



Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections¹

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1. Scope*

1.1 This specification covers steel self-drilling and self-piercing tapping screws for the connection of cold-formed steel members manufactured in accordance with Specifications **C645** and **C955**. This specification also covers test methods for determining performance requirements and physical properties.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- A370** Test Methods and Definitions for Mechanical Testing of Steel Products
- A510** Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel
- B117** Practice for Operating Salt Spray (Fog) Apparatus
- C11** Terminology Relating to Gypsum and Related Building Materials and Systems
- C645** Specification for Nonstructural Steel Framing Members
- C955** Specification for Load-Bearing (Transverse and Axial)

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 For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases

F1470 Practice for Fastener Sampling for Specified Mechanical Properties and Performance Inspection

F1941 Specification for Electrodeposited Coatings on Threaded Fasteners (Unified Inch Screw Threads (UN/UNR))

2.2 ANSI/ASME Documents:

ANSI/ASME B18.6.4 Standard Specification for Thread Forming and Thread-Cutting Screws³

ANSI/ASME B18.18 Quality Assurance for Fasteners³

2.3 SAE Standards:

SAE J78 Steel Self-Drilling Tapping Screws⁴

SAE J933 Mechanical and Quality Requirements for Tapping Screws⁴

3. Terminology

3.1 *Definitions*—For definitions relating to gypsum and related building materials and systems, use Terminology **C11**.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *bearing surface (of the screw)*, *n*—the supporting or locating surface of a fastener with respect to the part which it fastens (mates). The loading of the fastener is usually through the bearing surface, (that is, the bearing surface of the hex washer head style is under the head, the part that touches the top material being fastened).

3.2.2 *case depth (of the screw)*, *n*—the thickness of the hardened surface of the screw.

3.2.3 *countersunk head style (for a screw)*, *n*—all screw head designs that sink into the top material being fastened and that have the bearing surface (see 3.2.1), at the top of the head (that is, flat and bugle).

3.2.4 *crest (of the screw thread)*, *n*—the highest point of the screw thread.

³ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

⁴ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.

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