



Designation: F 880 – 98

Standard Specification for Stainless Steel Socket-Set Screws¹

This standard is issued under the fixed designation F 880; 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 specification covers the requirements for austenitic grade stainless steel socket-set screws (SSS), sizes 0.060 through 0.500 in. in two conditions, AF and CW.

1.2 The following hazards caveat pertains only to Test Method Section, Section 12 of this specification. *This standard does not purport to address (all of) 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.*

NOTE 1—A complete metric companion to Specification F 880 has been developed—F 880M; therefore, no metric equivalents are shown in this specification.

2. Referenced Documents

2.1 ASTM Standards:

- A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels²
- A 342 Test Methods for Permeability of Feebly Magnetic Materials³
- A 380 Practice for Cleaning and Descaling Stainless Steel Parts, Equipment, and Systems²
- A 555/A555M Specification for General Requirements for Stainless and Heat-Resisting Steel Wire and Wire Rods²
- A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²
- A 967 Specification for Chemical Passivation Treatments for Stainless Steel Parts²
- D 3951 Practice for Commercial Packaging⁴
- E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials⁵
- E 353 Test Methods for Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys⁶

¹ This specification is under the jurisdiction of ASTM Committee F-16 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 03.01.

⁶ Annual Book of ASTM Standards, Vol 03.05.

F 593 Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs⁷

F 788/F788M Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series⁷

F 1470 Guide for Fastener Sampling for Specific Mechanical Properties and Performance Inspection⁷

2.2 ANSI/ASME Standard:⁸

B 18.3 Socket Cap, Shoulder and Set Screws, Inch Series

3. Classification

3.1 The designation of the alloy group and condition for the two materials and conditions of this specification shall be consistent with the stainless steel designations in Specification F 593.

3.2 The austenitic stainless steel socket set screw shall be designated F 880 Group 1 Condition AF (solution annealed) or F 880 Group 1 Condition CW (cold worked).

4. Ordering Information

4.1 Orders for material under this specification shall include the following information:

4.1.1 Quantity (number of screws).

4.1.2 Dimensions, including nominal thread designation, thread pitch, nominal screw length (inches) and point configuration. A standard part number may be used for this definition.

4.1.3 Name of the screw (SSS).

4.1.4 Condition AF/CW.

4.1.5 Surface finish, if required. If a finish other than passivation is required, it must be specified on the order or product standard.

4.1.6 ASTM specification and year of issue.

4.1.7 Any special or supplemental requirements.

4.2 *Example*—50 000 pieces 0.250-20 × 0.375 cone point SSS CW ASTM F 880-86.

5. Materials and Manufacture

5.1 The screw may be forged, formed, extruded, machined, or ground to meet the dimensional characteristics and performance requirements.

5.2 *Heat Treatment*—Austenitic alloys Group 1 Condition AF screw shall be annealed by heating to 1900 ± 50°F to

⁷ Annual Book of ASTM Standards, Vol 01.08.

⁸ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.