



Designation: A307 – 14^{ε1}

Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength¹

This standard is issued under the fixed designation A307; 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.

^{ε1} NOTE—Section 7.3 was editorially corrected in May 2017.

1. Scope*

1.1 This specification² covers the chemical and mechanical requirements of two grades of carbon steel bolts and studs in sizes ¼ in. through 4 in. The fasteners are designated by “Grade” denoting tensile strength and intended use, as follows:

Grade	Description
Grade A	Bolts, studs, and threaded rod having a minimum tensile strength of 60 ksi and intended for general applications,
Grade B	Bolts, studs, and threaded rod ^A having a tensile strength of 60 to 100 ksi and intended for flanged joints in piping systems with cast iron flanges, and
Grade C	Replaced by Specification F1554 Gr.36

^A Threaded rod is not usually produced to Grade B, but can be when specified by the purchaser.

1.2 This specification does not cover requirements for machine screws, thread cutting/forming screws, mechanical expansion anchors or similar externally threaded fasteners.

1.3 Suitable nuts are covered in Specification **A563**. Unless otherwise specified, the grade and style of nut for each grade of fastener, of all surface finishes, shall be as follows:

Fastener Grade and Size	Nut Grade and Style ^A
A ¼ to 1½ in.	A, hex
A over 1½ to 4 in.	A, heavy hex
B, ¼ to 4 in.	A, heavy hex

¹ This specification is under the jurisdiction of ASTM Committee **F16** on Fasteners and is the direct responsibility of Subcommittee **F16.02** on Steel Bolts, Nuts, Rivets and Washers.

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² For *ASME Boiler and Pressure Vessel Code* applications see related Specification SA-307 in Section II of that Code.

^A Nuts of other grades and styles having specified proof load stresses (Specification **A563**, Table 3) greater than the specified grade and style of nut are also suitable.

1.4 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 Supplementary Requirement S1 of an optional nature is provided, which describes additional restrictions to be applied when bolts are to be welded. It shall apply only when specified in the inquiry, order, and contract.

1.6 Terms used in this specification are defined in Terminology **F1789** unless otherwise defined herein.

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.*

2. Referenced Documents

2.1 ASTM Standards:³

- A563** Specification for Carbon and Alloy Steel Nuts
- A706/A706M** Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
- A751** Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products
- B695** Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
- F606** Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets (Metric) **F0606_F0606M**

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