile strengths which may be killed or semi-killed at the producer's option. These plates are intended for fusion-welded pressure vessels.

1.2 Plates under this specification are available in three grades having different strength levels as follows:

Grade	Tensile Strength, ksi [MPa]
A	45–65 [310–450]
B	50–70 [345–485]
C	55–75 [380–515]

1.3 The maximum thickness of plates is limited by the capacity of the composition to meet the specified mechanical property requirements.

NOTE 1—For killed carbon steels only, refer to the following ASTM specifications:<sup>3</sup>

**A299/A299M** Specification for Pressure Vessel Plates, Carbon Steel, Manganese-Silicon

**A515/A515M** Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service

**A516/A516M** Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service

1.4 For plates produced from coil and furnished without heat treatment or with stress relieving only, the additional requirements, including additional testing requirements and the reporting of additional test results, of Specification **A20/A20M** apply.

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.

*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.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>3</sup>

**A20/A20M** Specification for General Requirements for Steel Plates for Pressure Vessels

**A299/A299M** Specification for Pressure Vessel Plates, Carbon Steel, Manganese-Silicon

**A435/A435M** Specification for Straight-Beam Ultrasonic Examination of Steel Plates

**A515/A515M** Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service

**A516/A516M** Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service

**A577/A577M** Specification for Ultrasonic Angle-Beam Examination of Steel Plates

**A578/A578M** Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications

## 3. General Requirements and Ordering Information

3.1 Material supplied to this material specification shall conform to Specification **A20/A20M**. These requirements outline the testing and retesting methods and procedures, permitted variations in dimensions, and mass, quality and repair of defects, marking, loading, and ordering information.

3.2 In addition to the basic requirements of this specification, certain supplementary requirements are available when additional control, testing, or examination is required to meet end use requirements. The purchaser is referred to the

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.11 on Steel Plates for Boilers and Pressure Vessels.

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<sup>2</sup> For ASME Boiler and Pressure Vessel Code applications, see related Specification SA-285/SA-285M in Section II of that Code.

<sup>3</sup> 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