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SIST EN 60216-5:2008

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60216-5

May 2008

ICS 19.020; 29.020; 29.035.01

Supersedes EN 60216-5:2003

English version

**Electrical insulating materials -
Thermal endurance properties -
Part 5: Determination of relative thermal endurance index (RTE)
of an insulating material
(IEC 60216-5:2008)**

Matériaux isolants électriques -
Propriétés d'endurance thermique -
Partie 5: Détermination de l'indice
d'endurance thermique relatif (RTE)
d'un matériau isolant
(CEI 60216-5:2008)

Elektroisolierstoffe -
Eigenschaften hinsichtlich des
thermischen Langzeitverhaltens -
Teil 5: Bestimmung des relativen
thermischen Lebensdauer-Indexes (RTE)
von Elektroisolierstoffen
(IEC 60216-5:2008)

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This European Standard was approved by CENELEC on 2008-05-01. 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 112/89/FDIS, future edition 3 of IEC 60216-5, prepared by IEC TC 112, Evaluation and qualification of electrical insulating materials and systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60216-5 on 2008-05-01.

This European Standard supersedes EN 60216-5:2003.

EN 60216-5:2008 clarifies and corrects a few items and adds an Annex D which provides criteria for the selection of the reference (or reference EIM). EN 60216-5:2008 provides instructions for deriving a provisional estimate of the temperature up to which a material may give satisfactory performance in an application (by comparative thermal ageing with a material of known performance).

This standard is to be used in conjunction with EN 60216-1, EN 60216-2 and EN 60216-3.

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) 2009-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-05-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60216-5:2008 was approved by CENELEC as a European Standard without any modification.
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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60085 NOTE Harmonized as EN 60085:2008 (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 60216-1	2001	Electrical insulating materials - Properties of thermal endurance - Part 1: Ageing procedures and evaluation of test results	EN 60216-1	2001
IEC 60216-2	- ¹⁾	Electrical insulating materials - Thermal endurance properties - Part 2: Determination of thermal endurance properties of electrical insulating materials - Choice of test criteria	EN 60216-2	2005 ²⁾
IEC 60216-3	2006	Electrical insulating materials - Thermal endurance properties - Part 3: Instructions for calculating thermal endurance characteristics	EN 60216-3	2006

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¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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IEC 60216-5

Edition 3.0 2008-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electrical insulating materials – Thermal endurance properties –
Part 5: Determination of relative thermal endurance index (RTE) of an insulating
material**

**Matériaux isolants électriques – Propriétés d'endurance thermique –
Partie 5: Détermination de l'indice d'endurance thermique relatif (RTE) d'un
matériau isolant**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL INSULATING MATERIALS –
THERMAL ENDURANCE PROPERTIES –**
**Part 5: Determination of relative thermal endurance
index (RTE) of an insulating material**

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 60216-5 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This third edition cancels and replaces the second edition, published in 2003, and constitutes a technical revision.

This third edition clarifies and corrects a few items and adds an Annex D which provides criteria for the selection of the reference (or reference EIM). The third edition provides instructions for deriving a provisional estimate of the temperature up to which a material may give satisfactory performance in an application (by comparative thermal ageing with a material of known performance).

This standard is to be read in conjunction with IEC 60216-1, IEC 60216-2 and IEC 60216-3.

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

FDIS	Report on voting
112/89/FDIS	112/94/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.

The list of all the parts of the IEC 60216 series, under the general title *Electrical insulating materials – Thermal endurance properties*, 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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ELECTRICAL INSULATING MATERIALS – THERMAL ENDURANCE PROPERTIES –

Part 5: Determination of relative thermal endurance index (RTE) of an insulating material

1 Scope

This part of IEC 60216 specifies the experimental and calculation procedures to be used for deriving the relative thermal endurance index of a material from experimental data obtained in accordance with the instructions of IEC 60216-1 and IEC 60216-2. The calculation procedures are supplementary to those of IEC 60216-3.

Guidance is also given for assessment of thermal ageing after a single fixed time and temperature, without extrapolation.

The experimental data may in principle be obtained using destructive, non-destructive or proof tests, although destructive tests have been much more extensively employed. Data obtained from non-destructive or proof tests may be “censored”, in that measurement of times taken to reach the endpoint may have been terminated at some point after the median time but before all specimens have reached end-point (see IEC 60216-1).

Guidance is given for preliminary assignment of a thermal class for an insulating material, based upon the thermal ageing performance.

The calculation procedures of this standard also apply to the determination of the thermal class of an electrical insulation system when the thermal stress is the prevailing ageing factor.

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 60216-1:2001, *Electrical insulating materials – Properties of thermal endurance – Part 1: Ageing procedures and evaluation of test results*

IEC 60216-2, *Electrical insulating materials – Thermal endurance properties – Part 2: Determination of thermal endurance properties of electrical insulating materials – Choice of test criteria*

IEC 60216-3:2006, *Electrical insulating materials – Thermal endurance properties – Part 3: Instructions for calculating thermal endurance characteristics*

3 Terms, definitions, symbols, units and abbreviations

For the purposes of this document, the following terms, definitions, symbols, units and abbreviated terms apply.