



Designation: F 1554 – 99

Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength¹

This standard is issued under the fixed designation F 1554; 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 straight and bent, headed and headless, carbon, carbon boron, alloy, or high-strength low-alloy steel anchor bolts (also known as anchor rods). The anchor bolts are furnished in three strength grades, two thread classes, and in the sizes specified in Section 4.

1.2 The anchor bolts are intended for anchoring structural supports to concrete foundations. Such structural supports include building columns, column supports for highway signs, street lighting and traffic signals, steel bearing plates, and similar applications.

1.3 Supplementary requirements are included to provide for Grade 55 weldable steel, permanent manufacturers and grade identification, and impact properties for Grades 55 and 105.

1.4 Zinc coating requirements are included in Section 7 for applications requiring corrosion protection.

1.5 The recommended grade and style of nut and washer are included in 6.6 and 6.7 for each grade.

1.6 This specification does not cover the requirements for mechanical expansion anchors, powder-activated nails or studs, or anchor bolts fabricated from deformed bar.

1.7 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

A 153 Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware²

A 194/A194M Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service³

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products⁴

A 563 Specification for Carbon and Alloy Steel Nuts⁵

A 673/A673M Specification for Sampling Procedure for Impact Testing of Structural Steel⁶

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products⁴

B 695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel⁷

D 3951 Practice for Commercial Packaging⁸

F 436 Specification for Hardened Steel Washers⁵

F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets⁵

2.2 *Research Council on Structural Connections Standard*:⁹

Specification for Structural Joints Using ASTM A325 or A490 Bolts

2.3 *ANSI/ASME Standards*:¹⁰

B 1.1 Unified Screw Threads

B 1.3 Screw Thread Gaging Systems for Dimensional Acceptability

B 18.2.2 Square and Hex Nuts

B 18.18.2M Inspection and Quality Assurance for High Volume Machine Assembly Fasteners

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *anchor bolt*—a steel rod or bar, one end of which is intended to be cast in concrete, while the opposite end is threaded and projects from the concrete, for anchoring other material to the concrete. The end cast in concrete may be either straight or provided with an anchor such as a bent hook, forged head, or a tapped or welded attachment to resist forces imposed on the anchor bolt, as required.

¹ This specification is under the jurisdiction of ASTM Committee F-16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets, and Washers.

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² *Annual Book of ASTM Standards*, Vol 01.06.

³ *Annual Book of ASTM Standards*, Vol 01.01.

⁴ *Annual Book of ASTM Standards*, Vol 01.03.

⁵ *Annual Book of ASTM Standards*, Vol 01.08.

⁶ *Annual Book of ASTM Standards*, Vol 01.04.

⁷ *Annual Book of ASTM Standards*, Vol 02.05.

⁸ *Annual Book of ASTM Standards*, Vol 15.09.

⁹ Available from Research Council on Structural Connections, c/o Industrial Fasteners Institute, 1717 East 9th Street, Cleveland, OH 44114.

¹⁰ Available from American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

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

