
**Tekstilije - Gorljivost materialov za markize, velike šotore in sorodne izdelke -
Nagnjenost k vžigu**

Textiles - Burning behaviour of materials for marquees, large tents and related products -
Ease of ignition

Textilien - Brennverhalten von Materialien für Überdachungen, große Zelte und
entsprechende Erzeugnisse - Entzündbarkeit

Textiles - Comportement au feu des marquises, tentes de grandes dimensions et
produits apparentés - Allumabilité

[SIST EN 14115:2002](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

[https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

[24e456d4049c/sist-en-14115-2002](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

Ta slovenski standard je istoveten z: EN 14115:2001

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
59.080.30	Tkanine	Textile fabrics

SIST EN 14115:2002

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14115:2002

<https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002>

EUROPEAN STANDARD

EN 14115

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2001

ICS 13.220.40; 59.080.30

English version

Textiles - Burning behaviour of materials for marquees, large tents and related products - Ease of ignition

Textiles - Comportement au feu des marquises, tentes de grandes dimensions et produits apparentés - Allumabilité

Textilien - Brennverhalten von Markisen, grossen Zelten und ähnlichen Erzeugnissen - Zündfähigkeit

This European Standard was approved by CEN on 30 September 2001.

CEN 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 Management Centre or to any CEN 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 CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

SIST EN 14115:2002

<https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
1 Scope	4
2 Normative reference(s)	4
3 Terms and definitions	4
4 Principle	4
5 Apparatus	5
6 Test specimen	6
7 Conditioning	6
8 Test procedure	7
9 Test report	8
Annex A (informative) Calibration of electric burner	9

ITC STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14115:2002

<https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002>

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 14115:2002](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

<https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002>

EN 14115:2001 (E)**1 Scope**

This standard specifies a test method for the burning behaviour of industrial and technical textiles used for tarpaulins, large tents, marquees, related structures, airducts, etc.

It is not intended to apply to materials used for small camping tents, lining materials nor any other internal features, nor to awnings.

This standard is not suitable for the linings used inside large tents and marquees.

NOTE Information on the reproducibility and repeatability of the method will be introduced later.

2 Normative reference(s)

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 (including amendments).

ISO 4880, *Burning behaviour of textiles and textile products - Vocabulary*

3 Terms and definitions

iTeh STANDARD PREVIEW
(standards.iteh.ai)

For the purposes of this European Standard the terms and definitions in ISO 4880 and the following term and definition apply.

[SIST EN 14115:2002](#)

<https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002>

3.1 industrial and technical textiles

any textile which can be used for industrial or technical purposes. The definition does not include textiles for general purposes such as curtains, drapes, protective clothing, upholstery or bedding

4 Principle

Test specimens are subjected under specified conditions, to the dual effect of:

- a) heat radiation;
- b) hot gases flowing over the surface of the test specimens in order to encourage any spread or propagation of the flame.

A flame is used to ignite any gases emitted. The effects of ignition are noted and the extent of damage is measured.

5 Apparatus

NOTE Unless otherwise specified, all dimensions quoted are to a tolerance of ± 1 mm.

5.1 Test apparatus for example as shown in Figures 1 to 5 with additional data given in subsequent details comprising:

5.1.1 A metal structure, consisting basically of a solid baseplate and two uprights acting as slides for the arrangement supporting the test specimen. The vertical rectangular face of this support, which is positioned opposite the heater, measures nominally 130 mm wide and 100 mm high. The test specimen support arms form an angle of 30° with the horizontal.

5.1.2 A 500 W electric heater, comprising:

5.1.2.1 A ceramic body¹ with the following dimensions:

- height 130 mm
- inside diameter at the top 31 mm
- outside diameter close to the top 59 mm
- outside diameter at mid-height 62 mm
- outside diameter 30 mm from base 65 mm
- outside diameter of enlarged base 93,5 mm

5.1.2.2 A ceramic removable sleeve¹. This sleeve is 130 mm high and approximately 3 mm thick and is located within the ceramic body described in 5.1.2.1. It is provided with a 500 W heating element. On the outside surface it has eight vertical projections approximately 3 mm thick. Inside, a metal strip component is used to stabilize the air temperature.

5.1.2.3 A metal base, approximately 160 mm in diameter and 30 mm high, provides a three point fixing for the ceramic body (see 5.1.2.1) and the sleeve (5.1.2.2), the latter entering 5 mm into the metal base. This fixing is designed so that the assembly is eccentric and the minimum horizontal distance from its base to the edge of the metal base is 5 mm. Eight holes 10 mm diameter are provided in the vertical cylindrical part of the metal base to serve as an inlet for the air which, after having circulated within the heater, issues from its upper part.

5.1.3 Fresh air flow adjuster plate, comprising a plate of non-combustible material¹, 310 mm long, 210 mm wide, 8 mm thick, with insulating values of:

- thermal conductivity $\lambda \leq (0,20 \pm 0,05) \text{ W/(m } ^\circ\text{K)}$
- volumic mass $\rho = (850 \pm 80) \text{ kg/m}^3$
- calorific capacity $c = (900 \pm 30) \text{ J/(kg } ^\circ\text{K)}$

¹ Details of sources of supply may be obtained from National Standards Institutions.

