



**NSAI**  
Standards

Irish Standard  
I.S. EN 60695-11-4:2011

Fire hazard testing -- Part 11-4: Test flames - 50 W flame - Apparatus and confirmational test method (IEC 60695-11-4:2011 (EQV))

## I.S. EN 60695-11-4:2011

*Incorporating amendments/corrigenda issued since publication:*

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD

**EN 60695-11-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2011

ICS 13.220.40; 29.020

English version

**Fire hazard testing -  
Part 11-4: Test flames -  
50 W flame -  
Apparatus and confirmational test method  
(IEC 60695-11-4:2011)**

Essais relatifs aux risques du feu -  
Partie 11-4: Flamme d'essai -  
Flamme de 50 W -  
Appareillage et méthodes d'essai de  
vérification  
(CEI 60695-11-4:2011)

Prüfungen zur Beurteilung der  
Brandgefahr -  
Teil 11-4: Prüfflammen -  
50 W Prüf Flamme -  
Prüfeinrichtungen und Prüfverfahren zur  
Bestätigung  
(IEC 60695-11-4:2011)

This European Standard was approved by CENELEC on 2011-11-01. 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.

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**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

**I.S. EN 60695-11-4:2011**

EN 60695-11-4:2011

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**Foreword**

The text of document 89/1060/FDIS, future edition 1 of IEC 60695-11-4, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-11-4:2011.

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) 2012-08-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-11-01

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 60695-11-4:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60695-11-2:2003      NOTE Harmonized as EN 60695-11-2:2003 (not modified).

## 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 60584-1	1995	Thermocouples - Part 1: Reference tables	EN 60584-1	1995
IEC 60584-2 + A1	1982 1989	Thermocouples - Part 2: Tolerances	EN 60584-2	1993
IEC Guide 104	1997	The preparation of safety publications and the - use of basic safety publications and group safety publications		-
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion - in standards		-
ISO 13943	2008	Fire safety - Vocabulary	EN ISO 13943	2010
ASTM B187	-	Standard Specification for Copper, Bus Bar, Rod, and Shapes and General Purpose Rod, Bar, and Shapes	-	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **FIRE HAZARD TESTING –**

### **Part 11-4: Test flames – 50 W flame – Apparatus and confirmational test method**

#### 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 60695-11-4 has been prepared by IEC technical committee 89: Fire hazard testing.

This first edition of IEC 60695-11-4 cancels and replaces the second edition of technical specification IEC/TS 60695-11-4 published in 2004. It constitutes a technical revision and now has the status of an International Standard.

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

The main changes with respect to the previous edition are the integration of minor editorial and technical changes throughout the text.



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

FDIS	Report on voting
89/1060/FDIS	89/1084/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 the parts in the IEC 60695 series, under the general title *Fire hazard testing*, can be found on the IEC website.

IEC 60695-11 consists of the following parts:

- Part 11-2: Test flames – 1 kW nominal pre-mixed flame – Apparatus, confirmatory test arrangement and guidance
- Part 11-3: Test flames – 500 W flames – Apparatus and confirmational test methods
- Part 11-4: Test flames – 50 W flame – Apparatus and confirmational test method
- Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance
- Part 11-10: Test flames – 50 W horizontal and vertical flame test methods
- Part 11-11: Test flames – Determination of the characteristic heat flux for ignition from a non-contacting flame source
- Part 11-20: Test flames – 500 W flame test methods
- Part 11-30: Test flames – History and development from 1979 to 1999
- Part 11-40: Test flames – Confirmatory tests – Guidance

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 best method for testing electrotechnical products with regard to fire hazard is to duplicate exactly the conditions occurring in practice. In most instances, this is not possible. Accordingly, for practical reasons, the testing of electrotechnical products with regard to fire hazard is best conducted by simulating as closely as possible the actual effects occurring in practice.

Work initiated by ACOS resulted in a series of standards that make available standardized test flames covering a range of powers for the use of all product committees needing such test flames. A needle flame is described in IEC 60695-11-5, two 500 W flames are described in IEC 60695-11-4, and a 1 kW flame is described in IEC 60695-11-2.

This international standard provides a description of the apparatus required to produce a 50 W test flame and a description of a calibration procedure to check that the test flame produced meets given requirements. Guidance on confirmatory tests for test flames is given in IEC 60695-11-40.

Three 50 W test flame methods (A, B and C) were originally specified in IEC/TS 60695-11-4:2000, with the intention that users would determine a ranking preference. This process has resulted in two of these flame methods being withdrawn, as shown below:

50 W test flame method	Flame type	Gas	Approximate flame height / mm
A	Pre-mixed	Methane	20
B	Withdrawn		
C	Withdrawn		

The method described in Clause 4 of this standard is the method that was originally designated as Method A. It produces a 50 W nominal test flame using a single gas supply tube, a needle valve to adjust the gas back pressure, a flowmeter to adjust the gas flow rate, and adjustable air ports on the burner tube.

The flame is produced by burning methane, and the method makes use of a more tightly specified version of a burner that was used in some countries for many years.

The method has been developed as a technical enhancement of previous technology.

## FIRE HAZARD TESTING –

### Part 11-4: Test flames – 50 W flame – Apparatus and confirmational test method

#### 1 Scope

This part of IEC 60695 provides detailed requirements for the production of a 50 W nominal, pre-mixed type test flame. The approximate overall height of the flame is 20 mm. Details are given for confirmation of the test flame.

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 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 60584-1:1995, *Thermocouples – Part 1: Reference tables*

IEC 60584-2:1989, *Thermocouples – Part 2: Tolerances*  
Amendment 1

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

ISO/IEC Guide 51:1999, *Safety aspects – Guidelines for their inclusion in standards*

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

ASTM-B187/B187M-06, *Standard Specification for Copper, Bus Bar, Rod, and Shapes and General Purpose Rod, Bar, and Shapes*

#### 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 the users' convenience, as well as the following apply..

##### 3.1

**burn**, intransitive verb  
undergo combustion

[ISO/IEC 13943, definition 4.28]

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