



Designation: A 302/A 302M – 97^{ε1}

Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese- Molybdenum and Manganese-Molybdenum-Nickel¹

This standard is issued under the fixed designation A 302/A 302M; 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.

^{ε1} NOTE—Editorial corrections were made to this standard in August 1999.

1. Scope

1.1 This specification² covers manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates intended particularly for welded boilers and other pressure vessels.

1.2 Material under this specification is available in four grades having different strength levels as follows:

Grade	Tensile Strength, ksi [MPa]	Type
A	75–95 [515–655]	Mn-Mo
B	80–100 [550–690]	Mn-Mo
C	80–100 [550–690]	Mn-Mo-Ni
D	80–100 [550–690]	Mn-Mo-Ni

1.3 The maximum thickness of plates is limited only by the capacity of the chemical composition to meet the specified mechanical property requirements. The minimum thickness is limited to 0.25 in. [6.5 mm].

1.4 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.

2. Referenced Documents

2.1 ASTM Standards:

A 20/A 20M Specification for General Requirements for Steel Plates for Pressure Vessels³

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 A01.11 on Steel Plates for Boilers and Pressure Vessels.

Current edition approved March 10, 1997. Published November 1997. Originally published as A 302 – 47 T. Last previous edition A 302/A 302M – 93.

² For ASME Boiler and Pressure Vessel Code applications, see related Specification SA-302/SA-302M in Section II of that Code.

³ *Annual Book of ASTM Standards*, Vol 01.04.

3. General Requirements and Ordering Information

3.1 Material supplied to this material specification shall conform to Specification A 20/A 20M. These requirements outline the testing and retesting methods and procedures, permissible variations in dimensions, and mass, quality and repair of defects, marking, loading, etc.

3.2 Specification A 20/A 20M also establishes the rules for ordering information that should be complied with when purchasing material to this specification.

3.3 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. These include:

3.3.1 Vacuum treatment,

3.3.2 Additional or special tension testing,

3.3.3 Impact testing, and

3.3.4 Nondestructive examination.

3.4 The purchaser is referred to the listed supplementary requirements in this specification and to the detailed requirements in Specification A 20/A 20M.

3.5 If the requirements of this specification are in conflict with the requirements of Specification A 20/A 20M, the requirements of this specification shall prevail.

4. Materials and Manufacture

4.1 *Steelmaking Practice*—The steel shall be killed and shall conform to the fine grain size requirement of Specification A 20/A 20M.

5. Heat Treatment

5.1 Plates 2 in. [50 mm] and under in thickness are normally supplied in the as-rolled condition. Plates may be ordered normalized or stress relieved, or both.

5.2 Plates over 2 in. [50 mm] in thickness shall be normalized.