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

National foreword

This British Standard is the UK implementation of EN 60332-1-2:2004+A12:2020. It is derived from IEC 60332-1-2:2004, incorporating amendment 1:2015. It supersedes BS EN 60332-1-2:2004+A11:2016, which will be withdrawn on 5 November 2023.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by ⟨A1⟩ ⟨A1⟩.

Text altered by CENELEC amendment A11 is indicated by ⟨A11⟩ ⟨A11⟩.

The UK participation in its preparation was entrusted to Technical Committee GEL/20/18, Electric Cables - Fire testing.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments/corrigenda issued since publication

Date	Text affected
30 November 2015	Implementation of IEC amendment 1:2015 with CENELEC endorsement A1:2015. Annex ZA updated.
31 August 2016	Implementation of CENELEC amendment A11:2016
31 December 2020	Implementation of CENELEC amendment A12:2020

EUROPEAN STANDARD

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EN 60332-1-2:2004+A12

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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)

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 (CEI 60332-1-2:2004)

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)

This European Standard was approved by CENELEC on 2004-09-01. 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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Europäisches Komitee für Elektrotechnische Normung

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EN 60332-1-2:2004+A12:2020 (E)

European foreword

The text of document 20/697/FDIS, future edition 1 of IEC 60332-1-2, prepared by IEC TC 20, Electric cables, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60332-1-2 on 2004-09-01.

This European Standard supersedes EN 50265-2-1:1998.

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)	2005-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2007-09-01

Annex ZA has been added by CENELEC

Endorsement notice

The text of the International Standard IEC 60332-1-2:2004 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 60332-1-3	NOTE	Harmonized as EN 60332-1-3:2004 (not modified).
IEC 60332-2-2	NOTE	Harmonized as EN 60332-2-2:2004 (not modified).

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Foreword to amendment A1

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:

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

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

Endorsement notice

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.

Foreword to amendment A11

This document [EN 60332-1-2:2004/A11:2016] has been prepared by CLC/TC 20 "Electric cables".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-05-23
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-05-23

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

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Foreword to amendment A12

This document (EN 60332-1-2:2004/A12:2020) has been prepared by CLC/TC 20 "*Electric cables*".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-11-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2023-11-05

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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International Standard IEC 60332-1-2 has been prepared by IEC technical committee 20: Electric cables.

It has the status of a group safety publication in accordance with IEC Guide 104.

This first edition of International Standard IEC 60332-1-2, together with IEC 60332-1-1, cancel and replace the third edition of IEC 60332-1, published in 1993, and constitute a technical revision, calling for the re-structurization of the standard into two separate parts.

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

FDIS	Report on voting
20/697/FDIS	20/711/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.

IEC 60332 consists of the following parts, under the general title *Tests on electric and optical fibre cables under fire conditions:*

Part 1-1: Test for vertical flame propagation for a single insulated wire or cable – Apparatus

Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1kW pre-mixed flame

Part 1-3: Test for vertical flame propagation for a single insulated wire or cable – Procedure for determination of flaming droplets/particles

Part 2-1: Test for vertical flame propagation for a single small insulated wire or cable – Apparatus

Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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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

1 Scope

This part of IEC 60332 specifies the procedure for testing the resistance to vertical flame propagation for a single vertical electrical insulated conductor or cable, or optical fibre cable, under fire conditions. The apparatus is given in IEC 60332-1-1.

NOTE 1 Testing to IEC 60332-1-2 may be performed simultaneously with that to IEC 60332-1-3 if required.

Recommended requirements for performance are given in Annex A.

IEC 60332-1-2 specifies the use of a 1 kW pre-mixed flame and is for general use, except that the procedure specified may not be suitable for the testing of small single insulated conductors or cables of less than 0,5 mm² total cross-section because the conductor melts before the test is completed, or for the testing of small optical fibre cables because the cable is broken before the test is completed. In these cases, the procedure given in IEC 60332-2-2 is recommended.

NOTE 2 Since the use of insulated conductor or cable which retards flame propagation and complies with the recommended requirements of this standard is not sufficient by itself to prevent propagation of fire under all conditions of installation, it is recommended that wherever the risk of propagation is high, for example in long vertical runs of bunches of cables, special installation precautions should also be taken. It cannot be assumed that because the sample of cable complies with the performance requirements recommended in this standard, that a bunch of cables will behave in a similar manner. (See IEC 60332-3 series.)

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 60332-1-1, *Tests on electric and optical fibre cables under fire conditions – Part 1-1: Test for vertical flame propagation for a single insulated wire or cable – Apparatus*

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

〈A1〉 IEC 60811-203, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 203: General tests – Measurement of overall dimensions* 〈A1〉

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