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**Material för mönsterkort och annan förbindning –
Del 2-46: Armerat basmaterial, belagt och obelagt –
Halogenfritt kompositlaminat med epoxihartsimpregnerad glasmatta som
stomme och epoxihartsimpregnerad glasväv som ytark, med termisk
ledningsförmåga $1,5 \text{ W}/(\text{m}\cdot\text{K})$ konduktivitet och brandtålighet specificerad i
vertikalt läge, kopparbelagt för blyfri montering**

Materials for printed boards and other interconnecting structures –

Part 2-46: Reinforced base materials clad and unclad –

*Non-halogenated epoxide non-woven/woven E-glass reinforced laminate sheets of thermal conductivity
 $1.5 \text{ W}/(\text{m}\cdot\text{K})$ and defined flammability (vertical burning test), copper-clad for lead-free assembly*

Som svensk standard gäller europastandarden EN IEC 61249-2-46:2018. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61249-2-46:2018.

Nationellt förord

Europastandarden EN IEC 61249-2-46:2018

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61249-2-46, First edition, 2018 - Materials for printed boards and other interconnecting structures - Part 2-46: Reinforced base materials clad and unclad - Non-halogenated epoxide non-woven/woven E-glass reinforced laminate sheets of thermal conductivity $1.5 \text{ W}/(\text{m}\cdot\text{K})$ and defined flammability (vertical burning test), copper-clad for lead-free assembly**

utarbetad inom International Electrotechnical Commission, IEC.

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ICS 31.180.00

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Telefon: 08 - 444 14 00.
E-post: sek@elstandard.se. Internet: www.elstandard.se

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Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

English Version

Materials for printed boards and other interconnecting structures
- Part 2-46: Reinforced base materials clad and unclad - Non-
halogenated epoxide non-woven/woven E-glass reinforced
lamine sheets of thermal conductivity (1.5W/m K) and defined
flammability (vertical burning test), copper-clad for lead-free
assembly
(IEC 61249-2-46:2018)

Matériaux pour circuits imprimés et autres structures
d'interconnexion - Partie 2-46 : Matériaux de base
renforcés, plaqués et non plaqués - Feuilles stratifiées
renforcées en verre de type E tissé/non tissé époxyde non
halogéné, plaquées cuivre de conductivité thermique
(1,5W/m m•K) et d'inflammabilité définie (essai de
combustion verticale) pour les assemblages sans plomb
(IEC 61249-2-46:2018)

Materialien für Leiterplatten und andere
Verbindungsstrukturen - Teil 2-46: Kaschierte und
unkaschierte verstärkte Basismaterialien -
Kupferkaschierte, mit E-Glaswirrfaser im Kernbereich und
E-Glasgewebe in den Außenlagen verstärkte Laminattafeln
auf der Basis von halogenfreiem Epoxidharz mit
Wärmeleitfähigkeit (1,5 W/m•K) und definierter Brennbarkeit
(vertikale Prüflingslage) für bleifreie Bestückungstechnik
(IEC 61249-2-46:2018)

This European Standard was approved by CENELEC on 2018-02-14. 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 91/1448/CDV, future edition 1 of IEC 61249-2-46, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61249-2-46:2018.

The following dates are fixed:

- latest date by which the document has to be (dop) 2018-11-14
implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2021-02-14
standards conflicting with the
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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61249-2-46:2018 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:

ISO 9000	NOTE	Harmonized as EN ISO 9000.
ISO 14001	NOTE	Harmonized as EN ISO 14001.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<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	-
IEC/PAS 61249-6-3	-	Specification for finished fabric woven from "E" glass for printed boards		-
ISO 11014	-	Safety data sheet for chemical products - Content and order of sections	-	-

