



SLOVENSKI STANDARD

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Combined flexible materials for electrical insulation - Part 3: Specifications for individual materials (IEC 60626-3:2008)

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Flexible Mehrschichtisolerstoffe zur elektrischen Isolation - Teil 3: Bestimmungen für einzelne Materialien (IEC 60626-3:2008)

SIST EN 60626-3:2008

Matériaux combinés souples destinés à l'isolement électrique - Partie 3: Spécifications pour matériaux particuliers (CEI 60626-3:2008)

Ta slovenski standard je istoveten z: EN 60626-3:2008

ICS:

29.035.01	Izolacijski materiali na splošno	Insulating materials in general
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SIST EN 60626-3:2008

en,fr

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60626-3

August 2008

ICS 29.035.01

Supersedes EN 60626-3:1996 + A1:1999

English version

**Combined flexible materials for electrical insulation -
Part 3: Specifications for individual materials
(IEC 60626-3:2008)**

Matériaux combinés souples
destinés à l'isolement électrique -
Partie 3: Spécifications
pour matériaux particuliers
(CEI 60626-3:2008)

Flexible Mehrschichtisolierstoffe
zur elektrischen Isolation -
Teil 3: Bestimmungen
für einzelne Materialien
(IEC 60626-3:2008)

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This European Standard was approved by CENELEC on 2008-08-01. 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 15/442/FDIS, future edition 3 of IEC 60626-3, prepared by IEC TC 15 "Solid electrical insulating materials", was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60626-3 on 2008-08-01.

This European Standard supersedes EN 60626-3:1996 + A1:1999.

The main changes from EN 60626-3:1996 are as follows:

- consolidation of Amendment 1 published in 1999 which was mainly describing the sheets from 340 to 459;
- revision and reordering of previous tables of EN 60626-3:1996.

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) 2009-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2011-08-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60626-3:2008 was approved by CENELEC as a European Standard without any modification. <http://standards.iteh.ai/catalog/standards/sist/c54dd747-883e-4b25-9817-7f532bb60a2b/sist-en-60626-3-2008>

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

IEC 60554-2	NOTE Harmonized as EN 60554-2:2002 (not modified).
IEC 60641-2	NOTE Harmonized as EN 60641-2:2004 (not modified).
IEC 60674-2	NOTE Harmonized as EN 60674-2:1998 (not modified).
IEC 60819-2	NOTE Harmonized as EN 60819-2:2001 (not modified).

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 60554-1	1977	Specification for cellulosic papers for electrical purposes - Part 1: Definitions and general requirements	-	-
IEC 60554-3	Series	Specification for cellulosic papers for electrical purposes - Part 3: Specifications for individual materials	-	-
IEC 60626-1	1995	Combined flexible materials for electrical insulation - Part 1: Definitions and general requirements	EN 60626-1	1995
IEC 60626-2	1995	Combined flexible materials for electrical insulation - Part 2: Methods of test	EN 60626-2	1995
IEC 60641-1	2007	Pressboard and presspaper for electrical purposes - Part 1: Definitions and general requirements	EN 60641-1	2008
IEC 60641-3-2	2007	Pressboard and presspaper for electrical purposes - Part 3: Specifications for individual materials - Sheet 2: Requirements for presspaper, types P.2.1, P.4.1, P.4.2, P.4.3 and P.6.1	EN 60641-3-2	2008
IEC 60674-1	1980	Specification for plastic films for electrical purposes - Part 1: Definitions and general requirements	EN 60674-1	1998
IEC 60674-3-2	1992	Specification for plastic films for electrical purposes - Part 3: Specifications for individual materials - Sheet 2: Requirements for balanced biaxially oriented polyethylene terephthalate (PET) films used for electrical insulation	EN 60674-3-2	1998
IEC 60674-3-4 to 6	1993	Specification for plastic films for electrical purposes - Part 3: Specifications for individual materials - Sheets 4 to 6: Requirements for polyimide films used for electrical insulation	EN 60674-3-4 to 6	1995
IEC 60819-1 A1	1995 1996	Non-cellulosic papers for electrical purposes - Part 1: Definitions and general requirements	EN 60819-1 A1	1995 1996

