
Fire hazard testing -- Part 2: Test methods -- Section 4/sheet 1: 1 kW nominal pre-mixed test flame and guidance (IEC 60695-2-4/1:1991)

Fire hazard testing -- Part 2: Test methods -- Section 4/sheet 1: 1 kW nominal pre-mixed test flame and guidance

Prüfungen zur Beurteilung der Brandgefahr -- Teil 2: Prüfverfahren -- Hauptabschnitt 4/Blatt 1: 1-kW-Flamme (Nennwert) mit Gas/Luft-Gemisch und Anleitung

Essais relatifs aux risques du feu -- Partie 2: Méthodes d'essai -- Section 4/feuille 1: Flamme d'essai à prémélange de 1 kW nominal et guide

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Ta slovenski standard je istoveten z: EN 60695-2-4/1:1993

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
29.020	Elektrotehnika na splošno	Electrical engineering in general

SIST EN 60695-2-4/1:1999**en**

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EUROPEAN STANDARD

EN 60695-2-4/1

NORME EUROPEENNE

EUROPÄISCHE NORM

April 1993

UDC 621.3.049.7:620.1:614.841.2

Descriptors: Electricity, insulating material, equipment, fire hazard, flame test, pre-mixed type, 1 kW nominal

ENGLISH VERSION

Fire hazard testing
 Part 2: Test methods
 Section 4/sheet 1: 1 kW nominal pre-mixed test
 flame and guidance
 (IEC 695-2-4/1:1991)

Essais relatifs aux risques
 du feu
 Partie 2: Méthodes d'essai
 Section 4/feuille 1: Flamme
 d'essai à prémélange de 1 kW
 nominal et guide
 (CEI 695-2-4/1:1991)

Prüfungen zur Beurteilung der
 Brandgefahr
 Teil 2: Prüfverfahren
 Hauptabschnitt 4/Blatt 1:
 1-kW-Flamme mit Gas/Luft-Gemisch
 und Anleitung
 (IEC 695-2-4/1:1991)

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This European Standard was approved by CENELEC on 1993-03-09. 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 Central Secretariat or to any CENELEC member.

This European Standard 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC				
<u>Publication</u>	<u>Date</u>	<u>Title</u>	<u>EN/HD</u>	<u>Date</u>
695-1-1	1982	Fire hazard testing Part 1: Guidance for the preparation of requirements and test specifications for assessing fire hazard of electro- technical products - General guidance	-	-
695-2-4/0	1991	Part 2: Test methods Section 4/sheet 0: Diffusion type and premixed type flame test methods	EN 60695-2-4/0	1993
695-4	1989	Fire hazard testing Part 4: Terminology concerning fire tests	-	-

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Other publication:

[SIST EN 60695-2-4/1:1999](https://standards.iteh.ai/catalog/standards/sist/4a36c645-f5ba-41cd-9707-2e9136914190/sist-en-60695-2-4-1-1999)

<https://standards.iteh.ai/catalog/standards/sist/4a36c645-f5ba-41cd-9707-2e9136914190/sist-en-60695-2-4-1-1999>
 ISO 1337:1980 - Wrought coppers (having minimum copper contents of 99,85 %) Chemical composition and forms of wrought products

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
695-2-4/1

Première édition
First edition
1991-04

Essais relatifs aux risques du feu

Partie 2:

Méthodes d'essai

Section 4 / feuille 1: Flamme d'essai à prémélange
de 1 kW nominal et guide

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Fire hazard testing

Part 2:

Test methods

Section 4 / sheet 1: 1 kW nominal pre-mixed test
flame and guidance

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIRE HAZARD TESTING

Part 2: Test methods
 Section 4 / sheet 1: 1 kW nominal pre-mixed test
 flame and guidance

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

This section of IEC 695-2 has been prepared by IEC Technical Committee No. 89: Fire hazard testing.

[SIST EN 60695-2-4/1:1999](https://standards.iteh.ai/catalog/standards/sist/4a36c645-5ba-41cd-9707-c80cc931098/sist-en-60695-2-4-1-1999)

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

DIS	Report on Voting
89(CO)3	89(CO)7

Full information on the voting for the approval of this section can be found in the Voting Report indicated in the above table.

