SLOVENSKI STANDARD
SIST EN 61249-7-1:2001

01-marec-2001

Materials for interconnection structures - Part 7: Sectional specification set for restraining core materials - Section 1: Copper/Invar/copper

Materials for interconnection structures -- Part 7: Sectional specification set for restraining core materials -- Section 1: Copper/Invar/copper

Materialien für Verbindungsstrukturen -- Teil 7: Rahmenspezifikation für Materialien mit verzugsfreiem Kern -- Hauptabschnitt 1: Kupfer/Invar/Kupfer

Matériaux pour les structures d'interconnexion -- Partie 7: Collection de spécifications intermédiaires pour matériau à âme réfrénant la dilatation -- Section 1: Cuivre/Invar/cuivre

Ta slovenski standard je istoveten z: **EN 61249-7-1:1995**

ICS:

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

SIST EN 61249-7-1:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61249-7-1

July 1995

ICS 31.180

Descriptors: Printed circuits, base materials, restraining core material, copper clad invar sheet, electrical properties, non-electrical properties, surface treatment, packaging and marking

English version

Materials for interconnection structures
Part 7: Sectional specification set for restraining core materials
Section 1: Copper/Invar/copper
(IEC 1249-7-1:1995)

Matériaux pour les structures d'interconnexion
Partie 7: Collection de spécifications intermédiaires pour matériau à âme réfrénant la dilatation
Section 1: Cuivre/Invar/cuivre
(CEI 1249-7-1:1995)

Materialien für Verbindungsstrukturen
Teil 7: Rahmenspezifikation für Materialien mit verzugsfreiem Kern
Hauptabschnitt 1: Kupfer/Invar/Kupfer
(IEC 1249-7-1:1995)

This European Standard was approved by CENELEC on 1995-07-04. 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(CO)400, future edition 1 of IEC 1249-7-1, prepared by IEC TC 52, Printed circuits, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61249-7-1 on 1995-07-04.

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) 1996-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-04-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 1249-7-1:1995 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 249-1	1982	Base materials for printed circuits Part 1: Test methods	EN 60249-1[1)]	1993
IEC 468	1974	Method of measurement of resistivity of metallic materials	-	-
ISO 6892	1984	Metallic materials Tensile testing	-	-
ISO 178	1993	Plastics Determination of flexural properties	-	-

1) EN 60249-1 includes A1:1984 + A2:1989 + A3:1991 to IEC 249-1.

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
1249-7-1

Première édition
First edition
1995-04

Matériaux pour les structures d'interconnexion –

Partie 7:
Collection de spécifications intermédiaires pour matériau à âme réfrénant la dilatation – Section 1: Cuivre/Invar/cuivre

Materials for interconnection structures –

Part 7:
Sectional specification set for restraining core materials – Section 1: Copper/Invar/copper

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

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE G

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MATERIALS FOR INTERCONNECTION STRUCTURES –

Part 7: Sectional specification set for restraining core materials – Section 1: Copper/Invar/copper

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 cooperation on all questions concerning standardization in the electrical and electronic field. 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, 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.

3) They have the form of recommendations for international use 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 inconformity with one of its standards.

International Standard IEC 1249-7-1 has been prepared by IEC technical committee 52: Printed circuits.

The IEC 1249 series will gradually replace IEC 249 series.

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

DIS	Report on voting
52(CO)400	52/551/RVD

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

MATERIALS FOR INTERCONNECTION STRUCTURES –

Part 7: Sectional specification set for restraining core materials – Section 1: Copper/Invar/copper

1 Scope

This specification gives the requirements for copper-clad Invar material for use in the fabrication of metal-clad laminated sheets, used for printed boards.

The use of copper-clad Invar material in printed boards modifies some properties of the boards, for example thermal capacity and coefficient of thermal expansion.

This specification covers copper-clad Invar material of nominal thickness from 0,1 mm to 2,4 mm. It applies mainly to copper-clad Invar material supplied in rolls, but by agreement between purchaser and supplier it may be applied to copper-clad Invar material produced in sheets.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 1249-7. 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 1249-7 are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 249-1: 1982, *Base materials for printed circuits – Part 1: Test methods*

IEC 468 : 1974, *Method of measurement of resistivity of metallic materials*

ISO 6892: 1984, *Metallic materials – Tensile testing*

ISO 178 : 1993, *Plastics – Determination of flexural properties*

3 Materials and construction

The material consists of an Invar base with copper symmetrically bonded to both sides (abbreviation: CIC for copper/Invar/copper).

3.1 *Material types*

Copper-clad Invar material for the use considered in this specification may be one of the following three types:

- CIC type A - Copper/Invar/copper in the ratio 5/90/5 by volume percentage;
- CIC type B - Copper/Invar/copper in the ratio 12,5/75/12,5 by volume percentage;
- CIC type C - Copper/Invar/copper in the ratio 20/60/20 by volume percentage.

The tolerance shall be ±10% of the nominal content of each component.