

# SLOVENSKI STANDARD

## SIST EN 60695-1-1:2000

01-junij-2000

Nadomešča:

SIST EN 60695-1-1:1999

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**Preskušanje požarne ogroženosti - 1-1. del: Navodila za ocenjevanje požarne ogroženosti pri elektrotehničnih proizvodih - Splošna navodila (IEC 60695-1-1:1999+corrigendum 2000)**

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

**iTeh STANDARD PREVIEW**

Prüfungen zur Beurteilung der Brandgefahr -- Teil 1-1: Anleitung zur Beurteilung der Brandgefahr von elektrotechnischen Erzeugnissen - Allgemeiner Leitfaden

SIST EN 60695-1-1:2000

Essais relatifs aux risques du feu -- Partie 1-1: Guide pour l'évaluation des risques du feu des produits électrotechniques - Directives générales

**Ta slovenski standard je istoveten z: EN 60695-1-1:2000**

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**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 60695-1-1:2000**

**en**

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English version

**Fire hazard testing**  
**Part 1-1: Guidance for assessing the fire hazard of**  
**electrotechnical products - General guidelines**  
(IEC 60695-1-1:1999 + corrigendum 2000)

Essais relatifs aux risques du feu  
Partie 1-1: Guide pour l'évaluation  
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électrotechniques - Directives générales  
(CEI 60695-1-1:1999 +  
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Prüfungen zur Beurteilung der  
Brandgefahr  
Teil 1-1: Anleitung zur Beurteilung der  
Brandgefahr von elektrotechnischen  
Erzeugnissen - Allgemeiner Leitfaden  
(IEC 60695-1-1:1999 +  
Corrigendum 2000)

This European Standard was approved by CENELEC on 2000-01-01. 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.

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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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

### Foreword

The text of document 89/374/FDIS, future edition 3 of IEC 60695-1-1, prepared by IEC TC 89, Fire hazard testing, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60695-1-1 on 2000-01-01.

This European Standard supersedes EN 60695-1-1:1995.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2000-10-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-01-01

Annexes designated "normative" are part of the body of the standard.  
Annexes designated "informative" are given for information only.  
In this standard, annex ZA is normative and annexes A and B are informative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 60695-1-1:1999 and its corrigendum January 2000 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA (normative)**

**Normative references to international publications  
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60695-4	1993	Fire hazard testing Part 4: Terminology concerning fire tests	EN 60695-4	1995
IEC Guide 104	1997	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
IEC Guide 109	1995	Environmental aspects - Inclusion in electrotechnical product standards	-	-
ISO/IEC Guide 52:1990		Glossary of fire terms and definitions	-	-

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Troisième édition  
Third edition  
1999-11

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PUBLICATION FONDAMENTALE DE SÉCURITÉ  
BASIC SAFETY PUBLICATION

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**Essais relatifs aux risques du feu –**

**Partie 1-1:**

**Guide pour l'évaluation des risques du feu  
des produits électrotechniques –**

**Directives générales**

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**Part 1-1:**

**Guidance for assessing the fire hazard of  
electrotechnical products –**

**General guidelines**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FIRE HAZARD TESTING –

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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

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

This third edition cancels and replaces the second edition published in 1995 and the corrigendum (1996). It also constitutes a technical revision.

This standard has the status of a basic safety standard in accordance with IEC Guide 104.

The text of this standard is based on the second edition, the corrigendum and the following documents:

FDIS	Report on voting
89/374/FDIS	89/381/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 3.

Annexes A and B are for information only.

The contents of the corrigenda of January 2000 and August 2000 have been included in this copy.

The committee has decided that this publication remains valid until 2005.

At this date, in accordance with the committee's decision, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

The risk of fire needs to be considered in any electrical circuit. With regard to this risk, the objective of component circuit and equipment design and the choice of material is to reduce the likelihood of fire even in the event of foreseeable abnormal use, malfunction or failure. The primary aim is to prevent ignition due to the electrically energized part but, if ignition and fire do occur, to control the fire preferably within the bounds of the enclosure of the electrotechnical product. In cases where surfaces of the electrotechnical products are exposed to an external fire, care will be taken to ensure that they do not contribute to the fire growth to a greater extent than the building products or structures in the immediately surrounding areas.

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## FIRE HAZARD TESTING –

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

#### 1 Scope

This part of IEC 60695 provides guidance for assessing the fire hazard of electrotechnical products (see clause 4) and for the resulting development of fire hazard testing (see clause 5) as related directly to harm to people, animals or property. Products, as defined in this standard, relate to materials, components or complete end-use products.

This standard is intended as guidance to IEC committees, and should be used with respect to their individual applications. Attention is drawn to the principles in IEC Guide 104, and to the role of committees with safety pilot functions and safety group functions.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications.

#### 2 Normative references

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The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60695. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60695 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60695-4:1993, *Fire hazard testing – Part 4: Terminology concerning fire tests*

IEC Guide 104:1997, *The preparation of safety publications and the use of basic safety publications and group safety publications*

IEC Guide 109:1995, *Environmental aspects – Inclusion in electrotechnical product standards*

ISO/IEC Guide 52:1990, *Glossary of fire terms and definitions*

#### 3 Definitions

For the purposes of this part of IEC 60695, the following definitions apply.

##### 3.1

##### **fire hazard**

the potential for injury or loss of life and/or damage to property by a fire

### 3.2

#### fire risk

the probability of fire

NOTE The risk is described in terms of probability, combining:

- a) the frequency of occurrence of an undesired event to be expected in a given technical operation or state, and,
- b) the extent of damage to be expected on the occurrence of the event.

## 4 Fire hazard assessment

### 4.1 General

It is important to understand and maintain the differences between "fire hazard" and "fire risk". The primary concern for hazard assessment is to minimize the risk of fires caused by electrically induced ignition within electrotechnical products and, should one start, to limit fire propagation. External events, such as the outbreak of a fire in the environment, shall also be considered, but as a secondary matter and to a lesser extent; however, deliberate misuse of an electrotechnical product shall, in general, be disregarded.

Consideration shall also be given to heat release and opacity, toxicity and corrosivity of the smoke from a burning product, and any necessary ability to function under fire conditions. These hazards are all related to ignition and fire growth. The emission of gases may also lead to a risk of explosion under certain circumstances.

Certain electrotechnical products, such as large enclosures, insulated cables and conduits, may in fact cover large portions of surfaces and finishing materials of building construction or may penetrate fire-resisting walls. In these circumstances, electrotechnical products, when exposed to an external fire, shall be evaluated from the standpoint of their contribution to the fire hazard in comparison to the building materials or structure lacking the installation of electrotechnical products.

Following a detailed review of all the hazards related to a fire scenario, the final product standards, as drafted, should include a series of tests or a single test, as appropriate, to address the specific hazard(s) defined.

### 4.2 Development of fire hazard assessment

#### 4.2.1 Overview of fire hazard elements

The fire hazard of an electrotechnical product depends on its characteristics, service conditions and the environment in which it is used, including the number and type of people, the value and vulnerability of property to be exposed to a fire involving that product. Therefore, a fire hazard assessment procedure for a particular product shall describe the product, its conditions of operation and its environment.

#### 4.2.2 Basic steps

The basic steps to follow in developing a fire hazard assessment are:

- a) the definition of the scope (for example, the electrotechnical product range concerned) and the context (for example, where and how the products are used) (see 4.2.2.1);
- b) the identification of the scenarios of concern (see 4.2.2.2);
- c) the selection of the criteria to be used (see 4.2.2.3);
- d) the interpretation of results (see 4.2.2.4).