SLOVENSKI STANDARD

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Elektriļni izolacijski materiali - Lastnosti v zvezi s toplotno vzdrģljivostjo - 4-1. del: Peļi za staranje - Enoprekatne peļi (IEC 60216-4-1:2006)

Electrical insulating materials - Thermal endurance properties - Part 4-1: Ageing ovens - Single-chamber ovens (IEC 60216-4-1:2006)

Elektroisolierstoffe - Eigenschaften hinsichtlich des thermischen Langzeitverhaltens - Teil 4-1: Wärmeschränke für die Warmlagerung - Einzelkammerwärmeschränke (IEC 60216-4-1:2006)

Matériaux isolants électriques - Propriétés d'endurance thermique - Partie 4-1: Etuves de vieillissement - Etuves à une chambre (CEI 60216-4-1:2006)

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Electrical insulating materials - Thermal endurance properties Part 4-1: Ageing ovens - Single-chamber ovens

(IEC 60216-4-1:2006)

Matériaux isolants électriques - Propriétés d'endurance thermique Partie 4-1: Etuves de vieillissement - Etuves à une chambre (CEI 60216-4-1:2006)

Elektroisolierstoffe - Eigenschaften hinsichtlich des thermischen Langzeitverhaltens Teil 4-1: Wärmeschränke für die Warmlagerung - Einzelkammerwärmeschränke (IEC 60216-4-1:2006)

This European Standard was approved by CENELEC on 2006-03-01. 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, 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

Ref. No. EN 60216-4-1:2006 E

Foreword

The text of document 112/16/FDIS, future edition 4 of IEC 60216-4-1, prepared by subcommittee 15E: Methods of test, of IEC technical committee 15: Insulating materials, which has now been merged with IEC technical committee 98: Electrical insulation systems into IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems (provisional title), was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60216-4-1 on 2006-03-01.

This European Standard supersedes HD 611.4.1 S1:1992 .

The main changes with regard to HD 611.4.1 S1:1992 is the adaptation to the technical content and the editorial form of EN 60216-4-2 and EN 60216-4-3. In addition, errors and omissions in IEC 60216-4-1:1990 have been corrected.

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)	2006-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60216-4-1:2006 was approved by CENELEC as a European Standard without any modification.

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

IEC 60216-1	NOTE	Harmonized as EN 60216-1:2001 (not modified).
IEC 60216-3	NOTE	Harmonized as EN 60216-3:2002 (not modified).
IEC 60216-4-2	NOTE	Harmonized as EN 60216-4-2:2000 (not modified).
IEC 60216-4-3	NOTE	Harmonized as EN 60216-4-3:2000 (not modified).
IEC 60216-5	NOTE	Harmonized as EN 60216-5:2003 (not modified).
IEC 60216-6	NOTE	Harmonized as EN 60216-6:2004 (not modified).
IEC 60811-1-2	NOTE	Harmonized as EN 60811-1-2:1995 (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.

Publication	Year	Title	EN/HD	Year
IEC 60335 (mod)	Series	Household and similar electrical appliances - Safety	EN 60335	Series
ISO/IEC 17025	2005	General requirements for the competence of testing and calibration laboratories	EN ISO/IEC 17025	2005

INTERNATIONAL STANDARD

IEC 60216-4-1

Fourth edition
2006-01

Electrical insulating materials – Thermal endurance properties –

Part 4-1: Ageing ovens – Single-chamber ovens

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL INSULATING MATERIALS – THERMAL ENDURANCE PROPERTIES –

Part 4-1: Ageing ovens – Single-chamber ovens

FOREWORD

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International Standard IEC 60216-4-1 was prepared by subcommittee 15E: Methods of test, of IEC technical committee 15: Insulating materials, which has now been merged with IEC technical committee 98: Electrical insulation systems into IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems (provisional title).

This fourth edition of IEC 60216-4-1 cancels and replaces the third edition, published in 1990, and constitutes a technical revision.

The main changes with regard to the previous edition is that this edition adapts IEC 60216-4-1 to the technical content and the editorial form of IEC 60216-4-2 and IEC 60216-4-3. In addition, errors and omissions in the third edition have been corrected.

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

FDIS	Report on voting
112/16/FDIS	112/23/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.

IEC 60216, under the general title *Electrical insulating materials – Thermal endurance properties*, is composed of several parts:

Part 1: Ageing procedures and evaluation of test results

Part 2: Determination of thermal endurance properties of electrical insulating materials – Choice of test criteria[1]

Part 3: Instructions for calculating thermal endurance characteristics

Part 4-1: Ageing ovens – Single-chamber ovens

Part 4-2: Ageing ovens – Precision ovens for use up to 300 °C

Part 4-3: Ageing ovens – Multi-chamber ovens

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

Part 6: Determination of thermal endurance indices (TI and RTE) of an insulating material using the fixed time frame method

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.

A bilingual version of this publication may be issued at a later date.

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1 For revisions and new parts, see the current catalogue of IEC publications for an up-to-date list.

ELECTRICAL INSULATING MATERIALS – THERMAL ENDURANCE PROPERTIES –

Part 4-1: Ageing ovens – Single-chamber ovens

1 Scope

This part of IEC 60216 covers minimum requirements for ventilated and electrically heated single-chamber ovens, with or without forced gas circulation, for thermal endurance evaluation of electrical insulation. It covers ovens designed to operate over all or part of the temperature range from 20 °C above ambient to 500 °C. It gives acceptance tests and in-service monitoring tests for these ageing ovens.

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.

ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*

IEC 60335 (all parts), *Household and similar electrical appliances – Safety*

3 Terms and definitions

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

3.1
rate of ventilation
N
number of air changes per hour in the exposure chamber at room temperature

3.2
exposure volume
that central part of the exposure chamber that meets the requirements for temperature fluctuation, temperature difference and temperature variation

3.3
exposure temperature
T
temperature selected for ageing test specimens to obtain data for the determination of effects of temperature

NOTE See also “global exposure temperature”.

3.4
temperature fluctuation
δT_1
maximum change in temperature at one point in the exposure volume over a period of time