Annex A is for information only.

INTRODUCTION

IEC 695-2-4/0 gives:

- a) guidance on the design and use of flame test methods to assess the effect on the specimen of flames such as may arise from other ignited items in the vicinity, or from a fire in its early stages;
- b) a general description of the apparatus required to produce the test flame.

The detailed requirements for the apparatus needed to produce test flames are given in a series of additional sheets of which this is one.

Sheets for the following flames are under consideration:

- 500 W - 600 W, pre-mixed type, of approximate overall height 125 mm;
- 50 W, pre-mixed type, of approximate overall height 20 mm.

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FIRE HAZARD TESTING

Part 2: Test methods Section 4 / sheet 1: 1 kW nominal pre-mixed test flame and guidance

1 Scope

This section of IEC 695-2 gives the detailed requirements for the production of the 1 kW nominal, propane based pre-mixed type test flame. The approximate overall flame height is 175 mm.

This section should be used in conjunction with IEC 695-2-4/0 and the other guidance publications in IEC 695.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this section of IEC 695-2. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this section of IEC 695-2 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

<https://standards.iteh.ai/catalog/standards/sist/4a36c645-5ba-41cd-9707-e86ec993f698/sist-en-60695-2-4-1-1999>

IEC 695: *Fire hazard testing.*

IEC 695-1-1: 1982, *Fire hazard testing. Part 1: Guidance for the preparation of requirements and test specifications for assessing fire hazard of electrotechnical products. General guidance.*

IEC 695-2-4/0: 1991, *Fire hazard testing. Part 2: Test methods, Section 4 / sheet 0: Diffusion type and pre-mixed type flame test methods. (In preparation.)*

IEC 695-4: 1989, *Fire hazard testing. Part 4: Terminology concerning fire tests.*

ISO 1337: 1980, *Wrought coppers (having minimum copper contents of 99,85 %) - Chemical composition and forms of wrought products.*

3 Definition

For the purpose of this section, the following definition applies:

A standardized test flame, i.e. one that conforms with this section, meets all of the requirements given in clause 4.

4 Requirements

A standardized 1 kW flame ignition source is one that is produced:

- using hardware according to figures 1 to 8;
- supplied with propane gas of purity >98 % at a flowrate equivalent to 650 ml/min \pm 30 ml/min at 23 °C, 0,1 MPa ;
- supplied with air at a flowrate equivalent to 10 l/min \pm 0,5 l/min at 23 °C, 0,1 MPa*.

The flame shall be symmetrical, stable and give a result of 45 s \pm 5 s in the confirmatory test described in 5.2.

The approximate dimensions of the flame, when viewed in subdued light shall be:

- blue cone height 50 mm to 60 mm;
- overall height 170 mm to 190 mm.

5 Production and confirmation of the test flame

5.1 Production

The supply arrangement for the burner given in figure 7 shall be used. Care shall be taken to ensure leak free connections.

The burner shall be ignited, and the gas and air flows adjusted to the required values.

The flame shall appear stable and symmetrical on examination.

5.2 Confirmation

5.2.1 Principle

The time for the temperature of the copper block, described in figure 6, to increase from 100 °C to 700 °C shall be 45 s \pm 5 s when the flame test arrangement of figure 8 is used.

5.2.2 Procedure

- Set up the arrangement according to figure 8 in a draught-free environment, ensuring leak free gas and air connections.
- Temporarily remove the burner away from the block to ensure no influence of the flame on the block during the preliminary adjustment of gas and air flows.
- Ignite the flame, and adjust the gas and air flows to the specified rates. Ensure that the estimated blue cone height and the overall height of the flame are within the prescribed limits, when viewed in subdued light and that the flame is symmetrical. Wait for a period of 5 min to allow the burner conditions to reach equilibrium.
- With the temperature/time indicating/recording devices operational, re-position the burner under the block.

* Corrected from the measurements taken under actual conditions of use.