

INTERNATIONAL STANDARD



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



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Part 5: Determination of relative temperature index (RTI) of an insulating material**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL INSULATING MATERIALS –
THERMAL ENDURANCE PROPERTIES –****Part 5: Determination of ~~relative thermal endurance~~
~~index (RTE)~~ relative temperature index (RTI) **1** of an insulating material**

FOREWORD

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This commented version (CMV) of the official standard IEC 60216-5:2022 edition 4.0 allows the user to identify the changes made to the previous IEC 60216-5:2008 edition 3.0. Furthermore, comments from IEC TC 112 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

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

This fourth edition cancels and replaces the third edition published in 2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Annex C “Computer program” has been completely reworked;
- b) in 3.1, the terms “ATE” and “RTE” were replaced by “ATI” and “RTI” to emphasize their reference to an electrical insulating material (EIM).

This standard is to be read in conjunction with IEC 60216-1:2013, IEC 60216-2:2005 and IEC 60216-3:2021.

The text of this International Standard is based on the following documents:

Draft	Report on voting
112/532/FDIS	112/588/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 60216 series, published 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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document 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)~~ relative temperature index (RTI) 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~~ temperature 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~~ can **2** 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~~ can **3** be “censored”, in that measurement of times taken to reach the endpoint ~~may~~ **4** 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 electrical insulating material (EIM) **5**, based upon the thermal ageing performance.

While the thermal classification of an EIM is not directly related to the thermal classification of an electrical insulation system (EIS), the thermal classification of an EIS follows the same concepts as presented in this part of the 60216 series. **6** The calculation procedures of this standard apply to the determination of the thermal class of an EIS when the thermal stress is the prevailing ageing factor.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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:~~2004~~2013 **7**, *Electrical insulating materials – Thermal endurance properties – Part 1: Ageing procedures and evaluation of test results*

IEC 60216-2:2005 **8**, *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~~2021 **9**, *Electrical insulating materials – Thermal endurance properties – Part 3: Instructions for calculating thermal endurance characteristics*