



Designation: **A1010/A1010M – 13 (Reapproved 2018) A1010/A1010M – 24**

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

This standard is issued under the fixed designation A1010/A1010M; 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 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 [345]	50 [345]

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 2 in. [50 mm].

1.4 This specification is expressed in both inch-pound units and in SI units; however, unless the purchase order or contract specifies the applicable *M* specification designation (SI units), the inch-pound units shall apply. The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 Supplementary requirements are provided for use at the option of the purchaser. The supplementary requirements shall apply only when specified individually by the purchaser in the purchase order or contract.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *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.*

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.

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*A Summary of Changes section appears at the end of this standard



2. Referenced Documents

2.1 *ASTM Standards:*²

[A480/A480M](#) Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
[A673/A673M](#) Specification for Sampling Procedure for Impact Testing of Structural Steel
[A941](#) Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys
[E527](#) Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.2 *Other Document:*

[SAE J1086](#) Recommended Practice for Numbering Metals and Alloys³

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this standard, refer to Terminology [A941](#).

3.1.2 For definitions of terms pertaining to plate, sheet, and strip, refer to Specification [A480/A480M](#).

4. General Requirements

4.1 The following requirements for orders for material furnished under this specification shall conform to the applicable requirements of the current edition of Specification [A480/A480M](#).

4.1.1 Terminology,

4.1.1.1 Ordering Information,

4.1.1.2 Process,

4.1.1.3 Heat Analysis,

4.1.1.4 Product Analysis,

4.1.1.5 Finish for Sheet,

4.1.1.6 Finish for Strip,

4.1.1.7 Finish for Plates,

4.1.1.8 Test Specimens,

4.1.1.9 Number of Tests,

4.1.1.10 Test Methods,

4.1.1.11 Retests and Retreatment,

4.1.1.12 Dimensions and Permissible Variations,

4.1.1.13 Workmanship,

4.1.1.14 Packaging, Marking, and Loading,

4.1.1.15 Inspection,

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<https://standards.iteh.ai/catalog/standards/astm/34f912af-7b35-4be6-878d-ff21250f5505/astm-a1010-a1010m-24>

² 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.

³ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.