Designation: A664 – 06$^{\varepsilon 1}$

Standard Practice for Identification of Standard Electrical Steel Grades in ASTM Specifications[1]

This standard is issued under the fixed designation A664; 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.

ε^1 NOTE—The values statement (1.3) was corrected editorially in September 2006.

1. Scope

1.1 This practice covers the procedure for designating (within ASTM specifications) standard grades of flat-rolled electrical steels made to specified maximum values of core loss. This practice applies to magnetically soft irons and steel (low-carbon steels and alloys of iron with silicon, aluminum, and so forth) where a core loss measurement at a stated peak value of alternating induction and a stated frequency, such as 15 kG (1.5 T) and 60 Hz, is normally used to grade the material. This practice also applies when some other property is specified (or a different induction or frequency, or both) as the limiting characteristic, provided the material also meets all the requirements of the ASTM specification.

1.2 Individual specifications that are in conformity with this practice are Specifications A677, A683, A726, A840/A840M, and A876.

1.3 The values stated in customary (cgs-emu and inch-pound) units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units which are provided for information only and are not considered standard.

1.4 *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:*[2]

A340 Terminology of Symbols and Definitions Relating to Magnetic Testing

A677 Specification for Nonoriented Electrical Steel Fully Processed Types

A683 Specification for Nonoriented Electrical Steel, Semi-processed Types

A726 Specification for Cold-Rolled Magnetic Lamination Quality Steel, Semiprocessed Types

A840/A840M Specification for Fully Processed Magnetic Lamination Steel

A876 Specification for Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types

A976 Classification of Insulating Coatings for Electrical Steels by Composition, Relative Insulating Ability and Application

3. Terminology

3.1 The terms and symbols used in this practice are defined in Terminology A340.

4. Procedure

4.1 *General Requirements of the Core-Loss-Type Designations*—The core-loss-type designations to be used for ordering purposes and for identification of the shipped material in ASTM specifications for electrical steels shall be a six-character identification (for example, 36F145) comprised of the following basic elements:

4.1.1 *First Two Digits*—The first two digits of the grade designation shall represent the nominal decimal thickness of the material in millimetres. For instance, the number 36 represents a thickness of 0.36 mm or 0.014 in. Refer to Appendix X1 for the relationship between Electrical Sheet Gauge Number and thickness.

4.1.2 *Code Letters*—A code letter shall designate the general category of magnetic material and the standard sampling and testing practices that apply. The precise conditions of sampling and testing are given in the ASTM specification covering each class of material. The code letter to be used and

[1] This practice is under the jurisdiction of ASTM Committee A06 on Magnetic Properties and is the direct responsibility of Subcommittee A06.02 on Material Specifications.

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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.