



SLOVENSKI STANDARD

SIST HD 625.3 S1:1999

01-julij-1999

Insulation coordination for equipment within low-voltage systems - Part 3: Use of coatings to achieve insulation coordination of printed board assemblies (IEC 60664-3:1992)

Insulation coordination for equipment within low-voltage systems -- Part 3: Use of coatings to achieve insulation coordination of printed board assemblies

Isolationskoordination für Betriebsmittel in Niederspannungsanlagen -- Teil 3: Anwendung von Beschichtungen zum Zweck der Isolationskoordination bei bestückten Leiterplatten

Coordination de l'isolement des matériels dans les systèmes (réseaux) à basse tension -
- Partie 3: Utilisation de revêtements pour réaliser la coordination de l'isolement des cartes imprimées équipées

Ta slovenski standard je istoveten z: HD 625.3 S1:1997

ICS:

29.080.30 Izolacijski sistemi Insulation systems

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HD 625.3 S1

September 1997

ICS 29.080.01

Descriptors: Low-voltage equipment, insulation coordination, printed board assemblies, use of coatings

English version

**Insulation coordination for equipment within low-voltage systems
Part 3: Use of coatings to achieve insulation coordination of printed
board assemblies
(IEC 60664-3:1992)**

Coordination de l'isolement des
matériels dans les systèmes (réseaux)
à basse tension
Partie 3: Utilisation de revêtements pour
réaliser la coordination de l'isolement
des cartes imprimées équipées
(CEI 60664-3:1992)

Isolationskoordination für Betriebsmittel
in Niederspannungsanlagen
Teil 3: Anwendung von Beschichtungen
zum Zwecke der Isolationskoordination
bei bestückten Leiterplatten
(IEC 60664-3:1992)

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This Harmonization Document was approved by CENELEC on 1997-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 the International Standard IEC 60664-3:1992, prepared by SC 28A, Insulation coordination for low-voltage equipment, of IEC TC 28, Insulation coordination, was submitted to the formal vote and was approved by CENELEC as HD 625.3 S1 on 1997-07-01 without any modification.

The following dates were fixed:

- latest date by which the existence of the HD
has to be announced at national level (doa) 1997-12-01
- latest date by which the HD has to be implemented
at national level by publication of a harmonized
national standard or by endorsement (dop) 1998-06-01
- latest date by which the national standards conflicting
with the HD have to be withdrawn (dow) 1998-06-01

For products which have complied with the relevant national standard before 1998-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2003-06-01.

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A, B and ZA are normative and annex C is informative.
Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60664-3:1992 was approved by CENELEC as a Harmonization Document without any modification.

Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This Harmonization document incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Harmonization document only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-1	1990	Environmental testing Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60068-2-2	1974	Part 2: Tests - Test B: Dry heat	EN 60068-2-2 ¹⁾	1993
IEC 60068-2-3	1969	Part 2: Tests - Test Ca: Damp heat, steady state	HD 323.2.3 S2 ²⁾	1987
IEC 60068-2-14	1984	Part 2: Tests - Test N: Change of temperature	HD 323.2.14 S2	1987
+ A1	1986			
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 60194	1988	Terms and definitions for printed circuits	HD 142 S3	1991
IEC 60216	series	Guide for the determination of thermal endurance properties of electrical insulating materials	HD 611 EN 60216-3-2	series 1995
IEC 60249-3-3	1991	Base materials for printed circuits Part 3: Special materials used in connection with printed circuits Specification No. 3: Permanent polymer coating materials (solder resist) for use in the fabrication of printed boards	-	-
IEC 60326-2	1990	Printed boards Part 2: Test methods	-	-

1) EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

2) HD 323.2.3 S2 includes A1:1984 to IEC 60068-2-3.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60326-4	1980	Part 4: Specification for single and double sided printed boards with plain holes	-	-
A1	1989		-	-
IEC 60364-4-443	1990	Electrical installations of buildings Part 4: Protection for safety Chapter 44: Protection against overvoltages Section 443: Protection against overvoltages of atmospheric origin or due to switching	-	-
IEC 60664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. November 1996	1996

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IEC
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Première édition
First edition
1992-10

PUBLICATION FONDAMENTALE DE SÉCURITÉ
BASIC SAFETY PUBLICATION

**Coordination de l'isolement des matériels
dans les systèmes (réseaux) à basse tension**

Partie 3:

Utilisation de revêtements pour réaliser
la coordination de l'isolement
des cartes imprimées équipées

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**Insulation coordination for equipment
within low-voltage systems**

Part 3:

Use of coatings to achieve insulation
coordination of printed board assemblies

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INSULATION COORDINATION FOR EQUIPMENT
WITHIN LOW-VOLTAGE SYSTEMS****Part 3: Use of coatings to achieve insulation
coordination of printed board assemblies**

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

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This part of International Standard IEC 664 has been prepared by Sub-Committee 28A: Insulation coordination for low-voltage equipment, of IEC Technical Committee No. 28: Insulation coordination.

It forms part 3 of IEC 664.

IEC 664 consists of the following parts under the general title "Insulation coordination for equipment within low-voltage systems":

Part 1: 1992, Principles, requirements and tests.

Part 2: Concise requirements for clearances, creepage distances and solid insulation. (Under consideration.)

Part 3: 1992, Use of coatings to achieve insulation coordination of printed board assemblies.

Part 4: Application guide. (Under consideration.)

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

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

Six Months' Rule	Report on Voting
28A(CO)24	28A(CO)30

Full information on the voting for the approval of this part can be found in the Voting Report indicated in the above table.

Annexes A and B form an integral part of IEC 664-3.

Annex C is for information only.

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INTRODUCTION

This part of IEC 664 applies to rigid printed board assemblies protected by a coating of insulating material on one side or both sides of the printed board. It deals with the influence of these coatings on the insulation properties. It does not cover repaired printed board assemblies.

Between any two uncoated conductive parts and over the coating between conductive parts, the clearance and creepage distance requirements of IEC 664-1 apply.

The coatings considered in this part are permanent protective coatings, such as the following:

- permanent solder resists (wet or dry film) using screen printing or photo definable processes;
- coverlayers, i.e. insulating protective layers placed on the surface of a printed board;
- conformal coating, i.e. insulating coating applied to printed board assemblies.

Coating considered in this part may also include such encapsulation as moulding or potting.

Technical Committees have to consider the influence of overheating of conductors and components, especially under fault conditions, and to decide if any additional requirements are necessary.

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Not all coating systems in use are capable of improving insulation properties. The tests specified in this part can be used to determine the suitability of the coating systems.

Safe performance of printed board assemblies is dependent upon a precise and controlled manufacturing process for the application of the coating. Requirements for quality control, e.g. by sampling tests, should be considered by Technical Committees.