SLOVENSKI STANDARD
SIST EN IEC 60172:2021

01-marec-2021

Nadomešča:
SIST EN 60172:2015

Preskusni postopek za ugotavljanje temperaturnega indeksa emajlirane in s trakom ovite žice za navitja (IEC 60172:2020)

Test procedure for the determination of the temperature index of enamelled and tape wrapped winding wires (IEC 60172:2020)

Prüfverfahren zur Bestimmung des Temperaturindex von Lackdrähten und bandumwickelten Drähten (IEC 60172:2020)

Méthode d'essai pour la détermination de l'indice de température des fils de bobinage émaillés et enveloppés de ruban (IEC 60172:2020)

Ta slovenski standard je istoveten z: **EN IEC 60172:2021**

ICS:

17.200.01	Termodinamika na splošno	Thermodynamics in general
29.060.10	Žice	Wires

SIST EN IEC 60172:2021 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60172

January 2021

ICS 29.060.10

Supersedes EN 60172:2015 and all of its amendments and corrigenda (if any)

English Version

Test procedure for the determination of the temperature index of enamelled and tape wrapped winding wires (IEC 60172:2020)

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(IEC 60172:2020)

This European Standard was approved by CENELEC on 2020-12-28. 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.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 60172:2021 E

European foreword

The text of document 55/1876/FDIS, future edition 5 of IEC 60172, prepared by IEC/TC 55 "Winding wires" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60172:2021.

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) 2021-09-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-12-28

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Endorsement notice

The text of the International Standard IEC 60172:2020 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 60317 (series)	NOTE	Harmonized as EN 60317 (series)
IEC 60455-3-5	NOTE	Harmonized as EN 60455-3-5
IEC 60464-3-2	NOTE	Harmonized as EN 60464-3-2

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60216-1	-	Electrical insulating materials - Thermal endurance properties - Part 1: Ageing procedures and evaluation of test results	EN 60216-1	-
IEC 60216-3	-	Electrical insulating materials - Thermal endurance properties - Part 3: Instructions for calculating thermal endurance characteristics	-	-

IEC 60172

Edition 5.0 2020-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Test procedure for the determination of the temperature index of enamelled and tape wrapped winding wires

Méthode d'essai pour la détermination de l'indice de température des fils de bobinage émaillés et enveloppés de ruban

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.060.10

ISBN 978-2-8322-9086-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TEST PROCEDURE FOR THE DETERMINATION OF THE TEMPERATURE INDEX OF ENAMELLED AND TAPE WRAPPED WINDING WIRES

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 60172 has been prepared by IEC Technical Committee 55: Winding wires.

This fifth edition cancels and replaces the fourth edition published in 2015. This edition constitutes a technical revision.

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

– revision of 3.1, definition of thermal index;

– revision of 3.3, time to failure;

– revisions to 5.1.1 for clarity and to reduce the range wire size range to which the test applies;

– revisions to 5.1.2 for tape wrapped round and enamelled or tape wrapped rectangular wire for clarity;

– revision to Clause 9 to add the correlation coefficient, r to the report.

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

FDIS	Report on voting
55/1876/FDIS	55/1893/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

TEST PROCEDURE FOR THE DETERMINATION OF THE TEMPERATURE INDEX OF ENAMELLED AND TAPE WRAPPED WINDING WIRES

1 Scope

This International Standard specifies, in accordance with the provisions of IEC 60216-1, a method for evaluating the temperature index of enamelled wire, varnished or unvarnished with an impregnating agent, and of tape wrapped round and rectangular wire, in air at atmospheric pressure by periodically monitoring changes in response to AC proof voltage tests. This procedure does not apply to fibre-insulated wire or wire covered with tapes containing inorganic fibres.

NOTE The data obtained according to this test procedure provide the designer and development engineer with information for the selection of winding wire for further evaluation of insulation systems and equipment tests.

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, *Electrical insulating materials – Thermal endurance properties – Part 1: Ageing procedures and evaluation of test results*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
temperature index
TI
number which permits comparison of the temperature/time characteristics of an electrical insulating material, or a simple combination of materials, based on the temperature in degrees Celsius which is obtained by extrapolating the Arrhenius plot of life versus temperature to a lifetime of 20 000 h

Note 1 to entry: In case of insulation systems, the temperature index may be derived from known service experience or from a known comparative functional evaluation of an evaluated and established reference insulation system as basis.

[SOURCE: IEC 60050-212:2010, 212-12-11] modified by merging Note 1 into the definition, and to specify a lifetime of 20 000 h.]