



Designation: A 574 – 00

Standard Specification for Alloy Steel Socket-Head Cap Screws¹

This standard is issued under the fixed designation A 574; 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 specification² covers the requirements for quenched and tempered alloy steel hexagon socket-head cap screws, 0.060 through 4 in. in diameter where high strength is required.

NOTE 1—A complete metric companion to Specification A 574 has been developed—A 574M; therefore no metric equivalents are presented in this specification.

1.2 The following hazard caveat pertains only to the test method portion, Section 12, 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 Products³

D 3951 Practice for Commercial Packaging⁴

E 3 Methods of Preparation of Metallographic Specimens⁵

E 112 Test Methods for Determining the Average Grain Size⁵

E 384 Test Method for Microhardness of Materials⁵

F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets⁶

F 788/F 788M Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series⁶

2.2 ANSI/ASME Standards:

B1.1 Unified Screw Threads⁷

B18.3 Socket Cap, Shoulder, and Set Screws⁷

B18.24.1 Part Identifying Number (PIN) Code System⁸

2.3 Federal Standard:

H-28 Handbook of Thread Dimensions⁹

3. Terminology

3.1 Definitions:

3.1.1 Definitions of discontinuities covered by 10.2 follow:

3.1.2 *crack*—a clean crystalline break passing through the grain or grain boundary without inclusion of foreign elements.

3.1.3 *inclusions*—particles of nonmetallic impurities, usually oxides, sulfides, silicates, and such, which are mechanically held in the steel during solidification.

3.1.4 *nicks or pits*—depressions or indentations in the surface of the metal.

3.1.5 *seam or lap*—a noncrystalline break through the metal which is inherently in the raw material.

4. Ordering Information

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

4.1.1 ASTM designation and year of issue.

4.1.2 Quantities (number of pieces by size).

4.1.3 Size and length.

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

4.2.1 Inspection at point of manufacture.

4.2.2 Coating, if a protective finish other than black oxide (thermal or chemical) is required, it must be specified.

4.2.3 Certified test reports (see 11.2).

4.2.4 Additional testing (see 11.3).

4.2.5 Special packaging (see 16.1.2).

4.2.6 Supplementary requirements (see S1).

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 For ASME Boiler and Pressure Vessel Code applications see related Specification SA-574 in Section II of that code.

³ Annual Book of ASTM Standards, Vol 01.03.

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

⁸ Available from American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016–5990.

⁹ Available from General Services Administration, Specification and Consumer Information Distribution Branch, Bldg. 197, Washington Navy Yard, Washington, DC 20407.

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