



Designation: D 2307 – 9501

An American National Standard

Standard Test Method for Thermal Endurance of Film-Insulated Round Magnet Wire¹

This standard is issued under the fixed designation D 2307; 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 test method covers determination of the thermal endurance of film-insulated round magnet wire in air at atmospheric pressure. It is not applicable to magnet wire with fibrous insulation, such as cotton or glass.

NOTE 1—Other solid conductors such as coated resistance wire may be evaluated by this test method.

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

1.3 This test method covers the evaluation of thermal endurance by observing changes in response to ac proof voltage tests. The evaluation of thermal endurance by observing changes in other properties of magnet wire insulation requires the use of different test methods.

1.4 Exposure of some types of film insulated wire to heat in gaseous or liquid environments in the absence of air may give thermal endurance values different from those obtained in air. This fact should be considered when interpreting the results obtained by heating in air with respect to applications where the wire will not be exposed to air in service.

1.5 Electric stress applied for extended periods at a level exceeding or even approaching the discharge inception voltage may change significantly the thermal endurance of film insulated wires, varnished or unvarnished. Under such electric stress conditions, comparisons between materials may also differ from those developed using this method.

1.6 *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 consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 115 Test Methods for Varnishes Used for Electrical Insulation²

¹ This test method is under the jurisdiction of ASTM Committee D-9 D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.10 on Magnet Wire Insulation. Originally published as D 2307 – 64T. Last previous edition D 2307 – 78, Insulation.

Current edition approved Sept. 10, 1995; 2001. Published November 1995; 2001. Originally published as D 2307 – 684T. Last previous edition D 2307 – 945.