

საქართველოს სტანდარტი

ფეთქებადსაშიში გარემო-ნაწილი 32-2: ელექტროსტატიკური
საშიშროება- გამოცდები (იეკ 60079-32-2:2015)

საქართველოს სტანდარტებისა და
მეტროლოგიის ეროვნული სააგენტო
თბილისი

სსტ ენ 60079-32-2:2015/2017

საინფორმაციო მონაცემები

1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს 2017 წლის 28 სექტემბრის № 65 და 2017 წლის 27 ივნისის № 47 განკარგულებებით

2 მიღებულია თავფურცლის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 60079-32-2:2015 „ ფეთქებადსაშიში გარემო-ნაწილი 32-2: ელექტროსტატიკური საშიშროება-გამოცდები იეკ 60079-32-2:2015”

3 პირველად

4 რეგისტრირებულია საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2017 წლის 28 სექტემბერი №268-1.3-011739

აკრძალულია ამ სტანდარტის გადაცემა მესამე პირებისათვის ან/და მისი სხვა ფორმით გავრცელება

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

English Version

**Explosive atmospheres - Part 32-2: Electrostatics hazards -
Tests
(IEC 60079-32-2:2015)**

Atmosphères explosives - Partie 32-2: Dangers
électrostatiques - Essais
(IEC 60079-32-2:2015)

Explosionsgefährdete Bereiche - Teil 32-2: Elektrostatische
Gefährdungen - Prüfverfahren
(IEC 60079-32-2:2015)

This European Standard was approved by CENELEC on 2015-04-01. 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 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, 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

Foreword

The text of document 31/1164/FDIS, future edition 1 of IEC 60079-32-2, prepared by IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-32-2:2015.

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) 2016-01-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-04-01

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 60079-32-2:2015 was approved by CENELEC as a European Standard without any modification.

IEC 60079-1	NOTE	Harmonized as EN 60079-1.
IEC 60079-7	NOTE	Harmonized as EN 60079-7.
IEC 60079-10-1	NOTE	Harmonized as EN 60079-10-1.
IEC 60079-10-2	NOTE	Harmonized as EN 60079-10-2.
IEC 60167	NOTE	Harmonized as HD 568 S1.
IEC 61340-4-1	NOTE	Harmonized as EN 61340-4-1.
IEC 61340-4-3	NOTE	Harmonized as EN 61340-4-3.
IEC 61340-4-5	NOTE	Harmonized as EN 61340-4-5.
ISO 284	NOTE	Harmonized as EN ISO 284.
ISO 8031	NOTE	Harmonized as EN ISO 8031.
ISO 8330	NOTE	Harmonized as EN ISO 8330.

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 60079-0	-	Explosive atmospheres -- Part 0: Equipment - General requirements	EN 60079-0	-
-	-		+A11	-
IEC 60093	-	Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials	HD 429 S1	-
IEC 60243-1	-	Electric strength of insulating materials - Test methods -- Part 1: Tests at power frequencies	EN 60243-1	-
IEC 60243-2	-	Electric strength of insulating materials - Test methods -- Part 2: Additional requirements for tests using direct voltage	EN 60243-2	-
IEC 60247	-	Insulating liquids - Measurement of relative permittivity, dielectric dissipation factor (tan d) and d.c. resistivity	EN 60247	-
IEC 61340-2-1	-	Electrostatics -- Part 2-1: Measurement methods - Ability of materials and products to dissipate static electric charge	EN 61340-2-1	-
IEC 61340-2-3	-	Electrostatics -- Part 2-3: Methods of test for determining the resistance and resistivity of solid planar materials used to avoid electrostatic charge accumulation	EN 61340-2-3	-
IEC 61340-4-4	-	Electrostatics - Part 4-4: Standard test methods for specific applications - Electrostatic classification of flexible intermediate bulk containers (FIBC)	EN 61340-4-4	-
ISO 14309	-	Rubber, vulcanized or thermoplastic - Determination of volume and/or surface resistivity	-	-
IEC/TS 60079-32-1	-	Explosive atmospheres - Part 32-1: Electrostatic hazards, guidance	CLC/TR 60079-32-1	-
IEC/TS 61241-2-2	-	Electrical apparatus for use in the presence of combustible dust -- Part 2: Test methods -- Section 2: Method for determining the electrical resistivity of dust in layers	EN 61241-2-2	-
ASTM E582	-	Standard test method for minimum ignition energy and quenching distance in gaseous mixtures	-	-
EN 1081	-	Resilient floor coverings - Determination of the electrical resistance	-	-
EN 1149-3	-	Protective clothing - Electrostatic properties - Part 3: Test methods for measurement of charge decay	-	-

საინფორმაციო ნაწილი. სრული ტექსტის სახანაგად შეიძინეთ სტანდარტი.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Explosive atmospheres –
Part 32-2: Electrostatics hazards – Tests**

**Atmosphères explosives –
Partie 32-2: Dangers électrostatiques – Essais**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 15 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

Plus de 60 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.



