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NSAI Standards

Irish Standard
I.S. EN 60819-3-4:2014

Non-cellulosic papers for electrical purposes -- Part 3: Specifications for individual materials -- Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60819-3-4

April 2014

ICS 29.035.10

Supersedes EN 60819-3-4:2001

English version

Non-cellulosic papers for electrical purposes - Part 3: Specifications for individual materials - Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles

(IEC 60819-3-4:2013)

Papiers non cellulosiques pour usages électriques -
Partie 3: Spécifications pour matériaux particuliers -
Feuille 4: Papiers en fibres aramide ne contenant pas plus de 50 % de particules de mica
(CEI 60819-3-4:2013)

Zellulosefreie Papiere für elektrotechnische Zwecke -
Teil 3: Bestimmungen für einzelne Materialien -
Blatt 4: Papier aus Aramidfaser mit einem Glimmeranteil von nicht mehr als 50 %
(IEC 60819-3-4:2013)

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Ref. No. EN 60819-3-4:2014 E

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Foreword

The text of document 15/689/CDV, future edition 2 of IEC 60819-3-4, prepared by IEC/TC 15 "Solid electrical insulating materials" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60819-3-4:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-10-16
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-01-16

This document supersedes EN 60819-3-4:2001.

EN 60819-3-4:2014 includes the following significant technical changes with respect to EN 60819-3-4:2001:

The document was updated including new thicknesses and relevant values as from Table 1.

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Endorsement notice

The text of the International Standard IEC 60819-3-4:2013 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 60819-3 (all sheets) NOTE Harmonized as EN 60819-3 (all sheets) (not modified).

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

Publication	Year	Title	EN/HD	Year
IEC 60819-1	-	Non-cellulosic papers for electrical purposes - Part 1: Definitions and general requirements	EN 60819-1	-
IEC 60819-2	2001	Non-cellulosic papers for electrical purposes - Part 2: Methods of test	EN 60819-2	2001

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IEC 60819-3-4

Edition 2.0 2013-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Non-cellulosic papers for electrical purposes – Part 3: Specifications for individual materials – Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles

Papiers non cellulosiques pour usages électriques – Partie 3: Spécifications pour matériaux particuliers – Feuille 4: Papier en fibre aramide ne contenant pas plus de 50 % de particules de mica

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IEC 60819-3-4

Edition 2.0 2013-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

NON-CELLULOSIC PAPERS FOR ELECTRICAL PURPOSES –

Part 3: Specifications for individual materials – Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles

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 60819-3-4 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This second edition cancels and replaces the first edition published in 2001. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: the document was updated including new thicknesses and relevant values as from Table 1.

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

CDV	Report on voting
15/689/CDV	15/706/RVC

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 in the IEC 60819 series, published under the general title *Non-cellulosic papers for electrical purposes*, 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.

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INTRODUCTION

This International Standard is one of a series which deals with non-cellulosic papers for electrical purposes.

The series consists of three parts:

Part 1: Definitions and general requirements (IEC 60819-1).

Part 2: Methods of test (IEC 60819-2).

Part 3: Specifications for individual materials (IEC 60819-3).

This standard is one of the sheets comprising Part 3:

Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles.

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NON-CELLULOSIC PAPERS FOR ELECTRICAL PURPOSES –

Part 3: Specifications for individual materials – Sheet 4: Aramid fibre paper containing not more than 50 % of mica particles

1 Scope

This sheet of IEC 60819-3 specifies requirements for two types of aramid fibre paper containing mica particles and designated as PAaM.

– type 1: calendered aramid paper containing mica particles;
– type 2: uncalendered aramid paper containing mica particles.

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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60819-1, *Non-cellulosic papers for electrical purposes – Part 1: Definitions and general requirements*

IEC 60819-2:2001, *Non-cellulosic papers for electrical purposes – Part 2: Methods of test*

3 Requirements

In addition to complying with the general requirements in IEC 60819-1, papers shall comply with the specific requirements appropriate to their type as given in the following list and in Table 1.

– The mica content of either type of paper shall be up to 50 % by mass.
– Thermal classification: based on long-term thermal ageing tests and the resulting Arrhenius graph, experience has shown that non-cellulose papers listed in this sheet may be suitable for use in electrical apparatus and shall have a relative temperature index (RTI) of at least 220.
– The moisture content of type 1 paper shall not exceed 10,0 %.
– The moisture content of type 2 paper shall not exceed 14,0 %.
– The dissipation factor measured in accordance with Clause 6 of IEC 60819-2:2001 shall not exceed 0,1. The permittivity for type 1 shall be 4,5 ± 0,5. The permittivity for type 2 shall be 3,0 ± 0,5.
– Apparent density shall be for the two types described:

  type 1: 1,10 g/cm^3 ± 15 %

  type 2: 0,4 g/cm^3 ± 15 %

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