



SLOVENSKI STANDARD
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Ferrite cores - Guide on the limits of surface irregularities - Part 1: General specification (IEC 60424-1:1999)

Ferrite cores - Guide on the limits of surface irregularities -- Part 1: General specification

Ferritkernen - Leitfaden für Grenzwerte von sichtbaren Beschädigungen der Kernoberfläche -- Teil 1: Fachgrundspezifikation

Noyaux ferrites - Guide relatif aux limites des irrégularités de surface -- Partie 1: Spécification générale

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Ta slovenski standard je istoveten z: EN 60424-1:1999

ICS:

29.100.10 Magnetne komponente Magnetic components

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 60424-1

August 1999

ICS 29.100.10

English version

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Part 1: General specification
(IEC 60424-1:1999)**

Noyaux ferrites - Guide relatif aux
limites des irrégularités de surface
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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 51/529/FDIS, future edition 1 of IEC 60424-1, prepared by IEC TC 51, Magnetic components and ferrite materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60424-1 on 1999-08-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2000-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2002-08-01

Endorsement notice

The text of the International Standard IEC 60424-1:1999 was approved by CENELEC as a European Standard without any modification.

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**NORME
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**CEI
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60424-1

Première édition
First edition
1999-05

**Noyaux ferrites –
Guide relatif aux limites des irrégularités
de surface –**

**Partie 1:
Spécification générale**

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**Ferrite cores –
Guide on the limits of surface irregularities –**

Part 1: General specification

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Commission Electrotechnique Internationale
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Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FERRITE CORES –
GUIDE ON THE LIMITS OF SURFACE IRREGULARITIES –

Part 1: General specification

FOREWORD

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International Standard IEC 60424-1 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

The text of this standard is based on the following documents:

FDIS	Report on voting
51/529/FDIS	51/538/RVD

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

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next revision.

FERRITE CORES – GUIDE ON THE LIMITS OF SURFACE IRREGULARITIES –

Part 1: General specification

1 Scope

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

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

2 General

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

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, if it is required 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, etc., it would be necessary to prepare a particular specification setting out in great 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 applies mainly to the contact surfaces. 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.

3 Definitions of surface irregularities

3.1

chips and ragged edges

chips and ragged edges are areas with missing surface material and are generally caused by mechanical impact during handling (transportation, sorting, feeding, etc.) or grinding. Therefore, in almost all cases, they are located on the edges of surfaces (see figure 1).

The ragged edges should be considered as a series of small chips having a width less than 1 mm.

3.2

crack

surface irregularity which has a width much smaller than its length, and penetrates into the core. Cracks can therefore be limited by their length and their location (see figure 1)

3.3

flash

sharp feather-edge wall extending beyond the intended contour surface of the core (see figure 1)

3.4

pull-out

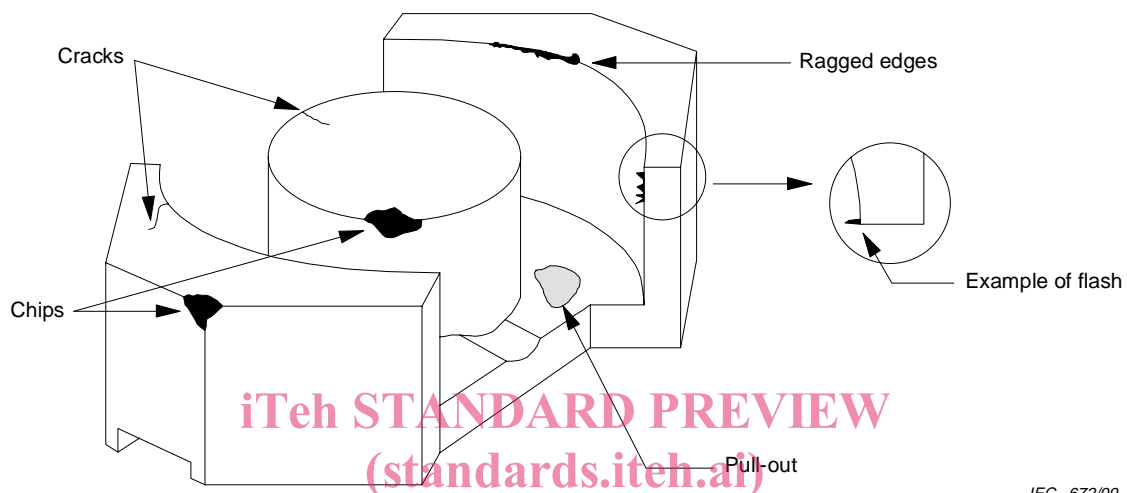
a pull-out is the consequence of the removal of surface layer of the core due to die “sticking”.

This occurs on surfaces perpendicular to the direction of the pressing action (see figure 1).

NOTE – A pull-out with depth greater than 1 mm is considered as a chip.

4 Examples of irregularities

Figure 1 shows different examples of surface irregularities on an RM-core.



IEC 672/99

Figure 1 – Examples of surface irregularities
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5 Locations and functions of core parts and surfaces (see figure 2)

5.1 Mating surfaces

These surfaces are generally ground in order to limit the residual air gap between the two core halves. Consequently, irregularities on these surfaces have to be considered as major ones, and carefully evaluated with regard to their influence on the magnetic properties of the complete circuit.

5.2 Centre post

This should be considered as the most important part of the core due to its function of carrying total flux generated by the winding. The centre post of ferrite cores is generally circular (with or without a hole) or rectangular.

5.3 Outer walls or legs

The main function of the outer walls (for example pot-cores) or the outer legs (for example E-cores) is to guide the magnetic flux in a closed magnetic circuit and to form an integral geometry of the core.

5.4 Back wall, bottom and back surfaces

The back wall has the same magnetic function as the outer walls or legs; it may include wire-slots and wire-way areas (for example on RM-cores), the shapes and dimensions of which are dictated by the winding and isolation requirements.