ICS 29.080.30 SLOVENSKÁ TECHNICKÁ NORMA November 2017

STN	**Koordinácia izolácie zariadení v nízkonapäťových sieťach Časť 3: Použitie povlakov, zalievacích hmôt alebo výliskov na ochranu pred znečistením**	**STN EN 60664-3 33 0420**

Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution

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. 10/17

Obsahuje: EN 60664-3:2017, IEC 60664-3:2016

Oznámením tejto normy sa od 16.06.2020 ruší
STN EN 60664-3 (33 0420) z januára 2004

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EUROPEAN STANDARD **EN 60664-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM June 2017

ICS 29.080.30 Supersedes EN 60664-3:2003

English Version

Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution (IEC 60664-3:2016)

Coordination de l'isolement des matériels dans les systèmes (réseaux) à basse tension - Partie 3: Utilisation de revêtement, d'empotage ou de moulage pour la protection contre la pollution (IEC 60664-3:2016)

Isolationskoordination für elektrische Betriebsmittel in Niederspannungsanlagen - Teil 3: Anwendung von Beschichtungen, Eingießen oder Vergießen zum Schutz gegen Verschmutzung (IEC 60664-3:2016)

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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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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EN 60664-3:2017

European foreword

The text of document 109/153/FDIS, future edition 3 of IEC 60664-3, prepared by IEC/TC 109 “Insulation co-ordination for low-voltage equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60664-3:2017.

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)	2017-12-16
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-06-16

This document supersedes EN 60664-3:2003.

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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard IEC 60664-3:2016 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 60194:2006	NOTE	Harmonized as EN 60194:2006

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

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.

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-1	-	Environmental testing -- Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing -- Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-14	-	Environmental testing -- Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-78	-	Environmental testing -- Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60326-2	1990	Printed boards -- Part 2: Test methods	-	-
+ A1	2001		+ A1	2001
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems -- Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 61189-2	2006	Test methods for electrical materials, printed boards and other interconnection structures and assemblies -- Part 2: Test methods for materials for interconnection structures	EN 61189-2	2006
IEC 61189-3	2007	Test methods for electrical materials, printed boards and other interconnection structures and assemblies -- Part 3: Test methods for interconnection structures (printed boards)	EN 61189-3	2008
IEC 61249-2	series	Materials for printed boards and other interconnecting structures	EN 61249-2	series
IEC Guide 104	2010	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-

IEC 60664-3

Edition 3.0 2016-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

BASIC SAFETY PUBLICATION

PUBLICATION FONDAMENTALE DE SÉCURITÉ

Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution

Coordination de l'isolement des matériels dans les systèmes (réseaux) à basse tension – Partie 3: Utilisation de revêtement, d'empotage ou de moulage pour la protection contre la pollution

IEC 60664-3:2016-11(en-fr)

IEC 60664-3

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INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS –

Part 3: Use of coating, potting or moulding for protection against pollution

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.
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International Standard IEC 60664-3 has been prepared by IEC technical committee TC 109: Insulation co-ordination for low-voltage equipment.

It has the status of a basic safety publication in accordance with IEC Guide 104.

This third edition cancels and replaces the second edition published in 2003 and Amendment 1:2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) information added concerning interpolation;
b) provided scratch test is only for type 2 **protection**;

c) renumbered the scratch test to follow the visual examination test, since it makes more sense there;

d) separated the tables under what is now called Annex A, to make them clearer.

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

FDIS	Report on voting
109/153/FDIS	109/154/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.

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

In this standard, the following types are used:

– Terms used throughout this standard which have been defined in Clause 3: **bold type**

A list of all parts in the IEC 60664 series, published under the general title *Insulation coordination for equipment within low-voltage systems*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This part of IEC 60664 details the conditions in which the reduction of clearance and creepage distances can apply to rigid assemblies such as **printed boards** or terminals of components. **Protection** against pollution can be achieved by any kind of encapsulation such as **coating**, potting or moulding. The **protection** may be applied to one or both sides of the assembly. This standard specifies the insulating properties of the protecting material.

Between any two unprotected conductive parts, the clearance and creepage distance requirements of IEC 60664-1 apply.

This document refers only to permanent **protection**. It does not cover assemblies after repair.

Technical committees should consider the influence on the **protection** of overheating **conductors** and components, especially under fault conditions, and to decide if any additional requirements are necessary.

Safe performance of assemblies is dependent upon a precise and controlled manufacturing process for the application of the protective system. Requirements for quality control, e.g. by sampling tests, should be considered by technical committees.

INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS –

Part 3: Use of coating, potting or moulding for protection against pollution

1 Scope

This part of IEC 60664 applies to assemblies protected against pollution by the use of **coating**, potting or moulding, thus allowing a reduction of clearance and creepage distances as described in IEC 60664-1.

This document describes the requirements and test procedures for two methods of **protection**:

– type 1 **protection** improves the microenvironment of the parts under the **protection**;

– type 2 **protection** is considered to be similar to **solid insulation**.

This document also applies to all kinds of protected **printed boards**, including the surface of inner layers of multi-layer boards, substrates and similarly protected assemblies. In the case of multi-layer **printed boards**, the distances through an inner layer are covered by the requirements for **solid insulation** in IEC 60664-1.

NOTE Examples of substrates are hybrid integrated circuits and thick-film technology.

This document refers only to permanent **protection**. It does not cover assemblies that are subjected to mechanical adjustment or repair.

The principles of this standard are applicable to functional, basic, supplementary and reinforced insulation.

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 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60326-2:1990, *Printed boards – Part 2: Test methods*

IEC 60454-3-1:1998/AMD1:2001, *Pressure-sensitive adhesive tapes for electrical purposes – Part 3: Specifications for individual materials – Sheet 1: PVC film tapes with pressure – sensitive adhesive*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 61189-2:2006, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 2: Test methods for materials for interconnection structures*

IEC 61189-3:2007, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 3: Test methods for interconnection structures (printed boards)*

IEC 61249-2 (all parts), *Materials for printed boards and other interconnecting structures – Reinforced base materials, clad and unclad*

IEC Guide 104:2010, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*