

# CONSOLIDATED VERSION

# VERSION CONSOLIDÉE



GROUP SAFETY PUBLICATION  
PUBLICATION GROUPEE DE SÉCURITÉ

**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**

**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 pré-mélange de 1 kW**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 13.220.40; 29.020; 29.060.20

ISBN 978-2-8322-2831-9

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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

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**This Consolidated version of IEC 60332-1-2 bears the edition number 1.1. It consists of the first edition (2004-07) [documents 20/697/FDIS and 20/711/RVD] and its amendment 1 (2015-07) [documents 20/1591/FDIS and 20/1598/RVD]. The technical content is identical to the base edition and its amendment.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through. A separate Final version with all changes accepted is available in this publication.**

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 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 the basic publication and its amendment 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

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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 mm<sup>2</sup> 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*

IEC 60811-2-3, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 20: General tests – Measurement of overall dimensions*

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

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. The definitions are taken from IEC 60695-4.

##### 3.1 ignition source

source of energy that initiates combustion