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60819-3-1	2001	Non-cellulosic papers for electrical purposes - Part 3: Specifications for individual materials - Sheet 1: Filled glass paper	EN 60819-3-1	2001
IEC 60819-3-2	2001	Non-cellulosic papers for electrical purposes - Part 3: Specifications for individual materials - Sheet 2: Hybrid inorganic-organic paper	EN 60819-3-2	2001
IEC 60819-3-3	2006	Non-cellulosic papers for electrical purposes - Part 3: Specifications for individual materials - Sheet 3: Unfilled aramid (aromatic polyamide) papers	EN 60819-3-3	2006

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IEC 60626-3

Edition 3.0 2008-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Combined flexible materials for electrical insulation –
Part 3: Specifications for individual materials

Matériaux combinés souples destinés à l'isolement électrique –
Partie 3: Spécifications pour matériaux particuliers

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

XB

ICS 29.035.01

ISBN 2-8318-9896-X

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**COMBINED FLEXIBLE MATERIALS
FOR ELECTRICAL INSULATION –**
Part 3: Specifications for individual materials

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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- 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 60626-3 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This third edition cancels and replaces the second edition published in 1996 and its amendment 1 (1999), and constitutes a technical revision. The main changes from the previous edition are as follows:

- consolidation of amendment 1 published in 1999 which was mainly describing the sheets from 340 to 459;
- revision and reordering of previous tables of 1996 edition.

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

FDIS	Report on voting
15/442/FDIS	15/465/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 the parts in the IEC 60626 series, under the general title *Combined flexible materials for electrical insulation*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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INTRODUCTION

This standard contains 31 sheets of Part 3, as follows:

100, 101, 102, 110, 111, 112, 113, 114, 115, 302, 303, 312, 313, 315, 320, 330, 340, 350, 351, 360, 400, 401, 402, 403, 410, 411, 420, 421, 502, 503, 505.

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COMBINED FLEXIBLE MATERIALS FOR ELECTRICAL INSULATION –

Part 3: Specifications for individual materials

1 Scope

This part of IEC 60626 specifies dimensional and performance requirements for individual combined flexible materials for electrical insulation. This part is in the form of groups of sheets. Sheets are numbered in accordance with Table 1, which provides a complete list of all the specification sheets belonging to this standard.

Materials which conform to this specification meet established levels of performance. However, the selection of material by a user for a specific application should be based on the actual requirements necessary for adequate performance in that application and not based on this specification alone.

SAFETY WARNING

It is the responsibility of the user of the methods contained or referred to in this document to ensure that they are used in a safe manner.

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.

The list of normative references is extensive because, in order to obtain a combination of two or more materials for electrical insulation, it is necessary that those base materials (paper, film, etc.) shall conform to the requirements set forth, in the appropriate specification of the base material alone, for that purpose. This rule shall be applied also in the development of new possible combinations; to this end, specifications of materials not actually used, but referenced, may be eligible for future developments.

IEC 60554-1:1977, *Specification for cellulosic papers for electrical purposes – Part 1: Definitions and general requirements*

IEC 60554-3 (all parts), *Specification for cellulosic papers for electrical purposes – Part 3: Specifications for individual materials*

IEC 60626-1:1995, *Combined flexible materials for electrical insulation – Part 1: Definitions and general requirements*

IEC 60626-2:1995, *Combined flexible materials for electrical insulation – Part 2: Methods of test*

IEC 60641-1:2008, *Pressboard and presspaper for electrical purposes – Part 1: Definitions and general requirements*

IEC 60641-3-2:2008, *Pressboard and presspaper for electrical purposes – Part 3: Specifications for individual materials – Sheet 2: Requirements for presspaper types P.2.1, P.4.1, P.4.2, P.4.3 and P.6.1*

IEC 60674-1:1980, *Specification for plastic films for electrical purposes – Part 1: Definitions and general requirements*

