Designation: F 837M – 02a

METRIC

Standard Specification for Stainless Steel Socket Head Cap Screws [Metric][1]

This standard is issued under the fixed designation F 837M; 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 chemical and mechanical requirements for stainless steel metric socket head cap screws (SHCS) with nominal thread M1.6 through M36 and intended for use in applications requiring general corrosion resistance.

1.2 Two groups of stainless steel alloys are covered, austenitic Grade A1 and martensitic Grade C1.

1.3 Four property classes are covered: austenitic A1-50 in an annealed condition at 585 MPa maximum; austenitic A1–55 in a cold worked condition at 550 MPa minimum; austenitic A1-70 in a cold worked condition at 700 MPa minimum, and martensitic C1-110 in a heat treated condition at 1100 MPa minimum.

1.4 This hazard statement pertains only to Section 13, Test Methods: *This standard does not purport to address all of the safety concerns, if any, 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 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels[2]

A 342 Test Methods for Permeability of Feebly Magnetic Materials[3]

A 380 Practices for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems[2]

A 555/A555M Specification for General Requirements for Stainless Steel Wire and Wire Rods[2]

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products[2]

A 967 Specification for Chemical Passivation Treatments for Stainless Steel Parts[2]

D 3951 Practice for Commercial Packaging[4]

E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials[5]

E 92 Test Method for Vickers Hardness of Metallic Materials[5]

E 384 Test Method for Microhardness of Materials[5]

F 606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets [Metric][6]

F 738M Specification for Stainless Steel Metric Bolts, Screws, and Studs[6]

F 788/F788M Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series[6]

F 1470 Guide for Fastener Sampling for Specified Mechanical Properties and Performance Inspection[6]

2.2 *ASME Standard:*

ASME B 18.3.1M Socket Head Cap Screws (Metric Series)[7]

3. Classification

3.1 The designation of the property class for the two materials and conditions of this specification shall be consistent with the stainless steel designations in Specification F 738M.

3.2 The austenitic stainless steel socket head cap screw shall be designated F837M A1-50, F837M A1-55, or F 837M A1-70.

3.3 The martensitic stainless steel socket head cap screw shall be designated F837M C1-110.

4. Ordering Information

4.1 Orders for socket head cap screws under this specification shall include:

4.1.1 Quantity (number of pieces of each item),

[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 03.01.

[6] *Annual Book of ASTM Standards,* Vol 01.08.

[7] Available from Global Engineering Documents, 15 Inverness Way, Englewood, CO 80112.

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