EN 14115:2001 (E)

This plate has a hole suitable for the heater to pass through and, in the centre of its small side, a rectangular slot 125 mm long and 10 mm wide. The adjuster plate is positioned horizontally 90 mm below the upper edge of the heater so that it is in contact with the side of the metal frame (5.1.1) to leave an opening area of 1250 mm² for the fresh air to pass through.

In addition, the plate protects the base of the heater from any contamination due to combustion of the materials.

5.1.4 Test specimen support grid, comprising a frame 600 mm long and 160 mm wide, made from steel rod 4 mm in diameter (see Figure 4). Spikes, 10 mm long, are welded onto this grid and used for holding the test specimen.

5.1.5 A plate of non-metallic non-combustible material, insulating values as (5.1.3), 300 mm long, 180 mm wide, 8 mm thick placed over the test specimen and contacting the spikes on the grid-type support. This directs the flow of hot gases when parts of the test specimen are destroyed.

5.1.6 A burner arrangement, comprising a burner nozzle pilot flame supplied with (95 ± 7) ml/min of propane gas welded onto a metal tube which pivots about a fixed point on one of the frame uprights. The end of the burner nozzle is shaped to provide a flat flame (fish-tail type) 20 mm wide and (30 ± 5) mm high. In the operating position, the flame shall contact the surface of the test specimen at a distance of 15 mm from the vertical axis of the heater (see Figure 2), the burner nozzle being perpendicular to the plane of the test specimen.

5.1.7 Hood - The test apparatus is placed below a hood which is provided with a forced ventilation system. This hood has a suitable opening in its upper part for evacuating to the outside any gases, fumes and smoke produced by combustion.

5.2 Ancillary test equipment : A wattmeter, variable transformer, voltage regulator, chronometer, and a method for measuring air speed.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

6 Test specimen**6.1 Shape and dimensions**

[SIST EN 14115:2002](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

[https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-](https://standards.iteh.ai/catalog/standards/sist/b42cb764-742a-4164-b226-24e456d4049c/sist-en-14115-2002)

Each test specimen shall be a rectangle 600 mm x 180 mm.

6.2 Number of test specimens

At least four test specimens per sample are required (see 8.9).

7 Conditioning

Before testing, place the specimens inside a chamber maintained at a temperature of (20 ± 5) °C and a relative humidity (50 ± 15) % for at least 24 h.

If testing is not carried out immediately after conditioning, place the conditioned test specimens in a sealed container. Each specimen shall be tested within 3 min after removing it from the conditioning atmosphere or sealed container.

8 Test procedure

WARNING NOTE: When test specimens burn, they may release toxic and noxious gases likely to endanger the health of operatives. It is therefore necessary to take all appropriate precautions.

8.1 Verify the apparatus is ready for use and correctly calibrated (see annex A) and carry out the test in still air inside the hood. The air speed, measured at the centre of the upper edge of the grid when installed with a sample, shall not exceed 0,2 m/s.

8.2 Arrange the heater and its base on the baseplate of the metal frame (5.1.1) so that the distance, measured in accordance with the vertical axis of the heater, between its upper edge and the surface of the test specimen, is (30 ± 1) mm. The horizontal distance between the axis of the heater and the lower edge of the test specimen shall be 75 mm (see Figure 1).

8.3 Fix the test specimen onto the support grid, using the spikes provided for the purpose, so that the surface of the test specimen is in contact with the grid.

8.4 When the electric heater is providing a stable output, at least 60 min after having been switched on, quickly position the support grid and the test specimen on its support and simultaneously start the chronometer (zero time for the test).

8.5 Immediately lower the plate of non-combustible material (5.1.5) onto the top of the test specimen.

8.6 20 s after commencing the test, bring the flame of the burner arrangement into the operating position under the test specimen and hold it in that position for 5 s before removing it. Repeat this operation once after 45 s, and then every 30 s until 5 min have elapsed.

Consequently the application times of the pilot flame are:

20 s – 45 s – 1 min 15 s – 1 min 45 s – 2 min 15 s – 2 min 45 s – 3 min 15 s – 3 min 45 s - 4 min 15 s – 4 min 45 s.

Under no circumstances should the pilot flame be applied while the material is burning.

8.7 The test shall run for at least 5 min but shall be prolonged until the test specimen is fully extinguished. During the test, note the following:

- a) if the material ignites, the time at which ignition first occurred, eg. 45 s, 1 min 15 s, etc, the duration of flaming from ignition time till the end after having removed the pilot flame;
- b) if there is any fall of droplets or particles, whether or not they are burning;
- c) the description of the parts of the specimen destroyed or damaged;
- d) the type of flame propagation, eg. total or partial, and the persistence and propagation of glowing areas;
- e) the issue of smoke or fumes and their characteristics (amount, appearance).

8.8 After testing, leave the test specimen on the grid and measure the following:

- a) the maximum length of the destroyed area, from the lower edge of the test specimen;
- b) the maximum width of the destroyed area covering that part of the test specimen between 450 mm and 600 mm from its lower edge.

The destroyed area is assumed to be every part of the material which is missing, totally charred, showing an important loss of resistance, or a deeply damaged aspect. The areas only blackened or superficially damaged due to the heat action shall not be taken into account.