Designation: F1554 – 15$^{\varepsilon 1}$

Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength[1]

This standard is issued under the fixed designation F1554; 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.

ε[1] NOTE—Editorial corrections were made to Table 1, Table 2, and 6.7.1 in April 2016.

1. Scope*

1.1 This specification covers straight, bent, headed, and headless anchor bolts (also known as anchor rods) made of carbon, medium carbon boron, alloy, or high-strength low-alloy steel. It provides for anchor bolts in three strength grades, two thread classes, and in the diameters specified in Section 4. The specification also covers all-thread rod for use in anchoring to concrete. References to anchor bolts in this standard do not necessarily exclude all-thread rod.

1.2 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 in Section 7.

1.5 Suitable nuts and washers are listed in 6.7. Washers are detailed in 6.8.

1.6 This specification does not cover 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:*[2]

A6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

A194/A194M Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A563 Specification for Carbon and Alloy Steel Nuts

A673/A673M Specification for Sampling Procedure for Impact Testing of Structural Steel

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

B695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel

F436 Specification for Hardened Steel Washers

F606/F606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets

F1789 Terminology for F16 Mechanical Fasteners

F2329/F2329M Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

2.2 *American Institute of Steel Construction:*[3]

Design Guide 1: Base Plate and Anchor Rod Design

2.3 *ASME Standards:*[4]

B 1.1 Unified Inch Screw Threads (UN and UNR Thread Form)

B 1.3 Screw Thread Gaging Systems for Acceptability: Inch and Metric Screw Threads (UN, UNR, UNJ, M MJ)

B18.2.1 Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series)

B 18.2.2 Square and Hex Nuts

B 18.18 Quality Assurance for Fasteners

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

[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 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] American Institute of Steel Construction, One East Wacker Drive, Suite 700, Chicago, IL 60601

[4] Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, http://www.asme.org.

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

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