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**Preskusi na električnih kablilih in kablilih iz optičnih vlaken v požarnih razmerah - 1-2. del: Preskus navpičnega širjenja ognja po posamezni izolirani žici ali kablu - Postopek za predmešani plamen 1 kW - Dopolnilo A1**

Tests on electric and optical fibre cables under fire conditions -- Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame

**iTeh STANDARD PREVIEW**  
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Prüfungen an Kabeln, isolierten Leitungen und Glasfaserkabeln im Brandfall -- Teil 1-2: Prüfung der vertikalen Flammenausbreitung an einer Ader, einer isolierten Leitung oder einem Kabel - Prüfverfahren mit 1 kW-Flamme mit Gas-/Luftgemisch

[SIST EN 60332-1-2:2005/A1:2015](https://standards.itih.ai/catalog/standards/sist/91503fc4-6107-48ed-9e4f-355a1f000000/sist-en-60332-1-2-2005-a1-2015)

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Essais des câbles électriques et à fibres optiques soumis au feu -- Partie 1-2: Essai de propagation verticale de la flamme sur conducteur ou câble isolé - Procédure pour flamme à prémélange de 1kW

**Ta slovenski standard je istoveten z: EN 60332-1-2:2004/A1:2015**

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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
29.060.20	Kabli	Cables
33.180.10	(Optična) vlakna in kabli	Fibres and cables

**SIST EN 60332-1-2:2005/A1:2015 en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60332-1-2:2004/A1**

October 2015

ICS 13.220.40; 29.020; 29.060.20

English Version

**Tests on electric and optical fibre cables under fire conditions -  
Part 1-2: Test for vertical flame propagation for a single insulated  
wire or cable - Procedure for 1 kW pre-mixed flame  
(IEC 60332-1-2:2004/A1:2015)**

Essais des câbles électriques et à fibres optiques soumis  
au feu - Partie 1-2: Essai de propagation verticale de la  
flamme sur conducteur ou câble isolé - Procédure pour  
flamme à prémélange de 1kW  
(IEC 60332-1-2:2004/A1:2015)

Prüfungen an Kabeln, isolierten Leitungen und  
Glasfaserkabeln im Brandfall - Teil 1-2: Prüfung der  
vertikalen Flammenausbreitung an einer Ader,  
einer isolierten Leitung oder einem Kabel - Prüfverfahren  
mit 1 kW-Flamme mit Gas-/Luftgemisch  
(IEC 60332-1-2:2004/A1:2015)

This amendment A1 modifies the European Standard EN 60332-1-2:2004; it was approved by CENELEC on 2015-09-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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**

**EN 60332-1-2:2004/A1:2015****European foreword**

The text of document 20/1591/FDIS, future IEC 60332-1-2:2004/A1, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60332-1-2:2004/A1:2015.

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) 2016-06-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-09-01

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

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**Endorsement notice**

SIST EN 60332-1-2:2005/A1:2015

<https://standards.iteh.ai/catalog/standards/sist/91503fc4-6107-48ed-9e4f-422030303030>

The text of the International Standard IEC 60332-1-2:2004/A1:2015 was approved by CENELEC as a European Standard without any modification.

In the Bibliography of EN 60332-1-2:2004, the following note has to be **added** for the standard indicated:

ISO 13943	NOTE	Harmonized as EN ISO 13943.
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## 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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#### **Addition to Annex ZA of EN 60332-1-2:2004**

IEC 60811-203	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 203: General tests - Measurement of overall dimensions	EN 60811-203	-
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[SIST EN 60332-1-2:2005/A1:2015](https://standards.iteh.ai/catalog/standards/sist/91503fc4-6107-48ed-9e4f-49585fb1775c/sist-en-60332-1-2-2005-a1-2015)

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IEC 60332-1-2

Edition 1.0 2015-07

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

GROUP SAFETY PUBLICATION  
PUBLICATION GROUPEE DE SÉCURITÉ

AMENDMENT 1  
AMENDEMENT 1

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**Tests on electric and optical fibre cables under fire conditions –  
Part 1-2: Test for vertical flame propagation for a single insulated wire or cable –  
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COMMISSION  
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## FOREWORD

This amendment has been prepared by IEC technical committee 20: Electric cables.

