



**SLOVENSKI STANDARD**  
**SIST EN 15426:2008**  
**01-maj-2008**

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Candles - Specification for sooting behaviour

Kerzen - Spezifikation für das Rußverhalten

Bougies - Spécification relative de l'indice de suie

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Ta slovenski standard je istoveten z: **EN 15426:2007**  
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English Version

## Candles - Specification for sooting behaviour

Bougies - Spécification relative de l'indice de suie

Kerzen - Spezifikation für das Rußverhalten

This European Standard was approved by CEN on 23 September 2007.

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 CEN 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 15426:2007) has been prepared by Technical Committee CEN BT/TF 164 “Candle safety”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

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## Introduction

Candles have accompanied mankind for more than 2 000 years serving above all as a light source. Closely connected to the development history of the candle are the efforts made to improve its quality and its safety in use. Discussions in the past and present over possible self-forming, harmful emissions and fires caused by unsafe candles and/or inappropriate use during the burning of candles have led to consumer concern for these issues.

This European Standard describes the requirements and a simple method for measuring the sooting behaviour of candles. The soot index obtained by this procedure may be considered as characteristic of the sooting behaviour of the type of candle tested.

The soot which is emitted from a candle is collected on a glass plate throughout a defined period. Afterwards the attenuation of light intensity caused by soot precipitation is quantified in a measuring chamber.

This method helps to ensure a reasonable degree of safety for normal use, thereby improving personal safety.

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## 1 Scope

This European Standard specifies requirements and the test method for evaluating the sooting behaviour of burning candles. It is applicable to single wick candles with a diameter up to 100 mm or equivalent cross sectional area intended to be burned indoors.

## 2 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

### 2.1

#### **base material**

intended fuel source for a candle flame

### 2.2

#### **candle**

one or more combustible wicks supported by a material that constitutes a fuel, which is solid, semisolid or quasi-rigid at room temperature (20 °C to 27 °C)

NOTE 1 It can also contain additives, which are used for colour, odour, stability, or to modify the burning characteristics; the combined function of which is to sustain a light-producing flame.

NOTE 2 Including candles with decoration attached to or contained within the candle.

### 2.3

#### **container candle**

candle that is produced in and will be burned in a container

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### 2.4

#### **measuring period**

time the candle is burned collecting soot

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### 2.5

#### **molten fuel pool**

portion of the wax or fuel pool of a candle that is in the liquid form when the candle is burning

### 2.6

#### **soot**

solid, carbon enriched particles, which come into existence when the burning material in the flame is incompletely burned and which are subsequently released into the atmosphere

### 2.7

#### **soot index**

index number for the evaluation of the sooting behaviour of candles

### 2.8

#### **soot test cycle**

total length of time the candle is burned during the stabilizing period, measuring period, including pause

### 2.9

#### **stabilizing period**

period of time the candle is burned without collecting soot

### 2.10

#### **tea light**

cylindrical candle that is burned in a container, which may be suitable to keep vessels containing coffee, tea or other liquids warm, by using a warming stove

NOTE 1 Typical dimensions of a tea light are 38 mm in diameter and 15 mm in height.

NOTE 2 A tea light container can be made from metal, glass or plastic.

**2.11**

**total measuring time**

total time of all measuring periods

**2.12**

**wax**

crystalline, plastic solid or semi-solid material at 25 °C consisting of a mixture of hydrocarbons and/or hydrocarbon derivatives

NOTE Wax melts typically at temperatures equal to or greater than 40 °C and becomes a low viscosity liquid. Waxes may be of mineral (particularly petroleum), vegetable, animal (including insect), or synthetic origin.

**2.13**

**wick**

object that delivers fuel to a flame through the process of capillary action

**3 Sooting behaviour**

When tested in accordance with clause 8, the average soot index from three tests (samples) shall be less than 1,0/h, no individual sample shall exceed 2,0/h.

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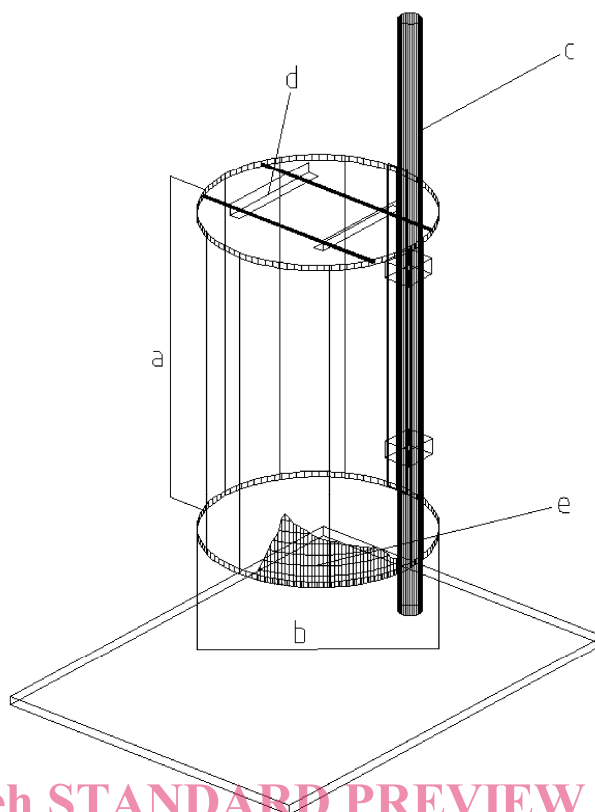
**4 Test equipment and apparatus** (standards.iteh.ai)

**4.1 A wire mesh cylinder RMG 2.1<sup>1)</sup>** fixed to a stand of which the height can be adjusted, with a fixture for a glass plate (see Figure 1). The cylinder has a minimum height of 300 mm and consists of wire mesh with a permeability of (60 ± 5) %.

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1) Wire mesh cylinder RMG 2.1 is the trade name of a product supplied by Heil Metalle GmbH, Germany. This information is given for the convenience of the user of this European Standard and does not constitute an endorsement by CEN of the product named. Equivalent products may be used if they can be shown to lead to the same results.





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- a min. height = 300 mm
- b diameter, Type 1:  $d = 230$  mm; Type 2:  $d = 300$  mm
- c stand
- d glass plate
- e wire mesh

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**Figure 1 — Wire mesh cylinder**

**4.2 Measurement unit** consisting of an indication instrument and a measuring chamber. The measuring chamber consists of the light source, fixture for the heat resisting glass plate, a cover with light reflecting interior coating with a photodiode integrated in it, which is connected with the indication instrument (see Figure 2).

NOTE First operation and calibration of the measurement unit refer to Annex 1.