



**NSAI**  
Standards

Irish Standard  
I.S. EN 61249-2-41:2010

Materials for printed boards and other interconnecting structures -- Part 2-41: Reinforced base materials clad and unclad - Brominated epoxide cellulose paper/woven E-glass reinforced laminate sheets of defined flammability (vertical burning test), copper-clad for lead-free assembly (IEC 61249-2-41:2010 (EQV))

## I.S. EN 61249-2-41:2010

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**EN 61249-2-41**

May 2010

ICS 31.180

English version

**Materials for printed boards and other interconnecting structures -  
Part 2-41: Reinforced base materials clad and unclad -  
Brominated epoxide cellulose paper/woven E-glass reinforced laminate  
sheets of defined flammability (vertical burning test),  
copper-clad for lead-free assembly  
(IEC 61249-2-41:2010)**

Matériaux pour circuits imprimés et autres structures d'interconnexion -  
Partie 2-41: Matériaux de base renforcés, plaqués et non plaqués -  
Feuilles stratifiées renforcées en tissu de verre de type E/papier cellulose époxyde bromé, plaquées cuivre, d'inflammabilité définie (essai de combustion verticale) pour les assemblages sans plomb (CEI 61249-2-41:2010)

Materialien für Leiterplatten und andere Verbindungsstrukturen -  
Teil 2-41: Kaschierte und unkaschierte verstärkte Basismaterialien -  
Kupferkaschierte mit Zellulose-Papier und E-Glasgewebe verstärkte Laminattafeln für bleifreie Fertigung auf der Basis von bromhaltigem Epoxidharz mit definierter Brennbarkeit (Brennprüfung mit vertikaler Prüflingslage) (IEC 61249-2-41:2010)

This European Standard was approved by CENELEC on 2010-05-01. 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.

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**CENELEC**

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

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## Foreword

The text of document 91/911/FDIS, future edition 1 of IEC 61249-2-41, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61249-2-41 on 2010-05-01.

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

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) 2011-02-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2013-05-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61249-2-41:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60194:2006 NOTE Harmonized as EN 60194:2006 (not modified).

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## Annex ZA (normative)

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

The following referenced documents are indispensable for the application of this document. 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	-	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	-
ISO 9000	-	Quality management systems - Fundamentals and vocabulary	-	-
ISO 11014	-	Safety data sheet for chemical products - Content and order of sections	-	-
ISO 14001	-	Environmental management systems - Requirements with guidance for use	-	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**MATERIALS FOR PRINTED BOARDS  
AND OTHER INTERCONNECTING STRUCTURES –**
**Part 2-41: Reinforced base materials clad and unclad –  
Brominated epoxide cellulose paper/woven E-glass  
reinforced laminate sheets of defined flammability  
(vertical burning test), copper-clad for lead-free assembly**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61249-2-41 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
91/911/FDIS	91/922/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 2-41: Reinforced base materials clad and unclad – Brominated epoxide cellulose paper/woven E-glass reinforced laminate sheets of defined flammability (vertical burning test), copper-clad for lead-free assembly**

#### **1 Scope**

This part of IEC 61249 gives requirements for properties of brominated epoxide cellulose paper reinforced core/woven E-glass reinforced surface laminate sheets of defined flammability (vertical burning test), copper-clad for lead-free assembly in thicknesses of 0,60 mm up to 1,70 mm. The flammability rating is achieved through the use of brominated fire retardants reacted as part of the epoxide polymeric structure. The glass transition temperature is defined to be 100 °C minimum.

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 referenced documents are indispensable for the application of this document. 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 for interconnection structures*

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

ISO 9000, *Quality management systems – Fundamentals and vocabulary*

ISO 14001, *Environmental management systems – Requirements with guidance for use*

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

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

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

##### **3.1 Resin system**

Brominated epoxide, filled or unfilled, resulting in a laminate with a glass transition temperature of 100 °C minimum.

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