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BASIC SAFETY PUBLICATION

PUBLICATION FONDAMENTALE DE SÉCURITÉ

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

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

IEC 60695-6-2:2018-06(en-fr)

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 7
4 Types of of test method 11
4.1 General 11
4.2 The physical fire model 11
4.3 Static test methods 12
4.4 Dynamic test methods 12
5 Types of test specimen 14
6 Published static test methods 14
6.1 General 14
6.2 Determination of smoke opacity in a 0,51 m^3 chamber 14
6.2.1 Standards which use a vertically oriented test specimen 14
6.2.2 Standard which uses a horizontally oriented test specimen 16
6.3 Determination of smoke density in a 27 m^3 smoke chamber 18
6.3.1 Standards 18
6.3.2 Purpose and principle 18
6.3.3 Test specimen 18
6.3.4 Method 18
6.3.5 Repeatability and reproducibility 19
6.3.6 Relevance of test data and special observations 19
7 Published dynamic test methods 19
7.1 General 19
7.2 Determination of smoke density generated by electric cables mounted on a horizontal ladder 20
7.2.1 Standards 20
7.2.2 Purpose and principle 20
7.2.3 Test specimen 20
7.2.4 Method 20
7.2.5 Repeatability and reproducibility 20
7.2.6 Relevance of test data and special observations 20
7.3 Determination of smoke generated by electrical cables mounted on a vertical ladder 20
7.3.1 ASTM and UL standards 20
7.3.2 European standard 21
7.4 Determination of smoke using a cone calorimeter 23
7.4.1 Standards 23
7.4.2 Purpose and principle 23
7.4.3 Test specimen 23
7.4.4 Method 23
7.4.5 Repeatability and reproducibility 24
7.4.6 Relevance of test data and special observations 24
7.5 Determination of smoke generated by discrete (non-continuous) products 24
7.5.1 Standards 24

7.5.2 Purpose and principle 24
7.5.3 Test specimen 25
7.5.4 Method 25
7.5.5 Repeatability and reproducibility 25
7.5.6 Relevance of test data and special observations 25
8 Overview of methods and relevance of data 25
Annex A (informative) Repeatability and reproducibility data – NBS smoke chamber – Interlaboratory tests from the French standard NF C20-902-1 and NF C20-902-2 28
Annex B (informative) Repeatability and reproducibility data – "Three metre cube" smoke chamber – French interlaboratory tests according to IEC 61034-2 29
Annex C (informative) Repeatability and reproducibility data – NFPA 262 30
Bibliography 31

Table 1 – Characteristics of fire stages (ISO 19706:2011) 13
Table 2 – Overview of smoke test methods 26
Table A.1 – Measurement of D_m 28
Table B.1 – Measurement of transmission expressed as a percentage 29
Table C.1 – Measurements of Peak Optical Density 30
Table C.2 – Measurements of Average Optical Density 30

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIRE HAZARD TESTING –

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

FOREWORD

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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 60695-6-2 published in 2011. This second edition constitutes a technical revision.

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

a) updated introduction;
b) updated normative references;
c) new text in 4.1;
d) deletion of references to IEC 60695-6-30 and -31 (withdrawn)
e) updates with respect to ISO 5659-2;

f) deletion of references to BS 6853 and CEI 20-37-3 (superseded);

g) deletion of references to ISO/TR 5924 (withdrawn);

h) updated text with respect to EN 50399;

i) updated text with respect to ISO 5660-1;

j) addition of new Subclause 7.5

k) deletion of Annex B;

l) deletion of Annex E;

m) additional bibliographic references.

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:

FDIS	Report on voting
89/1399/FDIS	89/1405/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.

A list of all parts of the IEC 60695 series, under the general title *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

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

In the design of an electrotechnical product the risk of fire and the potential hazards associated with fire need to be considered. In this respect the objective of component, circuit and equipment design, as well as the choice of materials, is to reduce the risk of fire to a tolerable level even in the event of reasonably foreseeable (mis)use, malfunction or failure. IEC 60695-1-10 [1][1], IEC 60695-1-11 [2], and IEC 60695-1-12 [3] provide guidance on how this is to be accomplished.

Fires involving electrotechnical products can also be initiated from external non-electrical sources. Considerations of this nature are dealt with in an overall fire hazard assessment.

The aim of the IEC 60695 series is to save lives and property by reducing the number of fires or reducing the consequences of the fire. This can be accomplished by:

- trying to prevent ignition caused by an electrically energised component part and, in the event of ignition, to confine any resulting fire within the bounds of the enclosure of the electrotechnical product.
- trying to minimise flame spread beyond the product's enclosure and to minimise the harmful effects of fire effluents including heat, smoke, and toxic or corrosive combustion products.

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

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1 Numbers in square brackets refer to the bibliography.

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 commonly used test methods for 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 gives recommendations on their use.

This basic safety publication shall be used 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.

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

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

IEC GUIDE 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO 5660-1:2015, *Reaction-to-fire tests – Heat release, smoke production and mass loss rate – Part 1: Heat release rate (cone calorimeter method) and smoke production rate (dynamic measurement)*

ISO 13943:2008, *Fire safety – Vocabulary*

ISO 19706:2011, *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 13943:2008, some of which are reproduced below for users' convenience, and the following apply.

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