

SLOVENSKI STANDARD

SIST EN 60249-2-2:1997/A3:1997

01-avgust-1997

**Base materials for printed circuits - Part 2: Specifications - Specification No.2:
Phenolic cellulose paper copper-clad laminated sheet, economic quality (IEC 249-2
-2:1985/A3:1993) - Amendment 3**

Base materials for printed circuits -- Part 2: Specifications -- Specification No. 2: Phenolic
cellulose paper copper-clad laminated sheet, economic quality

Basismaterialien für gedruckte Schaltungen -- Teil 2: Einzelbestimmungen --
Einzelbestimmung Nr. 2: Kupferkaschierte Phenolharz-Hartpapiertafeln, wirtschaftliche
Qualität

Matériaux de base pour circuits imprimés -- Partie 2: Specifications -- Spécification n° 2:
Feuille de papier cellulose phénolique recouverte de cuivre de qualité économique

Ta slovenski standard je istoveten z: EN 60249-2-2:1994/A3:1994

ICS:

31.180 Tiskana vezja (TIV) in tiskane Printed circuits and boards
plošče

SIST EN 60249-2-2:1997/A3:1997 en

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UDC 621.3.049.75-036

Descriptors: Printed board, base material, specification, phenolic paper

Amendment A3 to the English version of EN 60249-2-2

Base materials for printed circuits

Part 2: Specifications

Specification No. 2: Phenolic cellulose paper
copper-clad laminated sheet, economic quality
(IEC 249-2-2:1985/A3:1993)Matériaux de base pour circuits
imprimés

Partie 2: Spécifications

Spécification n° 2: Feuille de
papier cellulose phénolique
recouverte de cuivre de qualité
économique
(CEI 249-2-2:1985/A3:1993)Basismaterialien für gedruckte
Schaltungen

Teil 2: Einzelbestimmungen

Einzelbestimmung Nr. 2:
Kupferkaschierte
Phenolharz-Hartpapiertafeln,
wirtschaftliche Qualität
(IEC 249-2-2:1985/A3:1993)iTeh STANDARD PREVIEW
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This amendment A3 modifies the European Standard EN 60249-2-2:1994. It was approved by CENELEC on 1993-12-08. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 Central Secretariat or to any CENELEC member.

This amendment 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 Central Secretariat has the same status as the official versions.

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

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EN 60249-2-2:1994/A3:1994

FOREWORD

At the request of the 76th Technical Board of CENELEC, amendment 3:1993 to the International Standard IEC 249-2-2:1985 was submitted to the CENELEC members for formal vote.

The text of the International Standard was approved by CENELEC as amendment A3 to EN 60249-2-2 on 8 December 1993.

The following dates were fixed:

- latest date of publication of
an identical national standard (dop) 1995-03-15
- latest date of withdrawal of
conflicting national standards (dow) 1995-03-15

ENDORSEMENT NOTICE

The text of amendment 3:1993 to the International Standard IEC 249-2-2:1985 was approved by CENELEC as an amendment to the European Standard without any modification. (standards.iteh.ai)

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NORME INTERNATIONALE INTERNATIONAL STANDARD

**CEI
IEC
249-2-2**

1985

AMENDEMENT 3
AMENDMENT 3

1993-05

Comprenant les amendements 1 (1989) et 2 (1990)
Incorporating Amendments 1 (1989) and 2 (1990)

Amendement 3

Matériaux de base pour circuits imprimés

Partie 2: Spécifications

Spécification n° 2: Feuille de papier cellulose
phénolique recouverte de cuivre de
qualité économique

[SIST EN 60249-2-2:1997/A3:1997](https://standards.iteh.ai/catalog/standards/sist/fd6b921f-a35f-42e6-b24e-b65523575c8c/sist-en-60249-2-2-1997-a3-1997)

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Amendment 3

Base materials for printed circuits

Part 2: Specifications

Specification No. 2: Phenolic cellulose paper
copper-clad laminated sheet, economic quality

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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FOREWORD

This amendment has been prepared by IEC technical committee 52: Printed circuits.

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

Amendments	Six Months' Rule/DIS	Reports on Voting	Two Months' Procedure	Report on Voting
3	52(CO)379 52(CO)380 52(CO)391	52(CO)388 52(CO)389 52(CO)395	-	-
2	52(CO)323	52(CO)338 52(CO)338A	52(CO)347	52(CO)355
1	52(CO)319	52(CO)330	-	-

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

The text of Amendment 3 is indicated by a vertical line in the margin.

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[SIST EN 60249-2-2:1997/A3:1997](https://standards.iteh.ai/catalog/standards/sist/fd6b921f-a35f-42e6-b24e-65523575c8c/sist-en-60249-2-2-1997-a3-1997)

[https://standards.iteh.ai/catalog/standards/sist/fd6b921f-a35f-42e6-b24e-](https://standards.iteh.ai/catalog/standards/sist/fd6b921f-a35f-42e6-b24e-65523575c8c/sist-en-60249-2-2-1997-a3-1997)

4 Electrical properties

Amend table I as follows:

Table I

Property	Test method (subclause of IEC 249-1)	Requirements
Surface corrosion	2.4	Under consideration
Corrosion at the edge	2.5	Under consideration
Relative permittivity after damp heat and recovery	2.7	The average value shall not exceed 5,5
Dielectric dissipation factor after damp heat and recovery	2.7	The average value shall not exceed 0,1
Surface resistance after damp heat and recovery	2.2	10 MΩ min.
Volume resistivity after damp heat and recovery	2.3	10 MΩm min.

5.4 Properties related to the copper foil bond

Table VI

Column 1:

Delete "1,1,1 – trichloroethane" and replace "Solvents other than trichloroethane" by "Solvents as agreed upon between purchaser and supplier".

Column 3:

Delete the sentence "As agreed upon between purchaser and supplier".

Add the following to table VI:

Table VI

Property	Test method (subclause of IEC 249-1)	Requirement
Peel strength after simulated plating (optional)	3.6.5	Not less than 0,6 N/mm (3,4 lbf/in)

5.7 Dimensional stability

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Replace "Not specified" by the following table:

Table XII

Property	Test method (subclause of IEC 249-1)	Requirement
Dimensional stability	3.11 $T = (150 \pm 2) ^\circ\text{C}$	2,0 mm/m max.

Add the following subclauses:

5.8 Size tolerances

5.8.1 Size tolerances for sheets

The size of the sheets as delivered by the supplier shall not deviate from the nominal size by more than $+10_0$ mm.

5.8.2 Size tolerances for cut panels

For panels cut to size according to the purchaser's specification, the following tolerances for length and width shall apply.

Table VII

Panel size (mm)	Tolerances ± (mm)	
	Normal	Close
Up to 300	2	0,5
Over 300 to 600		0,8
Over 600		1,6
NOTE - The specified tolerances include all deviations caused by cutting the panels.		

5.9 Rectangularity of cut panels

Table VIII

Property	Test method (subclause of IEC 249-1)	Requirements	
		Coarse (mm/m)	Normal (mm/m)
Rectangularity of cut panels	3.15	3	2

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6.2 Flexural strength

Replace "Table VII" by "Table IX".

Replace, in table IX, third column, "N/cm²" by the value in "N/mm²".