

SLOVENSKI STANDARD
SIST EN 62631-3-3:2016**01-maj-2016****Nadomešča:**
SIST HD 568 S1:1998

**Dielektrične in uporovne lastnosti trdnih izolacijskih materialov - 3-3. del:
Ugotavljanje uporovnih lastnosti (metode z enosmernim tokom) - Izolacijska
upornost**Dielectric and resistive properties of solid insulating materials - Part 3-3: Determination of
resistive properties (DC Methods) - Insulation resistance**iTeh STANDARD PREVIEW**
(standards.iteh.ai)Propriétés diélectriques et résistives des matériaux isolants solides - Partie 3-3:
Détermination des propriétés résistives (Méthodes en courant continu) - Résistance
d'isolement**Ta slovenski standard je istoveten z: EN 62631-3-3:2016****ICS:**29.035.01 Izolacijski materiali na splošno Insulating materials in
general**SIST EN 62631-3-3:2016****en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 62631-3-3:2016](#)

<https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016>

EUROPEAN STANDARD

EN 62631-3-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 17.220.99; 29.035.01

Supersedes HD 568 S1:1990

English Version

**Dielectric and resistive properties of solid insulating materials -
Part 3-3: Determination of resistive properties (DC Methods) -
Insulation resistance
(IEC 62631-3-3:2015)**

Propriétés diélectriques et résistives des matériaux isolants
solides - Partie 3-3: Détermination des propriétés résistives
(Méthodes en courant continu) - Résistance d'isolement
(IEC 62631-3-3:2015)

Dielektrische und resistive Eigenschaften fester Isolierstoffe
- Teil 3-3: Bestimmung resistiver Eigenschaften
(Gleichspannungsmethoden) - Isolationswiderstand
(IEC 62631-3-3:2015)

This European Standard was approved by CENELEC on 2016-01-08. 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.

<https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016>

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, 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: Avenue Marnix 17, B-1000 Brussels

EN 62631-3-3:2016**European foreword**

The text of document 112/341/FDIS, future edition 1 of IEC 62631-3-3, 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 62631-3-3:2016.

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) 2016-10-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-01-08

This document supersedes HD 568 S1:1990.

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

Endorsement notice

The text of the International Standard IEC 62631-3-3:2015 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 62631-3-1 | NOTE Harmonized as EN 62631-3-1 ¹⁾ .
https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5cc0553b78/sist/b530e400-9890-4ff1-b523-aa5cc0553b78/iec-62631-3-2015 |
| IEC 62631-3-2 | NOTE Harmonized as EN 62631-3-2. |

1) To be published.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60212	-	Standard conditions for use prior to and during the testing of solid electrical insulating materials	EN 60212	-
IEC 60216-4-1	-	Electrical insulating materials - Thermal endurance properties -- Part 4-1: Ageing ovens - Single-chamber ovens	EN 60216-4-1	-
ISO 2339	-	Hand taper pin reamers	EN 22339	-
ISO 3465	-		-	-

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 62631-3-3:2016](https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016)

<https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 62631-3-3:2016](#)

<https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016>



IEC 62631-3-3

Edition 1.0 2015-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Dielectric and resistive properties of solid insulating materials –
Part 3-3: Determination of resistive properties (DC methods) – Insulation
resistance**

**Propriétés diélectriques et résistives des matériaux isolants solides –
Partie 3-3: Détermination des propriétés résistives (méthodes en courant
continu) – Résistance d'isolement**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.220.99; 29.035.01

ISBN 978-2-8322-3024-4

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Significance	8
5 Method of test	9
5.1 General	9
5.2 Test conditions	9
5.2.1 Voltage	9
5.2.2 Electrode material	9
5.3 Equipment	10
5.3.1 General	10
5.3.2 Accuracy	10
5.3.3 Voltage source	10
5.4 Calibration	10
5.5 Test specimen	11
5.5.1 Dimensions of test specimen	11
5.5.2 Test specimen for insulating resistance between tapered pin electrodes	11
5.5.3 Test specimen for insulating resistance between bar electrodes	11
5.5.4 Manufacturing of test specimen	11
5.5.5 Number of test specimen	12
5.5.6 Conditioning and pre-treatment of test specimen	12
5.6 Electrode application	12
5.6.1 Application of tapered pin electrodes	12
5.6.2 Application of bar electrodes	13
5.7 Test procedure	14
5.8 Evaluation	14
5.8.1 Insulating resistance between tapered pin electrodes	14
5.8.2 Insulating resistance between bar electrodes	14
6 Test report	14
7 Repeatability and reproducibility	15
Bibliography	16
Figure 1 – Pin electrode arrangements	6
Figure 2 – Bar electrode arrangement	7
Figure 3 – Specimen for measurement of the insulation resistance R_I between plugs	13
Table 1 – Composition of electrode steel	10

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DIELECTRIC AND RESISTIVE PROPERTIES
OF SOLID INSULATING MATERIALS –****Part 3-3: Determination of resistive properties (DC methods) –
Insulation resistance**

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 62631-3-3 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This first edition cancels and replaces the first edition of IEC 60167, published in 1964, and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the first edition of IEC 60167:

- a) IEC 60167 has been completely revised, both editorially and technically, and incorporated into the new IEC 62631 series;
- b) test methods have been updated to current day state of the art.

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

FDIS	Report on voting
112/341/FDIS	112/352/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.

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 publication will remain unchanged until the stability date indicated on the IEC website 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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 62631-3-3:2016](#)

<https://standards.iteh.ai/catalog/standards/sist/b530e400-9890-4ff1-b523-aa5edc0553b0/sist-en-62631-3-3-2016>

DIELECTRIC AND RESISTIVE PROPERTIES OF SOLID INSULATING MATERIALS –

Part 3-3: Determination of resistive properties (DC methods) – Insulation resistance

1 Scope

This part of IEC 62631 covers methods of test for the determination of the insulation resistance of electrical insulating materials or insulating systems by applying DC voltage.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC 60216-4-1, *Electrical insulating materials – Thermal endurance properties – Part 4-1: Ageing ovens – Single-chamber ovens*

ISO 2339, *Taper pins, unhardened*

ISO 3465, *Hand taper pin reamers*

3 Terms and definitions

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

3.1

electrode arrangement

arrangement of two electrically conductive bodies in contact with the surface and the bulk volume of a test specimen

3.1.1

tapered pin electrodes

electrode arrangement using tapered pin electrodes

Note 1 to entry: See Figure 1.

3.1.2

bar electrodes

electrode arrangement using bar electrodes

Note 1 to entry: See Figure 2.