SRI LANKA STANDARD 1007 : PART 2.1 : 2008
IEC 60332 : PART 2-1 : 2004

METHODS OF TEST ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS

PART 2.1 : TEST FOR VERTICAL FLAME PROPAGATION FOR A SINGLE SMALL INSULATED WIRE OR CABLE – APPARATUS

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard

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PART 2.1 : TEST FOR VERTICAL FLAME PROPAGATION FOR A SINGLE SMALL INSULATED WIRE OR CABLE – APPARATUS

SLS 1007 Part 2.1 : 2008
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SRI LANKA STANDARDS INSTITUTION
No. 17, Victoria Place
Elvitigala Mawatha
Colombo 8
Sri Lanka.

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

Sri Lanka Standard
METHODS OF TEST ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS
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NATIONAL FOREWORD

This standard was approved by the Sectoral Committee on Electric Cables and Conductors and was authorized for adoption and publication as a Sri Lanka Standard by the Council of Sri Lanka Standards Institution on 2008-08-28.

SLS 1007 Part 2.1 and **SLS 1007 Part 2.2** supersede **SLS 1007 Part 2 : 1993**.

SLS 1007 Methods of test for electric and optical cables under fire conditions, is published in five parts as follows:

Part 1.1	Tests for vertical flame propagation for a single insulated wire or cable - Apparatus
Part 1.2	Tests for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame
Part 1.3	Tests for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming droplets/particles.
Part 2.1	Tests for vertical flame propagation for a single small insulated wire or cable - Apparatus
Part 2.2	Tests for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame.

This part of the standard is identical with **IEC 60332-2-1 : 2004 :** Tests on electric and optical fibre cables under fire conditions – Part 2-1 : Test for vertical flame propagation for a single small insulated wire or cable – Apparatus, published by the International Electrotechnical Commission (IEC).

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the results of a test or an analysis shall be rounded off in accordance with **CS 102**. The number of significant places to be retained in the rounded off value shall be the same as that of the specified value in the standard.

Terminology and conventions

The text of the International Standard has been accepted as suitable for publication without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards; attention is therefore drawn to the following:

a) Wherever the words “International Standard” appear referring to this standard they should be interpreted as “Sri Lanka Standard”.

b) Wherever the page numbers are quoted they are page number of IEC standard.

CROSS REFERENCES

Corresponding Sri Lanka Standards for international standards listed under references, in IEC 60332-2-1, are not available.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60332-2-1

Première édition
First edition
2004-07

PUBLICATION GROUPÉE DE SÉCURITÉ
GROUP SAFETY PUBLICATION

Essais des câbles électriques et à fibres optiques soumis au feu –

Partie 2-1: Essai de propagation verticale de la flamme sur conducteur ou câble isolé de petite section – Appareillage d'essai

Tests on electric and optical fibre cables under fire conditions –

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

Numéro de référence
Reference number
CEI/IEC 60332-2-1:2004

Numérotation des publications

Depuis le 1er janvier 1997, les publications de la CEI sont numérotées à partir de 60000. Ainsi, la CEI 34-1 devient la CEI 60034-1.

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS –

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

FOREWORD

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International Standard IEC 60332-2-1 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 60332-2-1, together with IEC 60332-2-2, cancel and replace the third edition of IEC 60332-2, published in 1989, and constitute a technical revision, calling for the re-structurizationof the standard into two separate parts.

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

FDIS	Report on voting
20/699/FDIS	20/713/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.

TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS –

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

1 Scope

This part of IEC 60332 specifies the test apparatus for testing the resistance to vertical flame propagation for a single small vertical electrical insulated conductor or cable, or optical fibre cable, under fire conditions.

The procedure, together with an informative annex of recommended requirements for performance, is given in IEC 60332-2-2.

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

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 definition applies. The definition is taken from IEC 60695-4.

3.1
ignition source
source of energy that initiates combustion

[IEC 60695-4:1993, definition 2.76]

4 Test apparatus

4.1 Components

The test apparatus shall comprise the following:

a) a metallic screen (4.2);

b) an ignition source (4.3);

c) a suitable chamber (4.4).

4.2 Metallic screen

A metallic screen (1 200 ± 25) mm high, (300 ± 25) mm wide and (450 ± 25) mm deep with open front and closed top and bottom, (see Figure 1), shall be used.

4.3 Ignition source

The ignition source shall be a propane burner complying with Figure 2.

