



Designation: C 1002 – 00

Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs¹

This standard is issued under the fixed designation C 1002; 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 steel self-piercing tapping screws for use in fastening gypsum panel products and metal plaster bases to cold-formed steel studs less than 0.033 in. (0.84 mm) in thickness and wood members and for fastening gypsum panel products to gypsum board.

1.2 This specification also covers test methods for determining performance requirements and physical properties.

1.3 The values stated in inch-pound units are to be regarded as the standard. The SI (metric) values given in parentheses are approximate and are for information only.

1.4 The following safety hazards caveat pertains only to the test methods described in 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 548 Specification for Steel Wire, Carbon, Cold-Heading Quality for Tapping or Sheet Metal Screws²

C 11 Terminology Relating to Gypsum and Related Building Materials and Products³

C 36 Specification for Gypsum Wallboard³

C 645 Specification for Nonstructural Steel Framing Members³

C 847 Specification for Metal Lath³

3. Terminology

3.1 **Definitions:** For definitions relating to gypsum and related building materials and systems, see Terminology C 11.

3.2 **Definitions of Terms Specific to This Standard:**

¹ This specification is under the jurisdiction of ASTM Committee C11 on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee C11.02 on Specifications and Test Methods for Accessories and Related Products.

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² Discontinued; see 1990 Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 04.01.

3.2.1 *self-piercing*, *v*—the ability to penetrate without benefit of a pre-drilled hole with sharp-point angles of not more than 30°.

3.2.2 *spin-out*, *v*—for a screw, the continued rotation of a screw without further penetration into the substrate.

4. Classification

4.1 Steel screws covered by this specification are of four types of thread configurations:

4.1.1 *Type G*, course-pitch high-thread self-piercing screws for fastening gypsum board to gypsum board.

4.1.2 *Type S*, fine-thread screw for fastening gypsum board to cold formed steel members.

4.1.3 *Type W*, course-thread screw for fastening gypsum board to wood members.

4.1.4 *Type A*, course-pitch tapping screw thread for fastening metal plaster bases to wood or cold-formed steel.

5. Materials

5.1 *Steel Wire*, for manufacturing screws, Specification A 548, Grades 1013 to 1022.

6. Physical Properties

6.1 Hardness:

6.1.1 The surface of Type S, Type W, and Type A screws shall be case hardened to a depth of not less than 0.002 in. (0.05 mm) with case hardness not less than 45 HRC.

6.1.2 The surface of Type G screws is not required to be case hardened.

6.2 *Ductility*—The screws shall have sufficient ductility to be able to withstand a 15° bend without visible signs of fracture when tested as specified in 12.6.6.

7. Performance Requirements

7.1 *Type G* Screws:

7.1.1 Screws shall be able to self-pierce and drive into gypsum panel products.

7.1.2 Screw threads shall be adequate to pull the head of the screw below the surface of the gypsum panel product when tested as specified in 12.6.2.

7.2 *Type S* Screws:

7.2.1 *General*—Screws shall be able to self-pierce and drive

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