



Designation: A 574M – 00

METRIC

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

This standard is issued under the fixed designation A 574M; 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 quenched and tempered alloy steel socket-head cap screws 1.6 mm through 48 mm in diameter having a minimum ultimate tensile strength of 1220 MPa.

NOTE 1—This specification is the metric companion of Specification A 574.

1.2 The following hazard caveat pertains only to the test method portion, Section 10, of this specification: *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 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²
- D 3951 Practice for Commercial Packaging³
- E 3 Methods of Preparation of Metallographic Specimens⁴
- E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials⁴
- E 112 Test Methods for Determining the Average Grain Size⁴
- E 384 Test Method for Microhardness of Materials⁴
- F 606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets [Metric]⁵
- F 788/F788M Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series⁵

2.2 ANSI/ASME Standards:

- B18.3.1M Metric Socket Head Cap Screws⁶
- B18.24.1 Part Identifying Number (PIN) Code System⁷

3. Ordering Information

3.1 Orders for socket head cap screws under this specification shall include the following information:

- 3.1.1 Quantity (number of screws),
- 3.1.2 Dimensions, including nominal thread designation, thread, pitch, and nominal screw length (millimetres),
- 3.1.3 Name of the screw (SHCS),
- 3.1.4 ASTM designation and year of issue.

3.2 Orders for socket head cap screws may include the following optional requirements:

- 3.2.1 Inspection at point of manufacture.
- 3.2.2 Coating, if required (see 4.6).
- 3.2.3 Certified Test Reports (see 9.2).
- 3.2.4 Additional Testing (see 9.3 and 11.1).
- 3.2.5 Special Packaging (see 14.1.2).
- 3.2.6 Supplementary Requirement (see S1).
- 3.2.7 Special Requirements.
- 3.2.8 For establishment of a part identifying system, see ASME B18.24.1.

4. Materials and Manufacture

4.1 The screws shall be fabricated from steel made to fine grain practice. In the event of controversy over grain size, referee tests on finished screws conducted in accordance with Test Method E 112 shall prevail.

4.2 Screws in sizes up to M20 inclusive, and with lengths up to 10 times the nominal product size or 150 mm, whichever is shorter, shall be cold headed, except that they may be hot headed by agreement of the purchaser. Larger sizes and longer lengths may be cold or hot headed. Screws M42 and larger may be machined. Sockets may be forged or machined at the option of the manufacturer.

¹ This specification is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets, and Washers.

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² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 15.09.

⁴ Annual Book of ASTM Standards, Vol 03.01.

⁵ Annual Book of ASTM Standards, Vol 01.08.

⁶ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁷ Available from American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016–5990.

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