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Fire hazard testing - Part 6-2: Smoke obscuration - Summary and relevance of test methods

Prüfungen zur Beurteilung der Brandgefahr - Teil 6-2: Sichtminderung durch Rauch - Zusammenfassung und Anwendbarkeit von Prüfverfahren

Essais relatifs aux risques du feu - Partie 6-2: Opacité des fumées - Résumé et pertinence des méthodes d'essai

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**Fire hazard testing -
Part 6-2: Smoke obscuration -
Summary and relevance of test methods
(IEC 60695-6-2:2011)**

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Zusammenfassung und Anwendbarkeit
von Prüfverfahren
(IEC 60695-6-2:2011)

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 89/1057/FDIS, future edition 1 of IEC 60695-6-2, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-6-2:2011.

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) 2012-06-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-09-29

This standard is to be used in conjunction with EN 60695-6-1.

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 60695-6-2:2011 was approved by CENELEC as a European Standard without any modification. (standards.iteh.ai)

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

IEC 60332-3-10	NOTE	Harmonized as EN 60332-3-10.
IEC 61034-1	NOTE	Harmonized as EN 61034-1.
IEC 61034-2	NOTE	Harmonized as EN 61034-2.
ISO 5659-2	NOTE	Harmonized as EN ISO 5659-2.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-6-1	2005	Fire hazard testing - Part 6-1: Smoke obscuration - General guidance	EN 60695-6-1	2005
IEC Guide 104	-	The preparation of safety publications and the - use of basic safety publications and group safety publications	-	-
ISO 5725-2	1994	Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method	-	-
ISO 13943	2008	Fire safety - Vocabulary	EN ISO 13943	2010
ISO 19706	2007	Guidelines for assessing the fire threat to people	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIRE HAZARD TESTING –

**Part 6-2: Smoke obscuration –
Summary and relevance of test methods**

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 60695-6-2 has been prepared by IEC technical committee 89: Fire hazard testing.

This standard cancels and replaces IEC/TS 60695-6-2 published in 2005. This first edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- this publication has been re-designated as an International Standard;
- updated normative references;
- updated terms and definitions;
- new test method Clause 7.3.2;
- numerous editorial changes of a technical nature throughout the publication.

This standard is to be used in conjunction with IEC 60695-6-1.

It has the status of a basic safety publication in accordance with IEC Guide 104 and ISO/IEC Guide 51.

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

Enquiry draft	Report on voting
89/1057/FDIS	89/1071/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 of the IEC 60695 series, under the general title of *Fire hazard testing*, can be found on the IEC website.

Part 6 consists of the following parts:

Part 6-1: Smoke obscuration – General guidance

Part 6-2: Smoke obscuration – Summary and relevance of test methods

Part 6-30: Guidance and test methods on the assessment of obscuration hazard of vision caused by smoke opacity from electrotechnical products involved in fires – Small scale static method – Determination of smoke opacity – Description of the apparatus

Part 6-31: Smoke obscuration – Small-scale static test – Materials

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

INTRODUCTION

The risk of fire needs to be considered in any electrical circuit, and the objective of component, circuit and equipment design, and the choice of materials, is to reduce the likelihood of fire, even in the event of foreseeable abnormal use, malfunction or failure.

Electrotechnical products, primarily as victims of fire, may nevertheless contribute to the fire. One of the contributing hazards is the release of smoke, which may cause loss of vision and/or disorientation which could impede escape from the building, or fire fighting.

This international standard describes smoke test methods in common use to assess the smoke release from electrotechnical products, or from materials used in electrotechnical products. It forms part of the IEC 60695-6 series which gives guidance to product committees wishing to incorporate test methods for smoke obscuration in product standards.

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FIRE HAZARD TESTING –

Part 6-2: Smoke obscuration – Summary and relevance of test methods

1 Scope

This part of IEC 60695 provides a summary of the test methods that are used in the assessment of smoke obscuration. It presents a brief summary of static and dynamic test methods in common use, either as international standards or national or industry standards. It includes special observations on their relevance to electrotechnical products and their materials and to fire scenarios, and it gives recommendations on their use.

This basic safety publication is intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

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2 Normative references (standards.iteh.ai)

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.

IEC 60695-6-1:2005, Fire hazard testing – Part 6-1: *Smoke obscuration – General guidance*

IEC Guide 104:., *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC 13943:2008, *Fire safety – Vocabulary*

ISO 5725-2:1994, *Accuracy (trueness and precision) of measurement methods and results – Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 19706:2007¹, *Guidelines for assessing the fire threat to people*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 13943, some of which are reproduced below for users' convenience, apply.

3.1

combustion

exothermic reaction of a substance with an oxidising agent

¹ This publication cancels and replaces ISO 9122-1:1989, Toxicity testing of fire effluents – Part 1: General.