SLOVENSKI STANDARD
SIST EN 60695-1-10:2017

01-maj-2017

Nadomešča:
SIST EN 60695-1-10:2010

Preskušanje požarne ogroženosti - 1-10. del: Navodilo za ocenjevanje požarne varnosti elektrotehniških izdelkov - Splošne smernice (IEC 60695-1-10:2016)

Fire hazard testing - Part 1-10: Guidance for assessing the fire hazard of electrotechnical products - General guidelines (IEC 60695-1-10:2016)

Prüfungen zur Beurteilung der Brandgefahr - Teil 1-10: Anleitung zur Beurteilung der Brandgefahr von elektrotechnischen Erzeugnissen - Allgemeiner Leitfaden (IEC 60695-1 -10:2016)

Essais relatifs aux risques du feu - Partie 1-10: Guide pour l'évaluation des risques du feu des produits électrotechniques - Lignes directrices générales (IEC 60695-1-10:2016)

Ta slovenski standard je istoveten z: **EN 60695-1-10:2017**

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
29.020	Elektrotehnika na splošno	Electrical engineering in general

SIST EN 60695-1-10:2017 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60695-1-10

March 2017

ICS 13.220.40; 29.020

Supersedes EN 60695-1-10:2010

English Version

Fire hazard testing - Part 1-10: Guidance for assessing the fire hazard of electrotechnical products - General guidelines (IEC 60695-1-10:2016)

Essais relatifs aux risques du feu - Partie 1-10: Lignes directrices pour l'évaluation des risques du feu des produits électrotechniques - Lignes directrices générales (IEC 60695-1-10:2016)

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This European Standard was approved by CENELEC on 2016-12-23. 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.

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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

Ref. No. EN 60695-1-10:2017 E

European foreword

The text of document 89/1341/FDIS, future edition 2 of IEC 60695-1-10, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-1-10:2017.

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) 2017-09-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-12-23

This document supersedes EN 60695-1-10:2010.

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 60695-1-10:2016 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 60950-1	NOTE	Harmonized as EN 60950-1.
IEC 60065	NOTE	Harmonized as EN 60065.
IEC 60332-1-2	NOTE	Harmonized as EN 60332-1-2.
IEC 62368-1	NOTE	Harmonized as EN 62368-1.
IEC 60695-1	NOTE	Harmonized in EN 60695-1 series.
IEC 60695-2	NOTE	Harmonized in EN 60695-2 series.
IEC 60695-5	NOTE	Harmonized in EN 60695-5 series.
IEC 60695-6	NOTE	Harmonized in EN 60695-6 series.
IEC 60695-7	NOTE	Harmonized in EN 60695-7 series.
IEC 60695-8	NOTE	Harmonized in EN 60695-8 series.
IEC 60695-9	NOTE	Harmonized in EN 60695-9 series.

IEC 60695-10	NOTE	Harmonized in EN 60695-10 series.
IEC 60695-11	NOTE	Harmonized in EN 60695-11 series.
IEC 60695-1-20	NOTE	Harmonized as EN 60695-1-20.
IEC/TS 62441	NOTE	Harmonized as CLC/TS 62441.

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.

Publication	Year	Title	EN/HD	Year
IEC 60079-0	-	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60695-1-11	-	Fire hazard testing - Part 1-11: Guidance for assessing the fire hazard of electrotechnical products - Fire hazard assessment	EN 60695-1-11	-
IEC 60695-1-12	-	Fire hazard testing - Part 1-12: Guidance for assessing the fire hazard of electrotechnical products - Fire safety engineering	-	-
IEC 60695-1-30	-	Fire hazard testing - Part 1-30: Guidance for assessing the fire hazard of electrotechnical products - Preselection testing process - General guidelines	EN 60695-1-30	-
IEC 60695-4	2012	Fire hazard testing - Part 4: Terminology concerning fire tests for electrotechnical products	EN 60695-4	2012
IEC Guide 104	-	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-
ISO 13943	2008	Fire safety - Vocabulary	EN ISO 13943	2010

IEC 60695-1-10

Edition 2.0 2016-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

BASIC SAFETY PUBLICATION

PUBLICATION FONDAMENTALE DE SÉCURITÉ

Fire hazard testing –
Part 1-10: Guidance for assessing the fire hazard of electrotechnical products – General guidelines

Essais relatifs aux risques du feu –
Partie 1-10: Lignes directrices pour l'évaluation des risques du feu des produits électrotechniques – Lignes directrices générales

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 13.220.40; 29.020

ISBN 978-2-8322-3755-7

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIRE HAZARD TESTING –

Part 1-10: Guidance for assessing the fire hazard of electrotechnical products – General guidelines

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 60695-1-10 has been prepared by IEC technical committee 89: Fire hazard testing.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

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

a) reference to IEC 60695-1-12;
b) modified Introduction and Scope;
c) updated normative references;
d) updated terms and definitions;
e) modified Table 1;

f) addition of Table 2;

g) new text in Subclauses 5.2, 5.3 and 5.4;

h) mandatory text in Clause 8;

i) Annex B changed to Annex A, and modified;

j) new Annex B concerning common ignition sources.

