



~~Designation: A 36/A 36M-05~~ Designation: A36/A36M – 08

## Standard Specification for Carbon Structural Steel<sup>1</sup>

This standard is issued under the fixed designation A36/A36M; 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 Department of Defense.*

### 1. Scope\*

1.1 This specification<sup>2</sup> covers carbon steel shapes, plates, and bars of structural quality for use in riveted, bolted, or welded construction of bridges and buildings, and for general structural purposes.

1.2 Supplementary requirements are provided for use where additional testing or additional restrictions are required by the purchaser. Such requirements apply only when specified in the purchase order.

1.3 When the steel is to be welded, a welding procedure suitable for the grade of steel and intended use or service is to be utilized. See Appendix X3 of Specification ~~A 6/A 6M~~A6/A6M for information on weldability.

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 is to be used independently of the other, without combining values in any way.

1.5 The text of this 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.

1.6 For structural products 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 ~~A 6/A 6M~~A6/A6M apply.

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

Current edition approved March 1, 2005; May 15, 2008. Published March 2005; June 2008. Originally approved in 1960. Last previous edition approved in 2004 as A 36/A 36M-04; A36/A36M – 05. DOI: 10.1520/A0036\_A0036M-08.

<sup>2</sup> For ASME Boiler and Pressure Vessel Code Applications, see related Specifications SA-36 in Section II of that Code.

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

## 2. Referenced Documents

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

- A6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
- A27/A27M Specification for Steel Castings, Carbon, for General Application
- A307 Specification for Carbon Steel Bolts and Studs, 60000-psi/60 000 PSI Tensile Strength
- A325 Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- A325M Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength [Metric](Metric)
- A500 Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A501 Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- A502 Specification for Rivets, Steel, Structural
- A563 Specification for Carbon and Alloy Steel Nuts
- A563M Specification for Carbon and Alloy Steel Nuts [Metric](Metric)
- ~~A1011/A 1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural High-Strength Low-Alloy, and High Strength Low-Alloy with Improved Formability~~
- ~~A668/A 668M/A668M Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use~~
- ~~A1011/A1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength~~
- ~~A1018/A1018M Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength~~
- ~~F568M Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners~~ Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners (Metric)
- F1554 Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

## 3. Appurtenant Materials

3.1 When components of a steel structure are identified with this ASTM designation but the product form is not listed in the scope of this specification, the material shall conform to one of the standards listed in Table 1 unless otherwise specified by the

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<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.

**TABLE 1 Appurtenant Material Specifications**

NOTE 1—The specifier should be satisfied of the suitability of these materials for the intended application. Chemical composition and/or mechanical properties, or both, may be different than specified in A36/A36M.

Material	ASTM Designation
Steel rivets	A 502A 502, Grade 1
Steel rivets	A502, Grade 1
Bolts	A 307A 307, Grade A or F 568M F 568M, Class 4.6
Bolts	A307, Grade A or F568M, Class 4.6
High-strength bolts	A 325A 325 or A 325M A 325M
High-strength bolts	A325 or A325M
Steel nuts	A 563A 563 or A 563M A 563M
Steel nuts	A563 or A563M
Cast steel	A 27A 27/A 27M/A 27M, Grade 65–35 [450–240]
Cast steel	A27/A27M, Grade 65–35 [450–240]
Forgings (carbon steel)	A 668A 668/A 668M, Class D
Forgings (carbon steel)	A668/A668M, Class D
Hot-rolled sheets and strip	A 1011A 1011/A 1011M/A 1011M, SS Grade 36 [250] Type 1 or Type 2 or A1018/A1018M SS Grade 36 [250]
Hot-rolled sheets and strip	A1011/A1011M, SS Grade 36 [250] Type 1 or Type 2 or A1018/A1018M, SS Grade 36 [250]
Cold-formed tubing	A 500A 500, Grade B
Cold-formed tubing	A500, Grade B
Hot-formed tubing	A 501A 501
Hot-formed tubing	A501
Anchor bolts	F 1554
Anchor bolts	F1554, Grade 36