



Designation: A 563 – 00

Standard Specification for Carbon and Alloy Steel Nuts¹

This standard is issued under the fixed designation A 563; 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 Department of Defense.

1. Scope*

1.1 This specification² covers chemical and mechanical requirements for eight grades of carbon and alloy steel nuts for general structural and mechanical uses on bolts, studs, and other externally threaded parts.

NOTE 1—See Appendix X1 for guidance on suitable application of nut grades.

1.2 The requirements for any grade of nut may, at the supplier's option, and with notice to the purchaser, be fulfilled by furnishing nuts of one of the stronger grades specified herein unless such substitution is barred in the inquiry and purchase order.

1.3 Grades C3 and DH3 nuts have atmospheric corrosion resistance and weathering characteristics comparable to that of the steels covered in Specifications A 242/A 242M, A 588/A 588M, and A 709/A 709M. The atmospheric corrosion resistance of these steels is substantially better than that of carbon steel with or without copper addition (see 5.2). When properly exposed to the atmosphere, these steels can be used bare (uncoated) for many applications.

NOTE 2—A complete metric companion to Specification A 563 has been developed—A 563M; therefore, no metric equivalents are presented in this specification.

2. Referenced Documents

2.1 ASTM Standards:

A 153 Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware³

A 194/A194M Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service⁴

A 242/A 242M Specification for High-Strength Low-Alloy Structural Steel⁵

A 307 Specification for Carbon Steel Bolts and Studs, 60 000 psi Tensile Strength⁶

A 325 Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength⁶

A 354 Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners⁶

A 394 Specification for Steel Transmission Tower Bolts, Zinc-Coated and Bare⁶

A 449 Specification for Quenched and Tempered Steel Bolts and Studs⁶

A 490 Specification for Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength⁶

A 588/A 588M Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 in. (100 mm) Thick⁵

A 687 Specification for High-Strength Nonheaded Steel Bolts and Studs⁶

A 709/A 709M Specification for Carbon and High-Strength Low-Alloy Structural Steel Shapes, Plates and Bars and Quenched and Tempered Alloy Structural Steel Plates for Bridges⁵

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products⁷

B 695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel⁸

D 3951 Practice for Commercial Packaging⁹

F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets⁶

F 812/F 812M Specification for Surface Discontinuities of Nuts, Inch and Metric Series⁶

G 101 Guide for Estimating the Atmospheric Corrosion Resistance of Low Alloy Steels¹⁰

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.

Current edition approved Jan. 10, 2000. Published March 2000. Originally published as A 563 – 66. Last previous edition A 563 – 97.

² For ASME Boiler and Pressure Vessel Code applications see related Specification SA – 563 in Section II of that Code.

³ Annual Book of ASTM Standards, Vol 01.06.

⁴ Annual Book of ASTM Standards, Vol 01.01.

⁵ Annual Book of ASTM Standards, Vol 01.04.

⁶ Annual Book of ASTM Standards, Vol 01.08.

⁷ Annual Book of ASTM Standards, Vol 01.03.

⁸ Annual Book of ASTM Standards, Vol 02.05.

⁹ Annual Book of ASTM Standards, Vol 15.09.

¹⁰ Annual Book of ASTM Standards, Vol 03.02.

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