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Standards

Irish Standard  
I.S. EN 61249-2-40:2013

Materials for printed boards and other interconnecting structures -- Part 2-40: Reinforced base materials clad and unclad - High performance, non-halogenated epoxide woven E-glass laminate sheets of defined flammability (vertical burning test), copper-clad for lead-free assembly (IEC 61249-2-40:2012 (EQV))

## I.S. EN 61249-2-40:2013

*Incorporating amendments/corrigenda issued since publication:*

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English version

**Materials for printed boards and other interconnecting structures -  
Part 2-40: Reinforced base materials clad and unclad -  
High performance, non-halogenated epoxide woven E-glass laminate  
sheets of defined flammability (vertical burning test), copper-clad for lead-  
free assembly  
(IEC 61249-2-40:2012)**

Matériaux pour circuits imprimés et autres structures d'interconnexion -  
Partie 2-40: Matériaux de base renforcés, plaqués et non plaqués -  
Feuilles stratifiées en tissu de verre de type E époxyde non halogéné à haute performance, plaquées cuivre, d'inflammabilité définie (essai de combustion verticale), pour les assemblages sans plomb  
(CEI 61249-2-40:2012)

Materialien für Leiterplatten und andere Verbindungsstrukturen -  
Teil 2-40: Kaschierte und unkaschierte verstärkte Basismaterialien -  
Kupferkaschierte mit E-Glasgewebe verstärkte Laminattafeln hochwertiger Qualität auf der Basis von halogenfreiem Epoxidharz mit definierter Brennbarkeit (Brennprüfung mit vertikaler Prüflingslage) für bleifreie Bestückungstechnik  
(IEC 61249-2-40:2012)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 91/1053/FDIS, future edition 1 of IEC 61249-2-40, prepared by IEC TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61249-2-40:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-10-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-01-03

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 61249-2-40:2012 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60194:2006	NOTE	Harmonized as EN 60194:2006 (not modified).
ISO 9000:2005	NOTE	Harmonized as EN ISO 9000:2005 (not modified).
ISO 14001:2004	NOTE	Harmonized as EN ISO 14001:2004 (not modified).

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 61189-2	2006	Test methods for electrical materials, printed boards and other interconnection structures and assemblies - Part 2: Test methods for materials for interconnection structures	EN 61189-2	2006
IEC 61249-5-1	1995	Materials for interconnection structures - Part 5: Sectional specification set for conductive foils and films with or without coatings - Section 1: Copper foils (for the manufacture of copper-clad base materials)	EN 61249-5-1	1996
IEC/PAS 61249-6-3	2011	Specification for finished fabric woven from "E" glass for printed boards	-	-
ISO 11014	2009	Safety data sheet for chemical products - Content and order of sections	-	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**MATERIALS FOR PRINTED BOARDS  
AND OTHER INTERCONNECTING STRUCTURES –**
**Part 2-40: Reinforced base materials, clad and unclad –  
High performance, non-halogenated epoxide woven E-glass  
laminates sheets of defined flammability (vertical burning test),  
copper-clad for lead-free assembly**

## FOREWORD

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International Standard IEC 61249-2-40 has been prepared by IEC technical committee 91: Electronics assembly technology.

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

FDIS	Report on voting
91/1053/FDIS	91/1066/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61249 series, under the general title *Materials for printed boards and other interconnecting structures*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## **MATERIALS FOR PRINTED BOARDS AND OTHER INTERCONNECTING STRUCTURES –**

### **Part 2-40: Reinforced base materials, clad and unclad – High performance, non-halogenated epoxide woven E-glass laminated sheets of defined flammability (vertical burning test), copper-clad for lead-free assembly**

#### **1 Scope**

This part of IEC 61249 specifies requirements for properties of modified non-halogenated epoxide woven E-glass laminated sheet of a thickness of 0,05 mm up to 3,2 mm, of defined flammability (vertical burning test), copper-clad. The glass transition temperature is defined to be 170 °C minimum.

Its flame resistance is defined in terms of the flammability requirements of 7.3.

Some property requirements may have several classes of performance. The class desired should be specified on the purchase order, otherwise the default class of material will be supplied.

#### **2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61189-2:2006, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 2: Test methods for materials and other interconnection structures*

IEC 61249-5-1:1995, *Materials for interconnection structures – Part 5: Sectional specification set for conductive foils and films with or without coatings – Section 1: Copper foils (for the manufacture of copper-clad base materials)*

IEC/PAS 61249-6-3:2011, *Specification for finished fabric woven from E-glass for printed boards*

ISO 11014:2009, *Safety data sheet for chemical products – Content and order of sections*

#### **3 Materials and construction**

##### **3.1 General**

The sheet consists of an insulating base with metal-foil bonded to one side or both.

##### **3.2 Resin system**

A blend of majority di-functional non-halogenated epoxide, multifunctional non-halogenated epoxide and non-epoxide, woven E-glass laminate with a glass transition temperature of 170 °C minimum.

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