



Designation: A 932/A932M – 9501

An American National Standard

Standard Test Method for Alternating-Current Magnetic Properties of Amorphous Materials at Power Frequencies Using Wattmeter-Ammeter- Voltmeter Method with Sheet Specimens¹

This standard is issued under the fixed designation A 932/A932M; 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 tests for various magnetic properties of flat-cast amorphous magnetic materials at power frequencies (50 and 60 Hz) using sheet-type specimens in a yoke-type test fixture. It provides for testing using either single- or multiple-layer specimens.

NOTE 1—This test method has been applied only at frequencies of 50 and 60 Hz, but with proper instrumentation and application of the principles of testing and calibration embodied in the test method, it is believed to be adaptable to testing at frequencies ranging from 25 to 400 Hz.

1.2 This test method provides a test for specific core loss, specific exciting power and ac peak permeability at moderate and high flux densities, but is restricted to very soft magnetic materials with dc coercivities of 0.07 Oe [5.57 A/m] or less.

1.3 The test method also provides procedures for calculating ac peak permeability from measured peak values of total exciting currents at magnetic field strengths up to about 2 Oe [159 A/m].

1.4 Explanation of symbols and abbreviated definitions appear in the text of this test method. The official symbols and definitions are listed in Terminology A 340.

1.5 This test method shall be used in conjunction with Practice A 34/A 34M.

1.6 The values stated in either customary units (practical cgs & cgs-emu and inch-pound) or SI units are to be regarded separately as standard. ~~Separate derivations are included for each of the unit systems. However, within the general text, Within this standard, SI units are shown in brackets. The values stated in each system are may not be exact equivalents: therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the test method; this standard.~~

1.7 *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:*

¹ This test method is under the jurisdiction of ASTM Committee A-6 A06 on Magnetic Properties and is the direct responsibility of Subcommittee A06.01 on Test Methods. Current edition approved Nov. 10, 1995; 2001. Published January 1996. December 2001. Originally published as A 932/A 932M –95. Last previous edition A 932/A 932M –95.