IEC 60401-1

Edition 2.0 2020-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Terms and nomenclature for cores made of magnetically soft ferrites – Part 1: Terms used for physical irregularities and reference of dimensions

Termes et nomenclature pour noyaux en matériaux ferrites magnétiquement doux – Partie 1: Termes utilisés pour les irrégularités physiques et références dimensionnelles

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TERMS AND NOMENCLATURE FOR CORES MADE OF MAGNETICALLY SOFT FERRITES –

Part 1: Terms used for physical irregularities and reference of dimensions

FOREWORD

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International Standard IEC 60401-1 has been prepared by IEC technical committee 51: Magnetic components, ferrite and magnetic powder materials.

This second edition cancels and replaces the first edition of IEC 60401-1 published in 2002 and the second edition of IEC 60401-2 published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous editions of IEC 60401-1 and IEC 60401-2:

a) added the surface irregularity term "pores" in 4.3.1.6;
b) added the surface irregularity term "scratch" in 4.3.6.3;
c) removed the surface irregularity term "crater" in 4.1.5 of IEC 60401-1: 2002;

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d) removed the bulk irregularity terms “superpores” in 5.1, “inclusions” in 5.2, “internal stratification” in 5.3 and “internal crack” in 5.4 of IEC 60401-1: 2002;

e) removed the contents related to “yoke ring cores” in 7.1.3 and 7.4 of IEC 60401-1:2002;

f) replaced the surface irregularity term “stratification” with “lamination” in 4.3.4.7;

g) replaced the location related terms “upper surface of back” with “bottom surface” and “lower surface of back” with “back surface” in Figure A.1;

h) changed Clause 7 of IEC 60401-1:2002 into Annex A.

The text of this International Standard is based on the following documents:

CDV	Report on voting
51/1313/CDV	51/1332/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60401 series, published under the general title *Terms and nomenclature for cores made of magnetically soft ferrites* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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TERMS AND NOMENCLATURE FOR CORES MADE OF MAGNETICALLY SOFT FERRITES –

Part 1: Terms used for physical irregularities and reference of dimensions

1 Scope

This part of IEC 60401 provides a nomenclature of the most frequent surface, bulk and shape irregularities relevant to cores made of soft ferrites (magnetic oxides). Most irregularities are graphically exemplified as visual aids. A general recommendation is also given in Annex A for a consistent scheme for specifying the exact location of the irregularity, combining a general name for the location with more detailed qualifiers of the specified location. This document can also be useful as a terminology reference when preparing technical documentation, irregularity inspection specifications, etc.

This document also presents a method for defining the designation nomenclature for the major physical attributes of soft ferrite core shapes. The purpose of this document is to facilitate uniform usage of dimensional characters by manufacturers, specifiers, and users when describing core dimensions on drawings, in tables, and on catalogue specification sheets.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in 4.2, 4.3, 4.5 and Annex A apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
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4 Physical irregularities

4.1 General overview

Physical irregularities mean here the surface irregularities, bulk irregularities and shape irregularities. The irregularity here stands for inconsistency of the state or quality of the part's surface, bulk or shape with its intended regularity. These irregularities are considered here in the macroscopic scale, i.e. within the range of linear dimensions of irregularities from one micrometre to tens of millimetres.

There is a great variety of surface, bulk and shape irregularities degrading the quality of parts made of ferrites. Different types of these irregularities can often occur together and overlap one another.

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