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

FDIS	Report on voting
20/1591/FDIS	20/1598/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base 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.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 60332-1-2:2005/A1:2015](http://standards.iteh.ai/catalog/standards/sist/91503fc4-6107-48ed-9e4f-49585fb1775c/sist-en-60332-1-2-2005-a1-2015)

## 2 Normative references

*Add the following new reference:*

IEC 60811-203, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 203: General tests – Measurement of overall dimensions*

## 3 Terms and definitions

*Replace the existing source of item 3.1 by the following new source:*

[SOURCE: ISO 13943:2008, 1.489]

*Replace the existing source of item 3.2 by the following new source:*

[SOURCE: ISO 13943:2008, 4.38]

### 5.1 Sample

*Replace the existing subclause by the following new subclause:*

The test sample shall be a piece of single insulated conductor or cable (600 ± 25) mm long.

The test sample diameter shall be measured using the method given in IEC 60811-203. The measurement shall be made at each of three places, separated by at least 100 mm.



The average of the three values obtained shall be rounded to obtain the overall diameter. If the calculation gives 5 or more for the second decimal figure, raise the first to the next number; thus, for example, 5,75 is rounded to 5,8. If the calculation gives 4 or less for the second decimal figure, maintain the first number; thus, for example, 5,74 is rounded to 5,7.

The overall diameter obtained shall be used for the selection of the time for flame application.

### 5.3 Positioning of test piece

*Replace the existing subclause by the following new subclause:*

The test piece shall be straightened and secured to two horizontal supports by means of a suitable size of copper wire, in a vertical position in the centre of the metal enclosure, as described in IEC 60332-1-1, so that the distance between the bottom of the upper support and the top of the lower support is  $(550 \pm 5)$  mm. In addition, the test piece shall be positioned so that the bottom of the specimen is approximately 50 mm from the base of the enclosure (see Figure 1).

The vertical axis of the test piece shall be arranged centrally within the enclosure (i.e. 150 mm from each side and 225 mm from the rear).

#### 5.4.1 Positioning of flame

*Replace the existing subclause by the following new subclause:*

A burner, as described in IEC 60332-1-1, shall be ignited and the flow rates of gas and air adjusted to the specified values. The burner shall be positioned so that the tip of the blue cone impinges on the surface of the test piece at a distance of  $(475 \pm 5)$  mm from the lower edge of the upper horizontal support, whilst the burner is at an angle of  $(45 \pm 2)^\circ$  to the vertical axis of the test piece (see Figure 2). The burner position shall be fixed throughout the flame application time.

For flat-form cables, the flame impingement shall be on the middle of the flat side of the cable.

In case of an electrical insulated conductor or cable, should the test piece move significantly during the test so as to render the result invalid, the test piece shall be held straight by the attachment of a load of approximately  $5 \text{ N/mm}^2$  of conductor area to the lower part of the sample so that the distance between the point where the load is attached and the lower edge of the top support measures  $(550 \pm 5)$  mm. In such cases, the test piece shall not be secured to the lower support.

#### 5.4.2 Test duration

*Replace the second paragraph by the following new paragraph:*

At the end of the specified flame application time, the burner shall be removed and the flame of the burner extinguished.

### Table 1 – Time for flame application

*Replace the existing footnote a by the following new footnote a:*

<sup>a</sup> For non-circular cables in which the major to minor axis ratio is less than 3, the nominal minor axis shall be used as the overall diameter ( $D$ ). For non-circular cables in which the major to minor axis ratio lies between 3 and 16, the overall diameter ( $D$ ) shall be taken as the sum of the major and minor axis divided by 3,14 ( $\pi$ ). For cables in which the major to minor axis ratio exceeds 16, the test criteria shall be given in the product standard or, if not, agreed between manufacturer and purchaser.

*Delete the reference to footnote b in the second column heading and delete footnote b.*