

# SLOVENSKI STANDARD

## SIST EN 50268-2:2000

01-september-2000

Nadomešča:

SIST HD 606.2 S1:1998

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### Common test methods for cables under fire conditions - Measurement of smoke density of cables burning under defined conditions - Part 2: Procedure

Common test methods for cables under fire conditions - Measurement of smoke density of cables burning under defined conditions -- Part 2: Procedure

Allgemeine Prüfverfahren für das Verhalten von Kabeln und isolierten Leitungen im Brandfall - Messung der Rauchdichte von Kabeln und isolierten Leitungen beim Brennen unter definierten Bedingungen -- Teil 2: Prüfverfahren

[SIST EN 50268-2:2000](#)

Méthodes d'essai communes aux câbles soumis au feu - Mesure de la densité de fumées dégagées par des câbles brûlant dans des conditions définies -- Partie 2: Procédure

**Ta slovenski standard je istoveten z: EN 50268-2:1999**

#### **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

**SIST EN 50268-2:2000**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 50268-2**

September 1999

ICS 13.220.40; 29.060.20

Supersedes HD 606.2 S1:1992

English version

**Common test methods for cables under fire conditions - Measurement of  
smoke density of cables burning under defined conditions  
Part 2: Procedure**

Méthodes d'essai communes aux  
câbles soumis au feu  
Mesure de la densité de fumées  
dégagées par des câbles brûlant  
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Allgemeine Prüfverfahren für das  
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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.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, 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**

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC20 'Electric Cables', and agreed at its Dublin meeting (April 1997).

The text of the draft was submitted to the Unique Acceptance Procedure and approved by CENELEC as EN 50268-1 on 1999-04-01.

This European Standard supersedes HD 606.2 S1:1992

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) 2000-04-01
- latest date by which national standards conflicting with the EN have to be withdrawn (dow) 2001-04-01

Annexes designated 'informative' are given for information only. In this standard annexes A and B are informative.

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## 1 Scope

EN 50268 specifies a method of test for measurement of smoke density of cables burning under defined conditions. It is suitable for electric insulated conductor or cable, or optical cables. Part 1 specifies the apparatus and Part 2 specifies procedure. This standard includes an Informative Annex of recommended requirements for compliance.

NOTE Experience has shown that the test protocol is not suitable for some cables that exceed 70 mm overall diameter. In such cases the manufacturer should be consulted.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 50268-1 : Common test methods for cables under fire conditions. Measurement of smoke density of cables burning under defined conditions. Part 1: Apparatus.

EN 60695-4 : Fire hazard testing - Part 4 : Terminology concerning fire tests

NOTE IEC 60695 is in the course of re-numbering its Parts and Sections. This will also affect the equivalent ENs.

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**3 Definitions** <https://standards.iteh.ai/catalog/standards/sist/08c4b6f6-8235-4f22-9d79-f21bd8494370/sist-en-50268-2-2000>

For the purposes of this Part 2 of EN 50268 the definitions in EN 60695-4 apply.

## 4 Test apparatus

The test procedure defined in this Part 2 of EN 50268 shall be carried out using the test apparatus, i.e. test enclosure, photometric system and standard fire source, given in EN 50268-1.

## 5 Test assembly

### 5.1 Cable test pieces

These shall consist of one or more samples of cable 1,00 m  $\pm$  0,05 m long which shall be carefully straightened and then conditioned for at least 16 h at 23° C  $\pm$  5°C.

## 5.2 Cable selection and assembly

### 5.2.1 Selection of number of test pieces

Overall diameter of the cable ( $D$ ) mm	Number of test pieces	
	Cables	Bundles <sup>(4)</sup>
$D > 40$	1	-
$20 < D \leq 40$	2	-
$10 < D \leq 20$	3	-
$5 < D \leq 10$	$N_1^{(1)(3)}$	-
$1 \leq D \leq 5$	-	$N_2^{(2)(3)}$

Notes:

(1)  $N_1 = \frac{45}{D}$  cables

(2)  $N_2 = \frac{45}{3D}$  bundles

(3) The value of  $N_1$  and  $N_2$  shall be rounded downwards to the integer to give the number of cables or bundles.

