SLOVENSKI STANDARD
SIST EN 61249-8-7:1997

01-avgust-1997

Materials for interconnection structures - Part 8: Sectional specification set for non-conductive films and coatings - Section 7: Marking legend inks (IEC 1249-8-7:1996)

Materials for interconnection structures -- Part 8: Sectional specification set for non-conductive films and coatings -- Section 7: Marking legend inks

Materialien für Verbindungsstrukturen -- Teil 8: Rahmenspezifikationen für nichtleitende Folien und Beschichtungen -- Hauptabschnitt 7: Beschriftungslacke

Matériaux pour les structures d'interconnexion -- Partie 8: Collection des spécifications intermédiaires pour films non conducteurs et revêtements -- Section 7 : Encres de marquage

Ta slovenski standard je istoveten z: **EN 61249-8-7:1996**

ICS:

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

SIST EN 61249-8-7:1997 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61249-8-7

August 1996

ICS 31.180

Descriptors: Materials for interconnection structures, sectional specification, non-conductive films, coatings, marking legend inks, requirements

English version

Materials for interconnection structures
Part 8: Sectional specification set for non-conductive films and coatings
Section 7: Marking legend inks
(IEC 1249-8-7:1996)

Matériaux pour les structures d'interconnexion
Partie 8: Collection des spécifications intermédiaires pour films non conducteurs et revêtements
Section 7 : Encres de marquage
(CEI 1249-8-7:1996)

Materialien für Verbindungsstrukturen
Teil 8: Rahmenspezifikationen für nichtleitende Folien und Beschichtungen
Abschnitt 7: Beschriftungslacke
(IEC 1249-8-7:1996)

This European Standard was approved by CENELEC on 1996-07-02. 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 Central Secretariat 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 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

Foreword

The text of document 52/603/FDIS, future edition 1 of IEC 1249-8-7, prepared by IEC TC 52, Printed circuits, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61249-8-7 on 1996-07-02.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-04-01

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

Endorsement notice

The text of the International Standard IEC 1249-8-7:1996 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard 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 European Standard 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.

Publication	Year	Title	EN/HD	Year
IEC 68-2-2	1974	Basic environmental testing procedures Part 2: Tests - Test B: Dry heat	EN 60068-2-2[1)]	1993
IEC 68-2-3	1969	Part 2: Tests - Test Ca: Damp heat, steady state	HD 323.2.3 S2[2)]	1987
IEC 68-2-20	1979	Part 2: Tests - Test T: Soldering	HD 323.2.20 S3[3)]	1988
IEC 68-2-38	1974	Part 2: Tests - Test Z/AD: Composite temperature/humidity cyclic test	HD 323.2.38 S1	1988
IEC 326-2	1990	Printed boards Part 2: Test methods	-	-

1) EN 60068 includes supplement A:1976 to IEC 68-2-2.

2) HD 323.2.3 S2 includes A1:1984 to IEC 68-2-3.

3) HD 323.2.20 S3 includes A2:1987 to IEC 68-2-20.

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
1249-8-7

Première édition
First edition
1996-04

Matériaux pour les structures d'interconnexion –

Partie 8: Collection des spécifications intermédiaires pour films non conducteurs et revêtements – Section 7: Encres de marquage

Materials for interconnection structures –

Part 8: Sectional specification set for non-conductive films and coatings – Section 7: Marking legend inks

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE N

Pour prix, voir catalogue en vigueur
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MATERIALS FOR INTERCONNECTION STRUCTURES –

Part 8: Sectional specification set for non-conductive films and coatings – Section 7: Marking legend inks

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard 1249-8-7 has been prepared by IEC technical committee 52: Printed circuits.

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

FDIS	Report on voting
52/603/FDIS	52/641/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.

Annexes A and B are for information only.

MATERIALS FOR INTERCONNECTION STRUCTURES –

Part 8: Sectional specification set for non-conductive films and coatings – Section 7: Marking legend inks

1 Scope

This specification details requirements for the qualification of marking inks used for legends and other identifications used on printed boards.

Information in this specification will also provide guidance regarding the suitability of printed boards which feature marking inks. Requirements for the release of products using marking inks should be included in the customer detail specification (CDS).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 1249-8. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 1249-8 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 68-2-2: 1974, *Environmental testing – Part 2: Tests. Test B: Dry Heat*

IEC 68-2-3: 1969, *Basic environmental testing procedures – Part 2: Tests – Test Ca: Damp heat, steady state*

IEC 68-2-20: 1979, *Environmental testing – Part 2: Tests – Test T: Soldering*

IEC 68-2-38: 1974, *Basic environmental testing procedures – Part 2: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

IEC 326-2: 1990, *Printed boards – Part 2: Test methods*

3 Requirements

3.1 *Storage properties*

Legend marking inks, or their component compounds, when stored in their original sealed containers under the supplier's specified environmental conditions, shall retain the specified properties until the final date for use (see 3.2 b).

3.2 *Containers and their markings*

The legend marking ink shall be supplied in sound, clean, dry containers. In addition to any statutory markings, each container in the consignment shall be clearly marked with the following:

a) the type;

b) the specified storage temperature and humidity, or range thereof, and a final date for use;

c) details of mixing and curing conditions;

d) a distinct lot or batch number, and date of manufacture;

e) the quantity in the container;

f) the identity of the manufacturer, and place of manufacture.

3.3 *Adhesion (pressure sensitive tape method)*

The material shall be tested in accordance with future IEC 1189-3*, test 3X12.

When processed in accordance with the material supplier's instructions, there shall be no evidence of marking ink adhering to the tape. There shall be no separation between the marking ink and the underlying materials.

3.4 *Resistance to solvents, fluxes and soldering*

The cured legend marking ink shall not exhibit any degradation in surface characteristics, such as surface roughness, swelling, blistering, softening, changes of colour, or loss of adhesion when tested in accordance with test method 3C04 of future IEC 1189-3, including the soldering operation. The flux shall be an activated flux (0,2 %) as specified in 6.6.2 of IEC 68-2-20.

The test specimen shall be a production board, as agreed between customer and supplier. Three samples shall be taken.

3.5 *Degree of cure*

When tested in accordance with future IEC 1189-3, test 3M09, there shall be no softening or transfer of the material (other than free surface debris) to the lint-free cloth or cotton wool swab.

3.6 *Abrasion resistance (pencil hardness)*

The hardness of the cured legend marking ink shall be determined by the pencil test in accordance with future IEC 1189-3, test 3M08. The ink supplier shall report the limits of hardness that can be expected when the legend marking ink is properly applied and cured. When agreed upon between the customer and supplier, specific requirements regarding hardness shall be met, but in no case shall be less than 2H.

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* See annex B (Bibliography).