IEC 60079-32-2

Edition 1.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Explosive atmospheres –
Part 32-2: Electrostatics hazards – Tests**

**Atmosphères explosives –
Partie 32-2: Dangers électrostatiques – Essais**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.260.20

ISBN 978-2-8322-2276-8

**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..... 5

1 Scope.....7

2 Normative references7

3 Terms and definitions8

4 Test methods..... 10

 4.1 General..... 10

 4.2 Surface resistance 11

 4.2.1 General 11

 4.2.2 Principle 12

 4.2.3 Apparatus 12

 4.2.4 Test sample..... 13

 4.2.5 Procedure..... 13

 4.2.6 Acceptance criteria 14

 4.2.7 Test report..... 14

 4.3 Surface resistivity 14

 4.4 Volume resistivity..... 14

 4.5 Leakage resistance..... 15

 4.5.1 General 15

 4.5.2 Principle 15

 4.5.3 Apparatus 15

 4.5.4 Test sample..... 15

 4.5.5 Procedure..... 16

 4.5.6 Acceptance criteria 16

 4.5.7 Test report..... 16

 4.6 In-use testing of footwear..... 16

 4.6.1 General 16

 4.6.2 Principle 16

 4.6.3 Apparatus 17

 4.6.4 Procedure..... 17

 4.6.5 Acceptance criteria 17

 4.6.6 Test report..... 17

 4.7 In-use testing of gloves 17

 4.7.1 General 17

 4.7.2 Principle 18

 4.7.3 Apparatus 18

 4.7.4 Procedure..... 18

 4.7.5 Acceptance criteria 18

 4.7.6 Test report..... 18

 4.8 Powder resistivity..... 18

 4.8.1 General 18

 4.8.2 Principle 19

 4.8.3 Apparatus 19

 4.8.4 Procedure..... 20

 4.8.5 Acceptance criteria 20

 4.8.6 Test report..... 20

 4.9 Liquid conductivity 21

4.9.1	General	21
4.9.2	Principle	21
4.9.3	Apparatus	21
4.9.4	Procedure	22
4.9.5	Acceptance criteria	23
4.9.6	Test report	23
4.10	Capacitance	23
4.10.1	General	23
4.10.2	Principle	24
4.10.3	Apparatus	24
4.10.4	Test sample	24
4.10.5	Procedure for moveable items	24
4.10.6	Procedure for installed items	25
4.10.7	Acceptance criteria	25
4.10.8	Test report	25
4.11	Transferred charge	25
4.11.1	General	25
4.11.2	Principle	26
4.11.3	Apparatus	26
4.11.4	Test sample	27
4.11.5	Procedure	27
4.11.6	Acceptance criteria	28
4.11.7	Test report	28
4.12	Ignition test	29
4.12.1	General	29
4.12.2	Apparatus	29
4.12.3	Procedure	32
4.12.4	Acceptance criteria	32
4.12.5	Test report	32
4.13	Measuring of charge decay	33
4.13.1	General	33
4.13.2	Principle	33
4.13.3	Apparatus	33
4.13.4	Test sample	34
4.13.5	Procedure	34
4.13.6	Acceptance criteria	35
4.13.7	Test report	35
4.14	Breakdown voltage	35
4.14.1	General	35
4.14.2	Principle	35
4.14.3	Apparatus	35
4.14.4	Test procedure	36
4.14.5	Acceptance criteria	37
4.14.6	Test report	37
	Bibliography	38

Figure 1 – Test sample with applied electrodes (dimensions in mm) 12

Figure 2 – Measuring cell for powder resistivity..... 19

Figure 3 – Measuring cell for liquid conductivity 22

Figure 4 – Ignition probe 31

Figure 5 – Perforated plate of ignition probe 32

Figure 6 – Example of an arrangement for measurement of charge decay 34

Figure 7 – Electrodes for measuring breakdown voltage of sheets 36

Table 1 – Volume concentrations of flammable test gas mixtures 30

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.