

Materials for printed boards and other interconnecting structures —

Part 2-18: Reinforced base materials, clad and unclad — Polyester non-woven fibreglass reinforced laminated sheet of defined flammability (vertical burning test), copper-clad

The European Standard EN 61249-2-18:2002 has the status of a British Standard

ICS 31.180

National foreword

This British Standard is the official English language version of EN 61249-2-18:2002. It is identical with IEC 61249-2-18:2002.

The UK participation in its preparation was entrusted to Technical Committee EPL/501, Electronic assembly technology, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 10 May 2002

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Materials for printed boards and other interconnecting structures
Part 2-18: Reinforced base materials, clad and unclad -
Polyester non-woven fibreglass reinforced laminated sheet
of defined flammability (vertical burning test), copper-clad
(IEC 61249-2-18:2002)

Matériaux pour circuits imprimés et
autres structures d'interconnexion
Partie 2-18 : Matériaux de base renforcés,
plaqués et non plaqués -
Feuille stratifiée renforcée
de fibres de verre non tissées polyester,
d'inflammabilité définie
(essai de combustion verticale),
plaquée cuivre
(CEI 61249-2-18:2002)

Materialien für Leiterplatten und
andere Verbindungsstrukturen
Teil 2-18: Kaschierte und unkaschierte
verstärkte Basismaterialien -
Kupferkaschierte mit Glaswirrfasern
verstärkte Polyesterharz-Laminattafeln
definierter Brennbarkeit
(Brennprüfung mit vertikaler Prüflingslage)
(IEC 61249-2-18:2002)

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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.

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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 91/271/FDIS, future edition 1 of IEC 61249-2-18, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61249-2-18 on 2002-03-01.

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) 2002-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

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 annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61249-2-18:2002 was approved by CENELEC as a European Standard without any modification.

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MATERIALS FOR PRINTED BOARDS AND OTHER INTERCONNECTING STRUCTURES –

Part 2-18: Reinforced base materials, clad and unclad – Polyester non-woven fibreglass reinforced laminated sheet of defined flammability (vertical burning test), copper-clad

1 Scope

This standard gives requirements for properties of polyester non-woven E-glass reinforced copper-clad laminated sheet, of defined flammability, in thicknesses of 0,80 mm to 1,60 mm.

Some property requirements may have several classes of performance. The class desired must 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 61189-2:1997, *Test methods for electrical materials, interconnection structures and assemblies – Part 2: Test methods for materials for interconnection structures*
Amendment 1: 2000

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 Foil (for the manufacture of copper-clad base materials)*

ISO 9000:2000, *Quality management systems – Fundamentals and vocabulary*

ISO 11014-1:1994, *Safety data sheet for chemical products – Part 1: Content and order of sections*

ISO 14001:1996, *Environmental management systems – Specification with guidance for use*

3 Materials and construction

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

3.1 Insulating base

Polyester non-woven E-glass reinforcement (paper or felt) based laminate. Its flame resistance is defined in terms of the flammability requirements of 7.3.

3.2 Metal foil

Copper as specified in IEC 61249-5-1, copper foil (for the manufacture of copper-clad materials). The preferred foils are electrodeposited, and of defined ductility.

3.3 Reinforcement

Non-woven E-glass reinforcement: non-woven E-glass fabric (for the manufacture of copper-clad materials).

4 Internal marking

None required.

5 Electrical properties

The electrical property requirements are shown in table 1.

Table 1 – Electrical properties requirements

Property	Test method (IEC 61189-2)	Requirement
Resistance of foil	2E12	As specified in IEC 61249-5-1
Surface resistance after damp heat while in the humidity chamber (optional)	2E03	$\geq 1\,000\text{ M}\Omega$
Surface resistance	2E03	$\geq 10\,000\text{ M}\Omega$
Volume resistivity after damp heat while in the humidity chamber (optional)	2E04	$\geq 1\,000\text{ M}\Omega\text{m}$
Volume resistivity after damp heat and recovery	2E04	$\geq 10\,000\text{ M}\Omega\text{m}$
Relative permittivity	2E10	$\leq 4,2$
Dissipation factor after damp heat and recovery	2E10	$\leq 0,030$
Electric strength (less than 0,5 mm thickness)	2E11	To be agreed upon between purchaser and supplier
Surface resistance at 125°C	2E07	$\geq 500\text{ M}\Omega$
Volume resistivity at 125°C	2E07	$\geq 100\text{ M}\Omega\text{m}$

6 Non-electrical properties of the copper-clad laminate

6.1 Appearance of the copper-clad sheet

The copper-clad face shall be substantially free from defects that may have an impact on the materials' fitness for use for the intended purpose.

For the following specific defects the requirements given shall apply when inspection is made in accordance with IEC 61189-2 method 2M18.