IEC 60674-3-2:1992, *Specification for plastic films for electrical purposes – Part 3: Specifications for individual materials – Sheet 2: Requirements for balanced biaxially oriented polyethylene terephthalate (PET) films used for electrical insulation*

IEC 60674-3-4:1993, *Specification for plastic films for electrical purposes – Part 3: Specifications for individual materials – Sheet 4: Requirements for polyimide films used for electrical insulation*

IEC 60819-1:1995, *Non-cellulosic papers for electrical purposes – Part 1: Definitions and general requirements*
Amendment 1 (1996)

IEC 60819-3-1:2001, *Non-cellulosic papers for electrical purposes – Part 3: Specifications for individual materials – Sheet 1: Filled glass paper*

IEC 60819-3-2:2001, *Non-cellulosic papers for electrical purposes – Part 3: Specifications for individual materials – Sheet 2: Hybrid inorganic- organic paper*

IEC 60819-3-3:2006, *Non-cellulosic papers for electrical purposes – Part 3: Specifications for individual materials – Sheet 3: Unfilled aramid (aromatic polyamide) papers*

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3 Requirements

In addition to complying with the general requirements of IEC 60626-1, each flexible combined laminate shall conform to the requirements set forth in the appropriate sheet corresponding to its type, as shown in the sheets of this standard.

4 Designation

Table 1 lists material designations and constructions appropriate to each sheet. Material conforming to this specification shall be identified by a designation containing the IEC standard number, the material designation from IEC 60626-1 and the nominal thickness. For example:

IEC 60626-3, Sheet 112, P-C/F-PET/P-C, 0,15 mm

5 Thermal classification

Performance experience provides information about the thermal capability of combined flexible materials in electrical insulation systems. This information is given in each individual sheet. Thermal classification information on these sheets is not to be considered as a requirement.

6 Specification sheets

The presently 31 sheets listed in the Introduction are organised according to the composition of the laminates as described in the following master listing Table 1, including sections that could be offered by the market in the future; therefore classification numbering is already provided for future growth.

Table 1 – Master listing for IEC 60626-3 sheet identification

Sheet No.	Flexible laminate composition
100 to 149	Paper or presspaper containing sulphate wood pulp fibres
100 to 109	Duplex with PET film
110 to 119	Triplex with PET film
120 to 149	Others ^a
150 to 199	Paper or presspaper containing cotton fibres ^a
150 to 159	Duplex with PET film ^a
160 to 169	Triplex with PET film ^a
170 to 199	Others ^a
200 to 249	Paper or presspaper containing both cotton and wood pulp fibres ^a
200 to 209	Duplex with PET film ^a
210 to 219	Triplex with PET film ^a
220 to 249	Others ^a
250 to 299	Paper or presspaper containing other cellulosic fibres or mixtures of cellulosic and non-cellulosic fibers ^a
300 to 399	Wet-laid paper containing organic non-cellulosic fibres
300 to 309	Duplex calendered aramid with PET film
310 to 319	Triplex calendered aramid with PET film
320 to 329	Triplex uncalendered aramid with PET film
330 to 339	Triplex calendered aramid with PI film
340 to 349	Duplex hybrid organic-inorganic with PET film
350 to 359	Triplex hybrid organic-inorganic with PET film
360 to 369	Triplex hybrid organic-inorganic with filled glass paper
370 to 399	Others ^a
400 to 499	Wet-laid paper containing inorganic fibres
400 to 459	Glass
460 to 499	Others ^a
500 to 599	Dry-laid non-woven containing organic fibres
500 to 519	100 % PET-based fibres
520 to 539	100 % aramid-based fibres ^a
540 to 599	Others ^a
600 to 999	Other constructions
^a Sections provided for future development of new specification sheets at present are void.	
The specification sheets developed for the time being are: 100, 101, 102, 110, 111, 112, 113, 114, 115, 302, 303, 312, 313, 315, 320, 330, 340, 350, 351, 360, 400, 401, 402, 403, 410, 411, 420, 421, 502, 503, 505, and are given below.	