

STN	Feritové jadrá Návody na rozmery a medze povrchových nerovnomerností Časť 2: Hrnčekové jadrá na použitie v aplikáciách pre telekomunikácie, napájanie a filtrovanie	STN EN IEC 63093-2
		35 8471

Ferrite cores - Guidelines on dimensions and the limits of surface irregularities - Part 2: Pot-cores for use in telecommunications, power supply, and filter applications

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/20

Obsahuje: EN IEC 63093-2:2020, IEC 63093-2:2020

Oznámením tejto normy sa od 01.05.2023 ruší
STN EN 62317-2 (35 8467) z decembra 2010

131355

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 63093-2

May 2020

ICS 29.100.10

Supersedes EN 62317-2:2010 and all of its amendments
and corrigenda (if any)

English Version

**Ferrite cores - Guidelines on dimensions and the limits of
surface irregularities - Part 2: Pot-cores for use in
telecommunications, power supply, and filter applications
(IEC 63093-2:2020)**

Noyaux ferrites - Lignes directrices relatives aux
dimensions et limites des irrégularités de surface - Partie 2:
Circuits magnétiques en pots utilisés dans des applications
de télécommunications, d'alimentation électrique et de filtre
(IEC 63093-2:2020)

Ferritkerne - Richtlinien zu Maßen und Grenzen von
Oberflächenbeschädigungen - Teil 2: Schalenkerne für die
Verwendung in Telekommunikations-, Stromversorgungs-
und Filteranwendungen
(IEC 63093-2:2020)

This European Standard was approved by CENELEC on 2020-05-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 63093-2:2020 (E)**European foreword**

The text of document 51/1299/CDV, future edition 1 of IEC 63093-2, prepared by IEC/TC 51 "Magnetic components, ferrite and magnetic powder materials" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63093-2:2020.

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) 2021-02-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-05-01

This document supersedes EN 62317-2:2010 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 63093-2:2020 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62317-1 NOTE Harmonized as EN 62317-1

Annex ZA
(normative)**Normative references to international publications
with their corresponding European publications**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60205	-	Calculation of the effective parameters of magnetic piece parts	EN 60205	-
IEC 60401-1	-	Terms and nomenclature for cores made of magnetically soft ferrites - Part 1: Terms used for physical irregularities and reference of dimensions	-	-
IEC 60424-1	-	Ferrite cores - Guidelines on the limits of surface irregularities - Part 1: General specification	EN 60424-1	-



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Ferrite cores – Guidelines on dimensions and the limits of surface irregularities –
Part 2: Pot-cores for use in telecommunications, power supply, and filter applications**

**Noyaux ferrites – Lignes directrices relatives aux dimensions et limites des irrégularités de surface –
Partie 2: Circuits magnétiques en pots utilisés dans des applications de télécommunications, d'alimentation électrique et de filtre**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2020 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
 3, rue de Varembé
 CH-1211 Geneva 20
 Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Ferrite cores – Guidelines on dimensions and the limits of surface irregularities –
Part 2: Pot-cores for use in telecommunications, power supply, and filter applications**

**Noyaux ferrites – Lignes directrices relatives aux dimensions et limites des irrégularités de surface –
Partie 2: Circuits magnétiques en pots utilisés dans des applications de télécommunications, d'alimentation électrique et de filtre**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Primary dimensions	7
4.1 Dimensions of pot-cores	7
4.1.1 General	7
4.1.2 Principal dimensions	7
4.1.3 Wire-ways	9
4.1.4 Effective parameter values	9
4.2 Main dimensions for coil formers	10
5 Limits of surface irregularities	11
5.1 General	11
5.2 Examples of surface irregularities	11
5.3 Chips and ragged edges	12
5.3.1 General	12
5.3.2 Chips and ragged edges on the mating surfaces	12
5.3.3 Chips and ragged edges on the other surfaces	12
5.4 Cracks	15
5.5 Pull-out, crystallite and pore locations	16
5.6 Flash	16
Annex A (informative) Pot-core design	18
Annex B (informative) Example of gauges to check the dimensions of pot-cores	19
B.1 General	19
B.2 Procedure and requirements	20
Bibliography	21
 Figure 1 – Principal dimensions of pot-cores without back wall slots	8
Figure 2 – Principal dimensions of pot-cores with back wall slots	8
Figure 3 – Main dimensions of coil formers for pot-cores	11
Figure 4 – Examples of surface irregularities	12
Figure 5 – Chips location for pot-cores	13
Figure 6 – Cracks location – Top view	15
Figure 7 – Cracks location – Bottom view	15
Figure 8 – Pull-out, crystallite and pore locations	16
Figure 9 – Flash location	17
Figure B.1 – Dimensions of gauge A	19
Figure B.2 – Dimensions of gauges B and C	20
 Table 1 – Principal dimensions of pot-cores	7
Table 2 – Limits for dimensions C and G	9
Table 3 – Minimum wire-way depth	9
Table 4 – Effective parameter values for pot-cores with a centre hole	10
Table 5 – Effective parameter values for pot-cores without a centre hole	10

Table 6 – Main dimensions of coil formers for pot-cores.....	11
Table 7 – Area and length references of irregularities for visual inspection	14
Table 8 – Limits for cracks	16
Table A.1 – Ratio of diameter to height.....	18
Table B.1 – Dimensions of gauge A	19
Table B.2 – Dimensions of gauges B and C	20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FERRITE CORES – GUIDELINES ON DIMENSIONS AND THE LIMITS OF SURFACE IRREGULARITIES –

Part 2: Pot-cores for use in telecommunications, power supply, and filter applications

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 63093-2 has been prepared by technical committee 51: Magnetic components, ferrite and magnetic powder materials.

This first edition cancels and replaces the first edition of IEC 62317-2 published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition of IEC 62317-2:

- a) addition of the limits of surface irregularities;
- b) Table 4 and Table 5 are updated in accordance with IEC 60205:2016.

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

CDV	Report on voting
51/1299/CDV	51/1322/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 of the IEC 63093 series, published under the general title *Ferrite cores – Guidelines on dimensions and the limits of surface irregularities*, 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
- amended.

FERRITE CORES – GUIDELINES ON DIMENSIONS AND THE LIMITS OF SURFACE IRREGULARITIES –

Part 2: Pot-cores for use in telecommunications, power supply, and filter applications

1 Scope

This part of IEC 63093 specifies the dimensions that are of importance for mechanical interchangeability for a preferred range of pot-cores made of ferrite, and the dimensional limits for coil formers to be used with them, as well as the effective parameter values to be used in calculations involving them. It also gives guidelines on the allowable limits of surface irregularities applicable to pot-cores in accordance with the relevant generic specification.

The selection of core sizes and shapes for this document is based on the philosophy of including those sizes which are industrial standards, either by inclusion in a national standard, or by broad-based use in industry. See IEC 62317-1 for more detail concerning the philosophy of selecting core sizes to be included.

The general considerations upon which the design of this range of cores is based are given in Annex A.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60205, *Calculation of the effective parameters of magnetic piece parts*

IEC 60401-1, *Terms and nomenclature for cores made of magnetically soft ferrites – Part 1: Terms used for physical irregularities*

IEC 60424-1, *Ferrite cores – Guidelines on the limits of surface irregularities – Part 1: General specification*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN