



BSI Standards Publication

Ferrite cores – Guidelines on dimensions and the limits of surface irregularities

Part 14: EFD-cores (IEC 63093-14:2019)

National foreword

This British Standard is the UK implementation of EN IEC 63093-14:2019. It is identical to IEC 63093-14:2019. It supersedes BS EN 62317-14:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/51, Transformers, inductors, magnetic components and ferrite materials.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 580 98323 8

ICS 29.100.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2019.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

English Version

Ferrite cores - Guidelines on dimensions and the limits of
surface irregularities - Part 14: EFD-cores
(IEC 63093-14:2019)

Noyaux ferrites - Lignes directrices relatives aux
dimensions et aux limites des irrégularités de surface -
Partie 14: Noyaux EFD
(IEC 63093-14:2019)

Ferritkerne - Richtlinien zu Maßen und Grenzen von
Oberflächenbeschädigungen - Teil 14: EFD-Kerne
(IEC 63093-14:2019)

This European Standard was approved by CENELEC on 2019-05-09. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, 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

European foreword

The text of document 51/1272A/FDIS, future edition 1 of IEC 63093-14, 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 63093-14:2019.

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) 2020-02-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-05-09

This document supersedes EN 62317-14:2008.

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 63093-14:2019 was approved by CENELEC as a European Standard without any modification.

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	-	Ferrite materials - Guide on the format of data appearing in manufacturers' catalogues of transformer and inductor cores	-	-
IEC 60424-1	-	Ferrite cores - Guidelines on the limits of surface irregularities - Part 1: General specification	EN 60424-1	-

This page deliberately left blank

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Primary dimensions	7
4.1 General.....	7
4.2 Dimensions of EFD-cores	7
4.2.1 Principal dimensions.....	7
4.2.2 Effective parameter and $A_{\min}$ values	8
4.3 Dimensional limits for coil formers.....	8
4.4 Locations of pins and base outlines	9
4.5 Pin diameter	12
5 Mounting	12
6 Definitions and limits of surface irregularities.....	12
6.1 General.....	12
6.2 Examples of surface irregularities	12
6.3 Chips and ragged edges	12
6.3.1 General	12
6.3.2 Chips and ragged edges located on the mating surface	12
6.3.3 Chips and ragged edges located on other surfaces.....	13
6.4 Cracks	15
6.5 Pull-out	16
6.6 Crystallites.....	16
6.7 Flash	16
6.8 Pores	17
Annex A (informative) EFD-core design	18
Annex B (informative) Limits for allowable chipping areas.....	19
Figure 1 – Dimensions of EFD-cores.....	7
Figure 2 – Main dimensions of coil formers for EFD-cores	8
Figure 3 – Locations of pins (SMD type) viewed from the upper side of the board.....	10
Figure 4 – Locations of pins (PTH type) viewed from the upper side of the board.....	11
Figure 5 – Examples of surface irregularities	12
Figure 6 – Locations of chips and ragged edges	13
Figure 7 – Locations of cracks	15
Figure 8 – Location of pull-out	16
Figure 9 – Location of crystallite	16
Figure 10 – Location of flash.....	17
Figure 11 – Location of pore	17

Table 1 – Dimensions of EFD-cores	7
Table 2 – Effective parameter and $A_{\min}$ values for EFD-cores	8
Table 3 – Dimensional limits of coil formers for EFD-cores	9
Table 4 – Area and length reference of irregularities for visual inspection	14
Table 5 – Limits for cracks	15
Table B.1 – Limits for allowable chipping areas.....	19