NOTE In order to obtain the 8 mm bore, as shown in Figure 2, it is permitted to fit an adaptor to burners not otherwise complying.

The burner shall be fed with technical grade propane of greater than 95 % purity, and shall produce a luminous flame when in a vertical position with the air inlet closed. The gas flow shall be adjusted so that the total length of the luminous flame is (125 ± 25) mm (see Figure 3).

4.4 Chamber

The metallic screen and ignition source shall be contained within a suitable chamber, substantially free from draughts during the test duration, but with facilities for disposing of noxious gases resulting from burning. The chamber shall be maintained at a temperature of (23 ± 10) °C.

NOTE 1 If the requirement for the draught-free closed area is met by the use of a standard fume cupboard, it must be capable of independent operator control of the extractor fan such as to permit operation with the extractor "OFF". Some fume cupboards may not be supplied with this facility.

NOTE 2 If a fume cupboard is used as the draught-free test area, the following safe operating practice is recommended:

a) turn off extractor fan, seal the outlet;

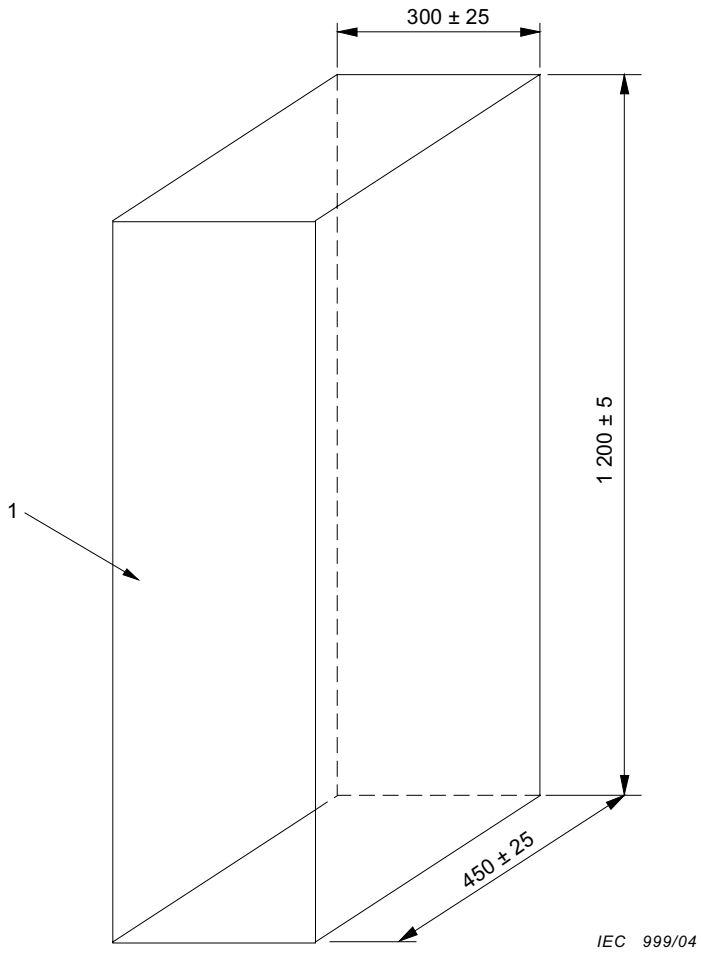
b) pull down front door of fume cupboard to leave a gap sufficient to manipulate burner into position;

c) ensure operator is protected;

d) do not move the door of the fume cupboard during the test;

e) at the end of the test evacuate the fume cupboard fully before opening the door.