CONTENTS

FOREWORD.....	4
1 Scope	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 Materials and construction	7
4.1 General.....	7
4.2 Resin system	7
4.3 Metal foil	7
4.4 Reinforcement.....	7
5 Electrical properties	7
6 Non-electrical properties of the copper-clad laminate	8
6.1 Appearance of the copper-clad sheet.....	8
6.1.1 General	8
6.1.2 Indentations (pits and dents)	8
6.1.3 Wrinkles	8
6.1.4 Scratches	8
6.1.5 Raised areas	9
6.2 Appearance of the unclad face	9
6.3 Laminate thickness	9
6.4 Bow and twist.....	9
6.5 Properties related to the copper foil bond	10
6.6 Punching and machining	11
6.7 Dimensional stability.....	11
6.8 Sheet sizes	11
6.8.1 Typical sheet sizes.....	11
6.8.2 Tolerances for sheet sizes	11
6.9 Cut panels.....	12
6.9.1 Cut panel sizes	12
6.9.2 Size tolerances for cut panels	12
6.9.3 Rectangularity of cut panels	12
6.10 Thermal conductivity	12
7 Non-electrical properties of the base material after complete removal of the copper foil	13
7.1 Appearance of the dielectric base material	13
7.2 Flexural strength	13
7.3 Flammability.....	13
7.4 Water absorption.....	14
7.5 Measling	14
7.6 Glass transition temperature and cure factor	14
7.7 Decomposition temperature.....	15
7.8 Time to delamination (TMA)	15
7.9 Halogen content	15
8 Quality assurance	15
8.1 Quality system	15
8.2 Responsibility for inspection	16
8.3 Qualification inspection	16
8.4 Quality conformance inspection	16

8.5	Certificate of conformance	16
8.6	Safety data sheet	16
9	Packaging and marking.....	16
10	Ordering information	17
	Annex A (informative) Engineering information	18
A.1	General.....	18
A.2	Chemical properties	18
A.3	Electrical properties	18
A.4	Flammability properties	18
A.5	Mechanical properties	18
A.6	Physical properties.....	18
A.7	Thermal properties	19
	Annex B (informative) Common laminate constructions.....	20
	Annex C (informative) Guideline for qualification and conformance inspection.....	21
	Bibliography	22
	Table 1 – Electrical properties	7
	Table 2 – Size of indentations	8
	Table 3 – Nominal thickness and tolerance of metal-clad laminate	9
	Table 4 – Bow and twist requirements	10
	Table 5 – Pull-off and peel strength requirements	10
	Table 6 – Dimensional stability	11
	Table 7 – Size tolerances for cut panels	12
	Table 8 – Rectangularity of cut panels	12
	Table 9 – Thermal conductivity.....	12
	Table 10 – Flexural strength requirements.....	13
	Table 11 – Flammability requirements	14
	Table 12 – Water absorption requirements	14
	Table 13 – Measling requirements	14
	Table 14 – Glass transition temperature and cure factor requirements	15
	Table 15 – Decomposition temperature requirements	15
	Table 16 – Time to delamination requirements.....	15
	Table 17 – Halogen content.....	15
	Table C.1 – Qualification and conformance inspection	21

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MATERIALS FOR PRINTED BOARDS AND OTHER INTERCONNECTING STRUCTURES –

Part 2-46: Reinforced base materials clad and unclad – Non-halogenated epoxide non-woven/woven E-glass reinforced laminate sheets of thermal conductivity 1,5 W/(m•K) and defined flammability (vertical burning test), copper-clad for lead-free assembly

FOREWORD

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International Standard IEC 61249-2-46 has been prepared by IEC technical committee 91: Electronics assembly technology.

The text of this International Standard is based on the following documents:

CDV	Report on voting
91/1448/CDV	91/1484/RVC

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

This document 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

A bilingual version of this publication may be issued at a later date.

MATERIALS FOR PRINTED BOARDS AND OTHER INTERCONNECTING STRUCTURES –

Part 2-46: Reinforced base materials clad and unclad – Non-halogenated epoxide non-woven/woven E-glass reinforced laminate sheets of thermal conductivity 1,5 W/(m•K) and defined flammability (vertical burning test), copper-clad for lead-free assembly

1 Scope

This part of IEC 61249 gives requirements for properties of non-halogenated epoxide non-woven reinforced core/woven E-glass reinforced surface laminate sheets of thermal conductivity and 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 non-halogenated fire retardants reacted as part of the epoxide polymeric structure. The glass transition temperature is defined to be 105 °C minimum. Thermal Conductivity is defined to be $(1,5 \pm 0,2)$ W/(m•K).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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)*

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

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