



Designation: F 594 – 98^{€1}

Standard Specification for Stainless Steel Nuts¹

This standard is issued under the fixed designation F 594; 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 (€) 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 NOTE—Table 1 was editorially corrected in October 2001.

1. Scope

1.1 This specification covers the requirements for stainless steel nuts 0.25 to 1.50 in. in nominal diameter inclusive in a number of alloys in common use and intended for service applications requiring general corrosion resistance.

1.2 Seven groups of stainless steel alloys are covered, including ten austenitic, two ferritic, four martensitic, and one precipitation hardening.

Group	Alloys ^A	Condition ^B
1	304, 305, 304L 384, XM7 ^C	(CW) cold worked ^D
2	316, 316L	(CW) cold worked ^D
3	321, 347	(CW) cold worked ^D
4	430 ^E	(CW) cold worked ^D
5	410 ^F	(H) hardened and tempered
6	431	(H) hardened and tempered
7	630	(AH) aged hardened

^AUnless otherwise specified on the inquiry and order, the choice of an alloy from within a group shall be at the discretion of the fastener manufacturer (see 6.1).

^BSee 4.2 for options.

^CWhen approved by the purchaser, alloys 303, 303Se, or XM1 may be furnished.

^DSizes 0.75 in. and larger may be hot worked and solution annealed.

^EWhen approved by the purchaser, alloy 430F may be furnished.

^FWhen approved by the purchaser, alloy 416 or 416Se may be furnished.

1.3 Supplementary requirements of an optional nature are provided, applicable only when agreed upon by the manufacturer and the purchaser at the time of the inquiry and order.

1.4 Suitable bolts, hex cap screws, and studs for use with nuts included in this specification are covered by Specification F 593. Unless otherwise specified, all bolts, hex cap screws, and studs used with these nuts shall conform to the requirements of Specification F 593 and shall be of the same alloy group.

2. Referenced Documents

2.1 ASTM Standards:

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels²

A 276 Specification for Stainless Steel Bars and Shapes²
A 342 Test Methods for Permeability of Feebly Magnetic Materials³
A 380 Practice for Cleaning and Descaling Stainless Steel Parts, Equipment, and Systems²
A 484 Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings²
A 493 Specification for Stainless and Heat-Resisting Steel for Cold Heading and Cold Forging Wire²
A 555/A 555M Specification for General Requirements for Stainless and Heat-Resisting Steel Wire and Wire Rods²
A 564/A 564M Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless and Heat-Resisting Steel Bars, Wire, and Shapes²
A 571 Specification for Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service⁴
A 582/A 582M Specification for Free-Machining Stainless Steel Bars²
A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²
D 3951 Practice for Commercial Packaging⁵
E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁶
E 353 Test Methods for Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys⁷
F 593 Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs⁸
F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets⁸
F 1470 Guide for Fastener Sampling for Specified Mechanical Properties and Performance Inspection⁸
2.2 ANSI/ASME Standards:⁹

¹ This specification is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.04 on Nonferrous Fasteners.

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² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 03.04.

⁴ Annual Book of ASTM Standards, Vol 01.02.

⁵ Annual Book of ASTM Standards, Vol 15.09.

⁶ Annual Book of ASTM Standards, Vol 14.02.

⁷ Annual Book of ASTM Standards, Vol 03.05.

⁸ Annual Book of ASTM Standards, Vol 01.08.

⁹ Available from American National Standards Institute, 25 W. 43rd St., 4th Floor, New York, NY 10036.