(4) Each bundle shall consist of seven cables twisted together with a lay between  $20 D$  and  $30 D$  and bound with two turns of approximately 0,5 mm diameter wire in the centre and at every 100 mm each side from the centre (see figure 1)

### 5.2.2 Assembly of test pieces

The test pieces shall remain in situ during the test as follows:

— cables or bundles shall be bound together at the ends, and at 300 mm from each end, at which place they shall be clamped to the support by means of wire binders.

NOTE Depending upon construction, small cables and flexible cables may be subject to movement during the test. In these cases it is also recommended that the cables or bundles are bound with two turns of approximately 0,5 mm diameter wire in the centre and at every 100 mm each side from the centre. Alternatively, the cables or bundles may be tensioned at one or both ends by means of an appropriate device, for example spring or weight.

### 5.3 Positioning of test pieces

The tray containing the alcohol shall be supported above the ground surface to permit air circulation around and beneath the tray. The test pieces (cables or bundles) shall be laid touching in a horizontal position and centred above the tray so that the distance between the underneath of the test pieces and the bottom of the tray is  $150 \text{ mm} \pm 5 \text{ mm}$  (see figure 2).

## 6 Test procedure

NOTE Before each test it may be necessary to clean the windows of the photometric system to regain 100% light transmission after stabilisation of the voltage (see also clause A.2 of Annex A of EN 50268-1).

6.1 Immediately before commencing a test, the temperature within the cube shall be in the range of  $25^\circ\text{C} \pm 5^\circ\text{C}$  when measured at the internal door surface at a height of 1,5 m to 2,0 m and a minimum of 0,2 m from the walls.

6.2 Before a test, carry out one blank test as defined in 8 of EN 50268-1 to preheat the test enclosure if necessary.

6.3 For the test, the fire source shall be as defined in 6 of EN 50268-1.

6.4 With the test samples supported above the tray, start the air circulation and ignite the alcohol. Make sure that all the persons leave the cube immediately, and that the door is closed.

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6.5 The test is considered as ended when there is no decrease in light transmittance for five minutes after the fire source has extinguished or when the test duration reaches 40 minutes.

6.6 Record the minimum light transmittance.

NOTE If it is required to use information on smoke density for wider hazard evaluation or fire safety engineering purposes, it may be necessary to calculate absorbance levels. Guidance on such calculations is given in Annex A.

6.7 Extract the combustion products at the end of each test.

## 7 Evaluation of test results

The requirement shall be as given in the relevant cable specification.

NOTE If no value is given in the relevant cable specification it is recommended that the recommendation in Annex B be adopted as a minimum.

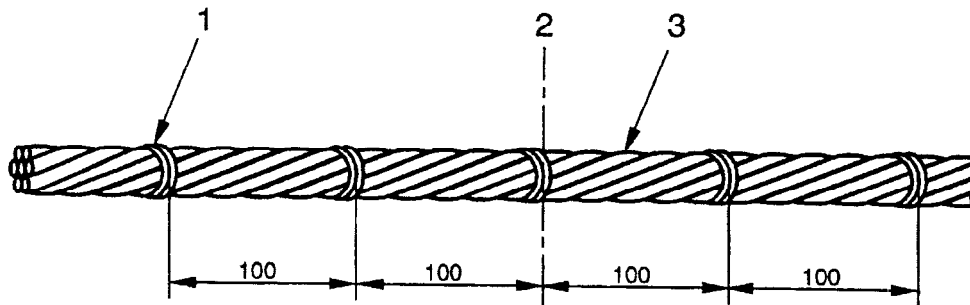
## 8 Retest procedure

In case of dispute a further two tests shall be undertaken using similar cables.

Both of these test results shall comply with the requirements of clause 7.

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Key:

1. Wire binder
2. Centre
3. Number of test pieces = 7

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Dimensions in millimetres

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**Figure 1 — Method of binding for cable bundles**