



Designation: A6/A6M – 24

Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling¹

This standard is issued under the fixed designation A6/A6M; 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 U.S. Department of Defense.

1. Scope*

1.1 This general requirements specification² covers a group of common requirements that, unless otherwise specified in the applicable product specification, apply to rolled structural steel bars, plates, shapes, and sheet piling covered by each of the following product specifications issued by ASTM:

ASTM Designation ³	Title of Specification
A36/A36M	Carbon Structural Steel
A131/A131M	Structural Steel for Ships
A242/A242M	High-Strength Low-Alloy Structural Steel
A283/A283M	Low and Intermediate Tensile Strength Carbon Steel Plates
A328/A328M	Steel Sheet Piling
A514/A514M	High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
A529/A529M	High-Strength Carbon-Manganese Steel of Structural Quality
A572/A572M	High-Strength Low-Alloy Columbium-Vanadium Structural Steel
A573/A573M	Structural Carbon Steel Plates
A588/A588M	High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance
A633/A633M	Normalized High-Strength Low-Alloy Structural Steel Plates
A656/A656M	Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability
A690/A690M	High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments
A709/A709M	Structural Steel for Bridges
A710/A710M	Precipitation-Strengthened Low-Carbon Nickel-Copper-Chromium-Molybdenum-Columbium (Niobium) Alloy Structural Steel Plates
A769/A769M	Carbon and High-Strength Electric Resistance Forge-Welded Steel Structural Shapes
A786/A786M	Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates

A827/A827M	Plates, Carbon Steel, for Forging and Similar Applications
A829/A829M	Alloy Structural Steel Plates
A830/A830M	Plates, Carbon Steel, Structural Quality, Furnished to Chemical Composition Requirements
A857/A857M	Steel Sheet Piling, Cold Formed, Light Gage
A871/A871M	High-Strength Low-Alloy Structural Steel Plate With Atmospheric Corrosion Resistance
A913/A913M	High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST)
A945/A945M	High-Strength Low-Alloy Structural Steel Plate with Low Carbon and Restricted Sulfur for Improved Weldability, Formability, and Toughness
A950/A950M	Fusion-Bonded Epoxy-Coated Structural Steel H-Piles and Sheet Piling
A992/A992M	Structural Steel Shapes
A1043/A1043M	Structural Steel with Low Yield to Tensile Ratio for Use in Buildings
A1066/A1066M	High-Strength Low-Alloy Structural Steel Plate Produced by Thermo-Mechanical Controlled Process (TMCP)
A1077/A1077M	Structural Steel with improved Yield Strength at High Temperature for Use in Buildings

1.2 **Annex A1** lists permitted variations in dimensions and mass (**Note 1**) in SI units. The values listed are not exact conversions of the values in Tables 1 to 31 inclusive but are, instead, rounded or rationalized values. Conformance to **Annex A1** is mandatory when the “M” specification designation is used.

NOTE 1—The term “weight” is used when inch-pound units are the standard; however, under SI, the preferred term is “mass.”

1.3 **Annex A2** lists the dimensions of some shape profiles.

1.4 **Appendix X1** provides information on coil as a source of structural products.

1.5 **Appendix X2** provides information on the variability of tensile properties in plates and structural shapes.

1.6 **Appendix X3** provides information on weldability.

1.7 **Appendix X4** provides information on cold bending of plates, including suggested minimum inside radii for cold bending.

1.8 This general requirements specification also covers a group of supplementary requirements that are applicable to several of the above product specifications as indicated therein. Such requirements are provided for use where additional

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 A01.02 on Structural Steel for Bridges, Buildings, Rolling Stock and Ships.

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² For ASME Boiler and Pressure Vessel Code applications, see related Specification SA-6/SA-6M in Section II of that Code.

³ 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

testing or additional restrictions are required by the purchaser, and apply only where specified individually in the purchase order.

1.9 In case of any conflict in requirements, the requirements of the applicable product specification prevail over those of this general requirements specification.

1.10 Additional requirements that are specified in the purchase order and accepted by the supplier are permitted, provided that such requirements do not negate any of the requirements of this general requirements specification or the applicable product specification.

1.11 For purposes of determining conformance with this general requirements specification and the applicable product specification, values are to be rounded to the nearest unit in the right-hand place of figures used in expressing the limiting values in accordance with the rounding method of Practice E29.

1.12 The text of this general requirements specification contains notes or footnotes, or both, that provide explanatory material. Such notes and footnotes, excluding those in tables and figures, do not contain any mandatory requirements.

1.13 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 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 this specification.

1.14 This general requirements specification and the applicable product specification are expressed in both inch-pound units and SI units; however, unless the order specifies the applicable “M” specification designation (SI units), the structural product is furnished to inch-pound units.

1.15 *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.*

1.16 *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:³

- A36/A36M Specification for Carbon Structural Steel
- A131/A131M Specification for Structural Steel for Ships
- A242/A242M Specification for High-Strength Low-Alloy Structural Steel
- A283/A283M Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- A328/A328M Specification for Steel Sheet Piling
- A370 Test Methods and Definitions for Mechanical Testing of Steel Products

- A514/A514M Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
- A529/A529M Specification for High-Strength Carbon-Manganese Steel of Structural Quality
- A572/A572M Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
- A573/A573M Specification for Structural Carbon Steel Plates
- A588/A588M Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance
- A633/A633M Specification for Normalized High-Strength Low-Alloy Structural Steel Plates
- A656/A656M Specification for Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability
- A673/A673M Specification for Sampling Procedure for Impact Testing of Structural Steel
- A678/A678M Specification for Quenched-and-Tempered Carbon and High-Strength Low-Alloy Structural Steel Plates (Withdrawn 2010)⁴
- A690/A690M Specification for High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments
- A700 Guide for Packaging, Marking, and Loading Methods for Steel Products for Shipment
- A709/A709M Specification for Structural Steel for Bridges
- A710/A710M Specification for Precipitation-Strengthened Low-Carbon Nickel-Copper-Chromium-Molybdenum-Columbium (Niobium) Alloy Structural Steel Plates
- A751 Test Methods and Practices for Chemical Analysis of Steel Products
- A769/A769M Specification for Carbon and High-Strength Electric Resistance Forge-Welded Steel Structural Shapes
- A786/A786M Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
- A808/A808M Specification for High-Strength, Low-Alloy Carbon, Manganese, Columbium, Vanadium Steel of Structural Quality with Improved Notch Toughness (Withdrawn 2005)⁴
- A827/A827M Specification for Plates, Carbon Steel, for Forging and Similar Applications
- A829/A829M Specification for Alloy Structural Steel Plates
- A830/A830M Specification for Plates, Carbon Steel, Structural Quality, Furnished to Chemical Composition Requirements
- A852/A852M Specification for Quenched and Tempered Low-Alloy Structural Steel Plate with 70 ksi [485 MPa] Minimum Yield Strength to 4 in. [100 mm] Thick (Withdrawn 2010)⁴
- A857/A857M Specification for Steel Sheet Piling, Cold Formed, Light Gage

⁴ The last approved version of this historical standard is referenced on www.astm.org.