



Standard Specification for Stainless Steel Metric Bolts, Screws, and Studs¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers the chemical and mechanical requirements for stainless steel metric bolts, screws, and studs with nominal thread diameters M1.6 through M36 and is intended for use in engineering applications requiring general corrosion resistance.

1.2 Eight groups of stainless steel alloys are covered, including three austenitic (Grades A1, A2, and A4), one ferritic (Grade F1), three martensitic (Grades C1, C3, and C4), and one precipitation hardening (Grade P1).

1.3 Twenty property classes are covered, including nine austenitic, two ferritic, eight martensitic, and one precipitation hardening. The property classes with the permissible alloys for each are listed in Table 1.

1.4 This specification is based in concept and content on ISO 3506. The chemical and mechanical requirements specified for all property classes, except as given in 1.4.1, are essentially identical with classes of the same designation in ISO 3506.

1.4.1 This specification includes all of the property classes covered in ISO 3506. Additionally, it includes property classes A1-70, A2-70, A4-70, A1-80, A2-80, and A4-80 for products with nominal thread diameters larger than M20; and four non-ISO property classes, C1-110, C4-110, C3-120; and P1-90.

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

1.6 Suitable nuts for use with bolts, screws, and studs included in this specification are covered by Specification F 836M.

1.7 The following safety hazards caveat pertains only to the test method described in this specification. *This standard does not purport to address the safety problems associated with*

its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:

- A 276 Specification for Stainless Steel Bars and Shapes²
- A 342/A 342M Test Methods for Permeability of Feebly Magnetic Materials³
- A 380 Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems²
- A 484/A 484M Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings²
- A 493 Specification for Stainless Steel Wire and Wire Rods for Cold Heading and Cold Forging²
- A 555/A 555M Specification for General Requirements for Stainless Steel Wire and Wire Rods²
- A 564/A 564M Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes³
- A 582/A 582M Specification for Free-Machining Stainless Steel Bars³
- A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²
- D 3951 Practice for Commercial Packaging⁴
- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵
- E 353 Test Methods for Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys⁶
- F 606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets [Metric]⁷
- F 836M Specification for Style 1 Stainless Steel Metric Nuts⁷

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 15.09.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Annual Book of ASTM Standards, Vol 03.05.

⁷ Annual Book of ASTM Standards, Vol 01.08.