



Designation: F1505 – 16

Standard Specification for Insulated and Insulating Hand Tools¹

This standard is issued under the fixed designation F1505; 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.

1. Scope*

1.1 This specification covers the testing of insulated and insulating hand tools used for working on, or in close proximity to, energized electrical apparatus or conductors operating at maximum voltage of 1000 V ac or 1500 V dc.

1.2 The specific use of these tools is beyond the scope of this specification.

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

1.4 The following precautionary caveat pertains to the test method portion only, Section 7, 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.*

1.5 This specification does not purport to address all of the safety problems associated with the use of tools on, or in close proximity to, energized electrical apparatus.

2. Referenced Documents

2.1 ASTM Standards:²

D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

D618 Practice for Conditioning Plastics for Testing

D5025 Specification for Laboratory Burner Used for Small-Scale Burning Tests on Plastic Materials

D5207 Practice for Confirmation of 20-mm (50-W) and 125-mm (500-W) Test Flames for Small-Scale Burning Tests on Plastic Materials

2.2 ASME/ANSI Standards:³

ASME B18.3-2002 Socket Cap, Shoulder, Set Screws, Hex and Spline Keys

ASME B107 Series of Standards for Hand Tools and Accessories

2.3 IEC Standard:⁴

IEC 60900:2012 (Ed. 3) Live Working – Hand tools for use up to 1000 V ac and 1500 V dc

IEC 61318:2007 (Ed. 3) Live Working – Conformity assessment applicable to tools, devices and equipment

2.4 ISO Standards:⁵

ISO 1174-1:1996 Assembly tools for screws and nuts—Driving Squares—Part 1: Driving squares for hand socket tools

ISO 5744:2004 Pliers and nippers—Methods of test

2.5 Federal Specification:⁶

GGG-R-791H (19 July 1994) Rules, Measuring

3. Terminology

3.1 Definitions:

3.1.1 *insulated hand tools, n*—those covered with insulating material in order to protect the user from electric shock and to minimize the risk of short circuits between parts at different potentials.

3.1.2 *insulating hand tools, n*—those made predominantly of insulating material, except for metal inserts at the working head or active part or used for reinforcement but with no exposed metal parts. In either case, to protect the user from electric shocks, as well as, to prevent short-circuits between exposed parts at different potentials.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *acceptance test, n*—a contractual test to prove to the customer that the device meets certain conditions of its specification.

¹ This specification is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.35 on Tools & Equipment.

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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.

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 Institute of Electrical and Electronics Engineers, Inc. (IEEE), 445 Hoes Ln., P.O. Box 1331, Piscataway, NJ 08854-1331, <http://www.ieee.org>.

⁵ Available from International Organization for Standardization (ISO), 1 rue de Varembe, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.

⁶ Available from DoD ASSIST-Quick Search, DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, <http://quicksearch.dla.mil>.

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