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

FDIS	Report on voting
89/1341/FDIS	89/1347/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.

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

This standard is to be used in conjunction with IEC 60695-1-11 and IEC 60695-1-12.

A list of all the parts in the IEC 60695 series, under the general title *Fire hazard testing*, can be found on the IEC website.

IEC 60695-1 consists of the following parts:

Part 1-10: *Guidance for assessing the fire hazard of electrotechnical products – General guidelines*

Part 1-11: *Guidance for assessing the fire hazard of electrotechnical products – Fire hazard assessment*

Part 1-12: Guidance for assessing *the fire hazard of electrotechnical products – Fire-safety engineering*

Part 1-20: *Guidance for assessing the fire hazard of electrotechnical products – Ignitability – General guidance*

Part 1-21: *Guidance for assessing the fire hazard of electrotechnical products – Ignitability – Summary and relevance of test methods*

Part 1-30: *Guidance for assessing the fire hazard of electrotechnical products – Preselection testing process – General guidelines*

Part 1-40: *Guidance for assessing the fire hazard of electrotechnical products – Insulating liquids*

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.

INTRODUCTION

In the design of any 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. This standard, together with its companions, IEC 60695-1-11 and IEC 60695-1-12, provides guidance on how this is to be accomplished.

The use of compartments with fire-resistant boundaries, and the use of detection and suppression systems are important methods for the mitigation of fire risk, but are not dealt with in this standard. Fires involving electrotechnical products can 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 of standards 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.

Assessing the fire hazard of electrotechnical products is accomplished by performing fire hazard tests. These tests are divided into two fundamental groups: qualitative fire tests and quantitative fire tests.

Fire testing of electrotechnical products should, whenever possible, be carried out using quantitative fire tests having the following characteristics.

a) The test should take into account the circumstances of product use, i.e. contemplated end-use conditions as well as foreseeable abnormal use. This is because fire conditions that may be hazardous under one set of circumstances will not necessarily pose the same threat under a different set.

b) It should be possible to correlate the test results with the harmful effects of fire effluents referred to above, i.e. the thermal and airborne threats to people and/or property in the relevant end-use situation. This avoids the creation of artificial, and sometimes distorted, performance scales with no clear relationship to fire safety.

c) Recognizing that there are usually multiple contributions to the effects of real fires, the test results should be expressed in well-defined terms and using rational scientific units, so that the product's contribution to the overall fire effects can be quantitatively assessed and compared with that of other products' contributions.

Although quantitative tests are preferred, the characteristics of qualitative fire tests are that they provide pass/fail and classification results. Under certain circumstances it will be appropriate to maintain such qualitative test methods or to develop new ones. This part of IEC 60695-1 establishes the circumstances under which such maintenance or development is appropriate.

FIRE HAZARD TESTING –

Part 1-10: Guidance for assessing the fire hazard of electrotechnical products – General guidelines

1 Scope

This part of IEC 60695-1 provides general guidance with respect to fire hazard testing on how to reduce to a tolerable level the risk of fire and the potential effects of fires involving electrotechnical products. It also serves as a signpost standard to the other guidance publications in the IEC 60695 series.

It does not give guidance on the use of fire-resistant compartment boundaries or on the use of detection and suppression systems for the mitigation of fire risk.

It describes the relationship between fire risk and the potential effects of fire, and provides guidance to IEC product committees on the applicability of qualitative and quantitative fire tests to the fire hazard assessment of electrotechnical products. Details of the calculation of fire risk are not included in the scope of this document.

It emphasises the importance of the scenario approach to fire hazard and risk assessment and discusses criteria intended to ensure the development of technically sound hazard-based fire test methods.

It discusses the different types of fire tests, in particular the nature of qualitative and quantitative fire tests. It also describes the circumstances under which it is appropriate for IEC product committees to maintain or develop qualitative fire tests.

This standard is intended as guidance to IEC committees, and is to be used with respect to their individual applications.

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.

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 60079-0, *Explosive atmospheres − Part 0: Equipment − General requirements*

IEC 60695-1-11, *Fire hazard testing – Part 1-11: Guidance for assessing the fire hazard of electrotechnical products – Fire hazard assessment*