

SLOVENSKI STANDARD

SIST EN 60249-2-1:1997/A2:1997

01-avgust-1997

**Base materials for printed circuits - Part 2: Specifications - Specification No.1:
Phenolic cellulose paper copper-clad laminated sheet, high electrical quality (IEC
249-2-1:1985/A2:1993) - Amendment 2**

Base materials for printed circuits -- Part 2: Specifications - Specification No. 1: Phenolic
cellulose paper copper-clad laminated sheet, high electrical quality

Basismaterialien für gedruckte Schaltungen -- Teil 2: Einzelbestimmungen -
Einzelbestimmung Nr. 1: Kupferkaschierte Phenolharz-Hartpapiertafeln, hohe elektrische
Qualität

Matériaux de base pour circuits imprimés -- Partie 2: Specifications - Spécification n° 1:
Feuille de papier cellulose phénolique recouverte de cuivre de haute qualité électrique

Ta slovenski standard je istoveten z: EN 60249-2-1:1994/A2:1994

ICS:

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

SIST EN 60249-2-1:1997/A2:1997 en

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EUROPEAN STANDARD

EN 60249-2-1/A2

NORME EUROPEENNE

EUROPÄISCHE NORM

January 1994

UDC 621.3.049.75-036

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

Amendment A2 to the English version of EN 60249-2-1

Base materials for printed circuits
 Part 2: Specifications
 Specification No. 1: Phenolic cellulose paper
 copper-clad laminated sheet, high electrical
 quality
 (IEC 249-2-1:1985/A2:1993)

Matériaux de base pour circuits
 imprimés
 Partie 2: Spécifications
 Spécification n° 1: Feuille de
 papier cellulose phénolique
 recouverte de cuivre de haute
 qualité électrique
 (CEI 249-2-1:1985/A2:1993)

Basismaterialien für gedruckte
 Schaltungen
 Teil 2: Einzelbestimmungen
 Einzelbestimmung Nr. 1:
 Kupferkaschierte
 Phenolharz-Hartpapiertafeln,
 hohe elektrische Qualität
 (IEC 249-2-1:1985/A2:1993)

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This amendment A2 modifies the European Standard EN 60249-2-1:1994. 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 60249-2-1:1994/A2:1994

FOREWORD

At the request of the 76th Technical Board of CENELEC, amendment 2:1993 to the International Standard IEC 249-2-1:1985 was submitted to the CENELEC members for formal vote.

The text of the International Standard was approved by CENELEC as amendment A2 to EN 60249-2-1 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 2:1993 to the International Standard IEC 249-2-1:1985 was approved by CENELEC as an amendment to the European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
249-2-1**

1985

**AMENDEMENT 2
AMENDMENT 2**

1993-05

Comprenant la modification 1 (octobre 1989)
Incorporating Amendment 1 (October 1989)

Amendement 2

Matériaux de base pour circuits imprimés

Partie 2: Spécifications

**Spécification n° 1: Feuille de papier cellulose
phénolique recouverte de cuivre de haute qualité
électrique**

[SIST EN 60249-2-1:1997/A2:1997](https://standards.iteh.ai/catalog/standards/sist/aec2dc45-c5d8-4112-b53d-519ec466595/sist-en-60249-2-1-1997-a2-1997)

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Amendment 2

Base materials for printed circuits

Part 2: Specifications

**Specification No. 1: Phenolic cellulose paper
copper-clad laminated sheet, high electrical quality**

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Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
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D

Pour prix, voir catalogue en vigueur
For price, see current catalogue

FOREWORD

This amendment has been prepared by IEC Technical Committee No. 52: Printed circuits.

This amendment incorporates Amendment 1 (October 1989).

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

Amendments	DIS/Six Months' Rule	Report on Voting
2	52(CO)378 52(CO)379 52(CO)380 52(CO)391	52(CO)387 52(CO)388 52(CO)389 52(CO)395
1	52(CO)319	52(CO)330

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

The text of Amendment 2 can be distinguished by a vertical line in the margin.

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4 Electrical properties

[519ec46b8595/sist-en-60249-2-1-1997-a2-1997](https://standards.iteh.ai/catalog/standards/sist/aec2dc45-c5d8-4112-b53d-519ec46b8595/sist-en-60249-2-1-1997-a2-1997)

Table I

In the second, third, fourth and fifth boxes, replace the present property designation by:

Surface resistance after damp heat while in the humidity chamber (optional)

Surface resistance after damp heat and recovery

Volume resistivity after damp heat while in the humidity chamber (optional)

Volume resistivity after damp heat and recovery

Page 15

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".

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5.6 Solderability*Delete the complete text of this subclause***5.7 Dimensional stability***Replace the present table VIII by the following new table.*

Table VIII

Property	Test method (Subclause of IEC 249-1)	Test temperature (°C)	Requirement
Dimensional stability	3.11	150 ± 2	2,0 mm/m max.

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.

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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:

Panel size (mm)	Tolerance ± (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

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

6.2 Flexural strength

Table IX, 3rd column

Replace N/cm^2 by N/mm^2 .

7 Packaging and marking

In the second paragraph, replace "... as in the relevant specification" by "... as in this specification".