SLOVENSKI STANDARD
SIST EN IEC 62631-3-4:2019

01-julij-2019

Dielektrične in uporovne lastnosti trdnih izolacijskih materialov - 3-4. del: Ugotavljanje uporovnih lastnosti (metode z enosmernim tokom) - Prehodna upornost in specifična prehodna upornost pri povišanih temperaturah (IEC 62631-3-4:2019)

Dielectric and resistive properties of solid insulating materials - Part 3-4: Determination of resistive properties (DC methods) - Volume resistance and volume resistivity at elevated temperatures (IEC 62631-3-4:2019)

Dielektrische und resistive Eigenschaften fester Isolierstoffe - Teil 3-4: Bestimmung resistiver Eigenschaften (Gleichspannungsverfahren) - Durchgangswiderstand und spezifischer Durchgangswiderstand bei erhöhten Temperaturen (IEC 62631-3-4:2019)

Propriétés diélectriques et résistives des matériaux isolants solides - Partie 3-4: Détermination des propriétés résistives (méthodes en courant continu) - Résistance transversale et résistivité transversale aux températures élevées (IEC 62631-3-4:2019)

Ta slovenski standard je istoveten z: **EN IEC 62631-3-4:2019**

ICS:

29.035.01	Izolacijski materiali na splošno	Insulating materials in general

SIST EN IEC 62631-3-4:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62631-3-4

May 2019

ICS 17.220.99; 29.035.01

English Version

Dielectric and resistive properties of solid insulating materials - Part 3-4: Determination of resistive properties (DC methods) - Volume resistance and volume resistivity at elevated temperatures (IEC 62631-3-4:2019)

Propriétés diélectriques et résistives des matériaux isolants solides - Partie 3-4: Détermination des propriétés résistives (méthodes en courant continu) - Résistance transversale et résistivité transversale aux températures élevées (IEC 62631-3-4:2019)

Dielektrische und resistive Eigenschaften fester Isolierstoffe - Teil 3-4: Bestimmung resistiver Eigenschaften (Gleichspannungsverfahren) - Durchgangswiderstand und spezifischer Durchgangswiderstand bei erhöhten Temperaturen (IEC 62631-3-4:2019)

This European Standard was approved by CENELEC on 2019-05-02. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

European foreword

The text of document 112/406/CDV, future edition 1 of IEC 62631-3-4, prepared by IEC/TC 112 "Evaluation and qualification of electrical insulating materials and systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62631-3-4:2019.

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) 2020-02-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-05-02

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62631-3-4:2019 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 62631-1	NOTE	Harmonized as EN 62631-1

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 60212	2010	Standard conditions for use prior to and during the testing of solid electrical insulating materials	EN 60212	2011
IEC 62631-3-1	-	Dielectric and resistive properties of solid insulating materials - Part 3-1: Determination of resistive properties (DC methods) - Volume resistance and volume resistivity - General method	EN 62631-3-1	-

IEC 62631-3-4

Edition 1.0 2019-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Dielectric and resistive properties of solid insulating materials – Part 3-4: Determination of resistive properties (DC methods) – Volume resistance and volume resistivity at elevated temperatures

Propriétés diélectriques et résistives des matériaux isolants solides – Partie 3-4: Détermination des propriétés résistives (méthodes en courant continu) – Résistance transversale et résistivité transversale aux températures élevées

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 17.220.99; 29.035.01

ISBN 978-2-8322-6688-5

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

DIELECTRIC AND RESISTIVE PROPERTIES OF SOLID INSULATING MATERIALS –

Part 3-4: Determination of resistive properties (DC methods) – Volume resistance and volume resistivity at elevated temperatures

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
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 62631-3-4 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This edition of IEC 62631-3-4 cancels and replaces IEC 60345 "Method of test for electrical resistance and resistivity of insulating materials at elevated temperatures", published in 1971. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 60345:

a) The revised standard becomes part of the series IEC 62631-3-x. Title of the standard is changed and adapted to the series as Part 3-4.
b) Clauses 2 "Normative references", 3 "Terms and definitions", and 4 "Significance" are added.

c) Subclauses 5.2 "Power supply, Voltage", 5.3.1.2 "Number of test specimens" and 5.3.1.3 "Conditioning and pre-treatment of test specimens" are added.

d) In 5.3.5 "Special precautions during measurements", errors analysis in the measurement of current are modified, and aligned with IEC 62631-3-1.

e) In 6.2 "Increasing the temperature by steps (method B)", the method for more than one specimen is removed.

f) The standard atmospheric conditions for testing and conditioning, especially the temperature, are replaced according to IEC 60212.

g) The circuit diagram of test apparatus is modified, and the structure diagram and pictures of test apparatus are added in Annex A.

h) The orders of part clauses are adjusted.

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

CDV	Report on voting
112/406/CDV	112/445/RVC

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.

A list of all parts in the IEC 62631 series, published under the general title *Dielectric and resistive properties of solid insulating materials*, 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 "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.

DIELECTRIC AND RESISTIVE PROPERTIES OF SOLID INSULATING MATERIALS –

Part 3-4: Determination of resistive properties (DC methods) – Volume resistance and volume resistivity at elevated temperatures

1 Scope

This part of IEC 62631 covers procedures for the determination of insulation resistance and volume resistivity of insulating materials by applying DC-voltage and temperatures up to 800 °C. The typical application materials include high temperature mica plate and alumina ceramics.

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 60212:2010, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 62631-3-1, *Dielectric and resistive properties of solid insulating materials – Part 3-1: Determination of resistive properties (DC methods) – Volume resistance and volume resistivity – General method*

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
heating chamber
device which is used for supplying an elevated temperature to the specimen

3.2
volume resistance
part of the insulation resistance which is due to conduction through the volume

Note 1 to entry: Volume resistance is expressed in Ω.

3.3
volume resistivity
volume resistance of a material related to its volume

Note 1 to entry: Volume resistivity is expressed in Ωm.