



Designation: A 1010/A 1010M – 01^{ε1}

Standard Specification for Higher-Strength Martensitic Stainless Steel Plate, Sheet, and Strip¹

This standard is issued under the fixed designation A 1010/A 1010M; 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.

^{ε1} NOTE—Editorial changes were made in August 2001.

1. Scope

1.1 This specification covers martensitic stainless steels for various structural, architectural, pressure vessel, and heat-resisting applications. The mechanical properties of these steels are customarily, but not necessarily, developed by a suitable heat treatment generally referred to as tempering.

1.2 Steel products under this specification are available in two grades:

Grade	Yield Strength, min, ksi [MPa]
40 [275]	40 [275]
50 [350]	50 [350]

1.3 The maximum thickness of plates is limited only by the capacity of the composition to meet the specified mechanical property requirements; however, current practice normally limits the maximum thickness of plates furnished under this specification to 1 in. [25 mm].

1.4 The values stated in inch-pound or SI units are to be regarded separately as the standard. Within the text, 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 purchase order.

2. Referenced Documents

2.1 ASTM Standards:

A 480/A 480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip²

A 673/A 673M Specification for Sampling Procedure for

Impact Testing of Structural Steel³

E 527 Practice for Numbering Metals and Alloys (UNS)⁴

2.2 Other Document:

SAE J1086 Recommended Practice for Numbering Metals and Alloys⁵

3. General Requirements

3.1 The following requirements for orders for material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A 480/A 480M.

3.1.1 Terminology,

3.1.2 Ordering Information,

3.1.3 Process,

3.1.4 Heat Analysis,

3.1.5 Product Analysis,

3.1.6 Finish for Sheet,

3.1.7 Finish for Strip,

3.1.8 Finish for Plates,

3.1.9 Test Specimens,

3.1.10 Number of Tests,

3.1.11 Test Methods,

3.1.12 Retests and Retreatment,

3.1.13 Dimensions and Permissible Variations,

3.1.14 Workmanship,

3.1.15 Packaging, Marking, and Loading,

3.1.16 Inspection,

3.1.17 Rejection and Reheating, and

3.1.18 Material Test Report and Certification.

4. Chemical Composition

4.1 The steel shall conform to the requirements as to chemical composition specified in Table 1, and shall conform

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 A01.17 on Flat-Rolled and Wrought Stainless Steel.

Current edition approved March 10, 2001. Published April 2001. Originally published as A 1010-00. Last previous edition A 1010-00.

² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 01.04.

⁴ Annual Book of ASTM Standards, Vol 01.01.

⁵ Available from Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.