Ferrite cores - Guidelines on the limits of surface irregularities - Part 1: General Specification

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NATIONAL FOREWORD

See Eesti standard EVS-EN 60424-1:2016 sisaldab Euroopa standardi EN 60424-1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 60424-1:2016 consists of the English text of the European standard EN 60424-1:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.03.2016.	Date of Availability of the European standard is 11.03.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Noyaux ferrites - Lignes directrices relatives aux limites des irrégularités de surface - Partie 1: Spécification générale (IEC 60424-1:2015)

Ferritkerne - Leitfaden für Grenzwerte von sichtbaren Beschädigungen der Kernoberfläche - Teil 1: Fachgrundspezifikation (IEC 60424-1:2015)

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European foreword

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The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-10-08
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-01-08

This document supersedes EN 60424-1:1999.

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Endorsement notice

The text of the International Standard IEC 60424-1:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60401-3	NOTE	Harmonized as EN 60401-3.
IEC 60424-2	NOTE	Harmonized as EN 60424-2.
IEC 60424-3	NOTE	Harmonized as EN 60424-3.
IEC 60424-4	NOTE	Harmonized as EN 60424-4.
IEC 60424-8	NOTE	Harmonized as EN 60424-8.

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INTRODUCTION

Due to the method of manufacture and the physical nature of the products, ferrite cores can be expected to exhibit some degree of physical irregularities such as chips, ragged edges, cracks, flashing, and pull-out.

The permissible extent of these surface irregularities will depend on the type, position and size of the defect and on the function of the core. Thus, in order to establish limits of surface irregularities for a given series of ferrite cores, for example RM-cores, pot-cores, E-cores, U-cores and ring-cores, it is necessary to prepare a particular specification for each, setting out in detail the permissible extent of the various types of irregularities.

All surfaces of the core should be clean and free from loose ferrite particles or any other foreign matter. This is more critical for mating surfaces that should make good contact with one another. Stains, discolorations, surface crazing or crystallization are acceptable if they do not affect the normal performance of the core. The irregularities described below are considered as being detectable without the use of any magnifying equipment.

Surface irregularities limits are set for control of cosmetic appearance, and not for control of magnetic performance. Surface irregularities do not substantially affect core magnetic function, nor do they affect reliability. Reliability should be assessed for wound magnetics, rather than for cores alone. See IEC 60401-3 for more details concerning the reliability of ferrite cores and devices built with them.

FERRITE CORES – GUIDELINES ON THE LIMITS OF SURFACE IRREGULARITIES –

Part 1: General specification

1 Scope

This part of IEC 60424 gives guidelines on the allowable limits of surface irregularities of ferrite cores.

This standard should be considered as a general specification useful in the dialogue between ferrite core manufacturers and customers about surface irregularities.

2 Normative reference

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Void.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
chips and ragged edges
areas with missing surface material that are generally caused by mechanical impact during handling

3.2
crack
surface irregularity which has a width much smaller than its length, and penetrates into the core

3.3
flash
sharp feather-edge wall extending beyond the intended contour surface of the core

3.4
pull-out
consequence of the removal of a surface layer of the core due to die “sticking”

3.5
pores
holes left on the surface of cores after sintering and surface finishing

3.6
crystallites
grains of abnormal size distinguishable on the surface, often with sparkling facets