Dimensions in millimetres

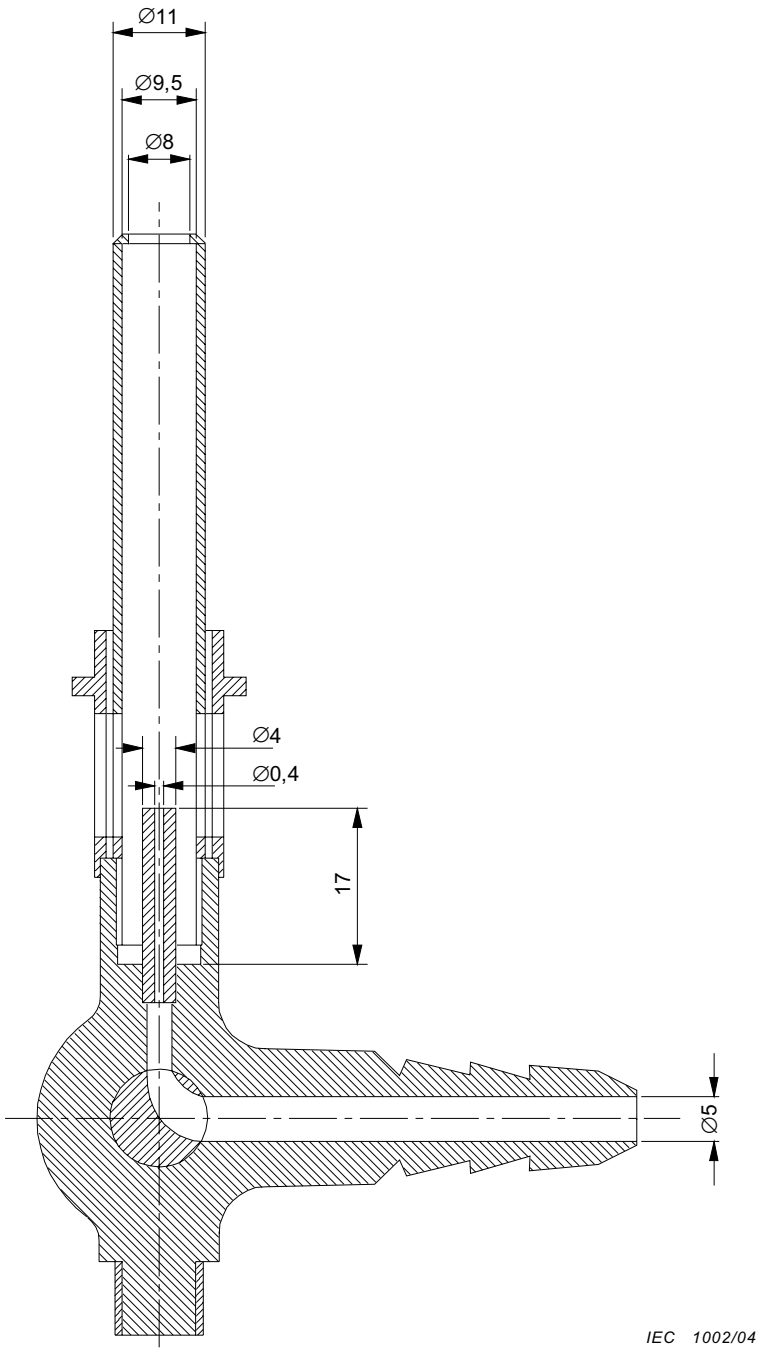


Key

1 front open space (all other sides closed)

Figure 1 – Test apparatus – Metallic screen

Dimensions in millimetres



Tolerances ±5 %

Figure 2 – Details and dimensions of propane burner (diffusion flame)

Dimensions in millimetres

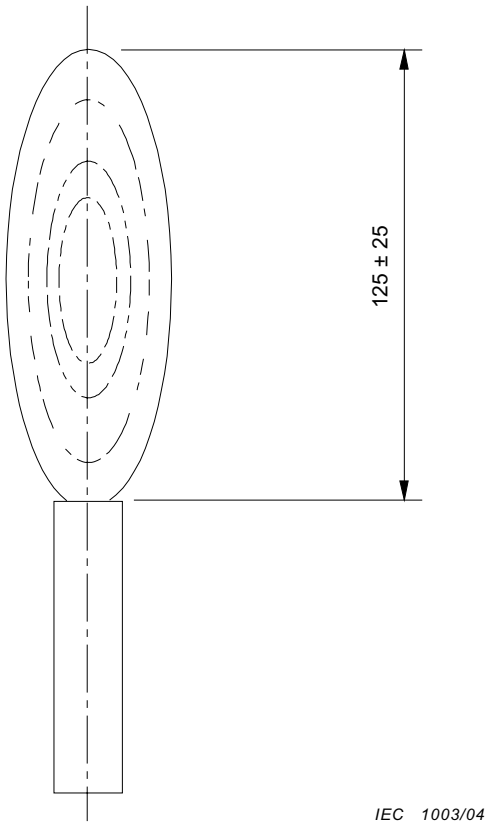


Figure 3 – Luminous flame

Bibliography

IEC 60332-2-2, *Tests on electric and optical fibre cables under fire conditions – Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable – Procedure for diffusion flame*

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SRI LANKA STANDARDS INSTITUTION

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