

BS EN ISO 12863:2010+A1:2016

Incorporating corrigendum February 2011



BSI Standards Publication

Standard test method for assessing the ignition propensity of cigarettes (ISO 12863:2010)

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National foreword

This British Standard is the UK implementation of EN ISO 12863:2010+A1:2016. It is identical to ISO 12863:2010, incorporating corrigendum February 2011 and amendment 1:2016. It supersedes BS EN ISO 12863:2010 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee FSH/21, Reaction to fire tests, to Subcommittee FSH/21/15, Reaction to fire tests - Cigarette ignition propensity test.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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31 August 2016	Implementation of ISO amendment 1:2016 with CEN endorsement A1:2016: Annex F added

English Version

Standard test method for assessing the ignition propensity of cigarettes (ISO 12863:2010)

Méthode d'essai normalisée pour évaluer le potentiel incendiaire des cigarettes (ISO 12863:2010)

Normprüfverfahren zur Beurteilung der Zündneigung von Zigaretten (ISO 12863:2010)

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Foreword

The text of **ISO 12863:2010** has been prepared by Technical Committee **ISO/TC 92 “Fire safety”** of the International Organization for Standardization (ISO) and has been taken over as EN ISO 12863:2010 by Technical Committee CEN/TC 401 “Project Committee - Reduced Ignition Propensity Cigarettes” 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of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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Endorsement notice

The text of ISO 12863:2010 has been approved by CEN as a EN ISO 12863:2010 without any modification.

Foreword to amendment A1

This document (EN ISO 12863:2010/A1:2016) has been prepared by Technical Committee ISO/TC 92 “Fire safety” in collaboration with Technical Committee CEN/TC 401 “Reduced Ignition Propensity Cigarettes” the secretariat of which is held by DIN.

This Amendment to the European Standard EN ISO 12863:2010 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2017, and conflicting national standards shall be withdrawn at the latest by January 2017.

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Endorsement notice

The text of ISO 12863:2010/Amd 1:2016 has been approved by CEN as EN ISO 12863:2010/A1:2016 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 12863 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 1, *Fire initiation and growth*.

This International Standard is based, with permission from ASTM International, on ASTM International E2187, *Standard Test Method for Measuring the Ignition Strength of Cigarettes*, copyright ASTM International.

Introduction

A very common initiating event in a fatal fire is the dropping of a cigarette onto a bed or piece of upholstered furniture. The burning cigarette heats the furnishing materials to the point where smouldering combustion begins, perhaps followed by a transition to flaming combustion. Since limiting the frequency of ignitions is a principal approach to reducing fire loss, it is desirable to establish a test method for the propensity of a cigarette to ignite soft furnishings.

Standard test method for assessing the ignition propensity of cigarettes

WARNING — This International Standard involves the use of combustible materials that are exposed to ignition sources. The burning materials emit toxic combustion products. The user shall take proper precautions to avoid thermal injury and inhalation of combustion products. The user shall ensure that all burning has ceased before safely discarding test materials.

1 Scope

This International Standard provides a standard assessment of the capability of a cigarette, positioned on one of three standard substrates, to extinguish or to generate sufficient heat to continue burning, and thus potentially cause ignition of bedding or upholstered furniture. This International Standard is applicable to factory-made cigarettes that burn along the length of a tobacco column. This is a performance-based standard; it does not prescribe any design features of the cigarette that might lead to improved or degraded performance in the test method. The output of this method has been correlated with the potential for cigarettes to ignite upholstered furniture.

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.

ASTM E2187, *Standard Test Method for Measuring the Ignition Strength of Cigarettes*

ISO 8243, *Cigarettes — Sampling*

ISO 13943, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13943 and the following apply.

3.1

determination

single measurement involving a lit cigarette placed on a selected substrate

3.2

full-length burn

outcome of a determination in which the cigarette continues to burn to or past the front plane of the tipping paper (filter tip cigarettes) or past the tips of the metal pins for non-filter tip cigarettes

3.3

no full-length burn

outcome of a determination in which the cigarette ceases to burn before reaching the front plane of the tipping paper (filter tip cigarettes) or the tips of the metal pins for non-filter tip cigarettes

3.4

substrate (for cigarette testing)

horizontal surface consisting of layers of filter paper on which a test cigarette is placed for testing

3.5

test

set of 40 determinations

4 General principle

This test method measures the probability that a cigarette, placed on a heat absorbing substrate, will generate sufficient heat to maintain burning of the tobacco column and potentially initiate a fire. Each determination consists of placing a lit cigarette on one of three standard substrates (3, 10, or 15 layers of filter paper). Observation is made of whether or not the cigarette continues to burn nominally the length of the tobacco column, as defined in this International Standard. Forty determinations (comprising a test) are performed to obtain the relative probability that the cigarette will continue burning despite heat abstraction by the substrate.

For use of semi-automated/fully automated systems to perform the test, see Annex F.

5 Apparatus

5.1 General description

An apparatus consists of a holder for the filter paper substrate, a metal rim to compress the layers of filter paper, a clear enclosure to protect the test specimens from air currents, and associated accessories, as defined in this clause. The materials of construction shall meet occupational health and safety requirements. The apparatus shall be placed under a fume hood to minimize the exposure of personnel to combustion products. Technical drawings of the test chamber are provided in Annex A.

5.2 Test and conditioning environment

5.2.1 General

Cigarettes and filter paper shall be conditioned in one of the two ways described in 5.2.2 and 5.2.3.

5.2.2 Conditioning room

An environmental conditioning room shall be maintained which provides an area adequate for conditioning both cigarettes and filter paper specimens. This room shall be capable of maintaining a relative humidity of $(55 \pm 5) \%$ and a temperature of $(23 \pm 3) ^\circ\text{C}$ and shall be continuously monitored. The room in which the tests are conducted, which may also be the conditioning room, shall be maintained within the same temperature and relative humidity ranges.

NOTE These conditioning requirements are consistent with those used for fire safety testing. Other types of testing can require different conditioning requirements.

5.2.3 Conditioning box

Alternatively, cigarettes and filter paper shall be stored in a box of sufficient size to hold the needed quantities of filter paper and cigarettes. The interior of the box shall be maintained at the same temperature and relative humidity conditions as in 5.2.2 and shall be continuously monitored. A tray containing a saturated solution of sodium bromide (NaBr) in water will provide the appropriate relative humidity when the box temperature is as prescribed. The box shall be located convenient to the test chamber such that test materials shall not be exposed to a non-conditioned environment for more than 5 min between their removal from the box and the beginning of a determination.