



SLOVENSKI STANDARD SIST EN 61249-4-1:2008

01-september-2008

Materials for printed boards and other interconnecting structures - Part 4-1: Sectional specification set for prepreg materials, unclad (for the manufacture of multilayer boards) - Epoxide woven E-glass prepreg of defined flammability

Materials for printed boards and other interconnecting structures - Part 4-1: Sectional specification set for prepreg materials, unclad (for the manufacture of multilayer boards) - Epoxide woven E-glass prepreg of defined flammability (standards.iteh.ai)

Materialien für Leiterplatten und andere Verbindungsstrukturen - Teil 4-1: Rahmenspezifikationen für unkaschierte Prepreg-Materialien (zur Herstellung von Mehrlagenleiterplatten) - Mit E-Glasgewebe verstärkte Epoxidharz-Prepregs mit definierter Brennbarkeit

Matériaux pour circuits imprimés et autres structures d'interconnexion - Partie 4-1: Série de spécifications intermédiaires pour matériaux préimprégnés, non plaqués (pour la fabrication des circuits multicouches) - Tissu de verre époxyde préimprégné de type E d'inflammabilité définie

Ta slovenski standard je istoveten z: EN 61249-4-1:2008

ICS:

31.180 Vě \ aē aē \ : bē \ Q \ Dē \ Áē \ aē ^ Printed circuits and boards
] || z ^

SIST EN 61249-4-1:2008

en,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61249-4-1:2008

<https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008>

**Materials for printed boards and other interconnecting structures -
 Part 4-1: Sectional specification set for prepreg materials, unclad
 (for the manufacture of multilayer boards) -
 Epoxide woven E-glass prepreg of defined flammability
 (IEC 61249-4-1:2008)**

Matériaux pour circuits imprimés
 et autres structures d'interconnexion -
 Partie 4-1: Série de spécifications
 intermédiaires pour matériaux
 préimprégnés, non plaqués
 (pour la fabrication des circuits
 multicouches) -
 Tissu de verre époxyde préimprégné
 de type E d'inflammabilité définie
 (CEI 61249-4-1:2008)

Materialien für Leiterplatten
 und andere Verbindungsstrukturen -
 Teil 4-1: Rahmenspezifikationen
 für unkaschierte Prepreg-Materialien
 (zur Herstellung von
 Mehrlagenleiterplatten) -
 Mit E-Glasgewebe verstärkte
 Epoxidharz-Prepregs
 mit definierter Brennbarkeit
 (IEC 61249-4-1:2008)

<https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008>

This European Standard was approved by CENELEC on 2008-04-01. 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.

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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 91/739/FDIS, future edition 1 of IEC 61249-4-1, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61249-4-1 on 2008-04-01.

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) 2009-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2011-04-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61249-4-1:2008 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

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61249-4-1:2008](https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008>

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, interconnection structures and assemblies - Part 2: Test methods for materials for interconnection structures	EN 61189-2	2006
IEC 61189-3	1997	Test methods for electrical materials, printed boards and other interconnection structures and assemblies - Part 3: Test methods for interconnection structures (printed boards)	EN 61189-3 ¹⁾	1997
IEC 61249-2-7	2002	Materials for printed boards and other interconnecting structures - Part 2-7: Reinforced base materials, clad and unclad - Epoxy resin E-glass laminated sheet of defined flammability (vertical burning test), copper clad	EN 61249-2-7 + corr. September 2005	2002
IEC 62326-4	1997 ²⁾	Printed boards - Part 4: Rigid multilayer printed boards with interlayer connections - Sectional specification	EN 62326-4	1997 ³⁾
ISO 9000	2005	Quality management systems - Fundamentals and vocabulary	EN ISO 9000	2005
ISO 11014-1	1994	Safety data sheet for chemical products - Part 1: Content and order of sections	-	-
ISO 14001	2004	Environmental management systems - Requirements with guidance for use	EN ISO 14001	2004

¹⁾ EN 61189-3 is superseded by EN 61189-3:2008, which is based on IEC 61189-3:2007.

²⁾ Undated reference.

³⁾ Valid edition at date of issue.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61249-4-1:2008

<https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008>



IEC 61249-4-1

Edition 1.0 2008-01

INTERNATIONAL STANDARD

**Materials for printed boards and other interconnecting structures –
Part 4-1: Sectional specification set for prepreg materials, unclad (for the
manufacture of multilayer boards) – Epoxide woven E-glass prepreg of defined
flammability**

[SIST EN 61249-4-1:2008](https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/538e46fa-fdd5-411e-9072-1f8a925943ad/sist-en-61249-4-1-2008>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

M

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	5
3 Materials and construction.....	5
3.1 Reinforcement.....	6
3.2 Epoxide resin	6
4 Properties.....	6
4.1 Properties related to the appearance of the prepreg	6
4.1.1 Dewetted areas (fish eyes).....	6
4.1.2 Broken filaments.....	6
4.1.3 Distortion.....	6
4.1.4 Creases.....	6
4.1.5 Edge conditions.....	6
4.2 Properties related to B stage prepreg	7
4.2.1 Resin content	7
4.2.2 Treated weight.....	7
4.2.3 Resin flow	7
4.2.4 Scaled flow thickness	7
4.2.5 Melting viscosity.....	8
4.2.6 Gel time.....	8
4.2.7 Volatile content.....	8
4.3 Properties of prepreps after curing to C stage.....	8
4.3.1 Electric strength.....	8
4.3.2 Flammability.....	8
4.3.3 Relative permittivity and dissipation factor	9
4.3.4 Cured thickness.....	9
5 Delivery form.....	9
5.1 Rolls.....	9
5.2 Sheets.....	9
5.3 Cut panels.....	9
6 Quality assurance.....	10
6.1 Quality system.....	10
6.2 Responsibility for inspection	10
6.3 Qualification inspection	10
6.4 Quality conformance inspection.....	10
6.5 Certificate of conformance.....	10
6.6 Safety data sheet	10
7 Packaging and marking	10
8 Shelf life	11
9 Ordering information.....	11
Bibliography.....	12
Table 1 – Flammability.....	9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MATERIALS FOR PRINTED BOARDS AND OTHER
INTERCONNECTING STRUCTURES –**
**Part 4-1: Sectional specification set for prepreg materials,
unclad (for the manufacture of multilayer boards) –
Epoxy woven E-glass prepreg of defined flammability**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61249-4-1 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
91/739/FDIS	91/747/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.