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BS EN ISO 13927:2015



BSI Standards Publication

Plastics — Simple heat release test using a conical radiant heater and a thermopile detector

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This British Standard is the UK implementation of EN ISO 13927:2015. It supersedes BS EN ISO 13927:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/26, Burning behaviour of plastics and rubbers.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Plastics - Simple heat release test using a conical radiant heater and a thermopile detector (ISO 13927:2015)

Plastiques - Essai simple pour la détermination du débit calorifique au moyen d'un radiateur conique et d'une sonde à thermopile (ISO 13927:2015)

Kunststoffe - Einfache Prüfung der Wärmefreisetzung unter Anwendung eines kegelförmigen Strahlungsheizkörpers und einer Thermosäule als Detektor (ISO 13927:2015)

This European Standard was approved by CEN on 21 February 2015.

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-CENELEC Management Centre or to any CEN member.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN ISO 13927:2015) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

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.

This document supersedes EN ISO 13927:2003.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 13927:2015 has been approved by CEN as EN ISO 13927:2015 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary Information](#)

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 4, *Burning behaviour*.

This second edition cancels and replaces the first edition (ISO 13927:2001), which has been technically revised.

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Introduction

Fire is a complex phenomenon; its behaviour and effects depend upon a number of interrelated factors. The behaviour of materials and products depends upon the characteristics of the fire, the method of use of the materials, and the environment in which they are exposed (see also ISO 13943).

A test such as the one specified in this International Standard deals only with a simple representation of a particular aspect of the potential fire situation, typified by a radiant heat source, and it cannot alone provide any direct guidance on the behaviour or safety in fire. A test of this type can, however, be used for comparative purposes or to ensure the existence of a certain quality of performance (in this case, heat release from a composite material or an assembly) considered to have a bearing on fire performance generally. It would be wrong to attach any other meaning to performance in this test.

The attention of all users of this test is drawn to the warning that immediately precedes [Clause 10](#).

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Plastics — Simple heat release test using a conical radiant heater and a thermopile detector

1 Scope

This International Standard specifies a method suitable for the production control or product development purposes for assessing the heat release rate of essentially flat products exposed in the horizontal orientation to controlled levels of radiant heating with an external igniter. The heat release rate is determined by the use of a thermopile instead of the more accurate oxygen consumption techniques. The time to ignition (sustained flaming) is also measured in this test. Test specimen mass loss can also be measured optionally.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 13943, *Fire safety — Vocabulary*

ISO 14934-3, *Fire tests — Calibration and use of heat flux meters — Part 3: Secondary calibration method*

3 Terms and definitions

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

3.1

essentially flat surface

surface whose irregularity from a plane does not exceed ± 1 mm

3.2

ignition

onset of *sustained flaming* (3.7)

3.3

material

single substance or uniformly dispersed mixture, for example, metal, stone, timber, concrete, mineral fibre, or polymer

3.4

orientation

plane in which the exposed face of the specimen is located during testing either vertical or horizontal face upwards

3.5

product

material, composite or assembly, about which information is required

3.6

test specimen

representative piece of the product which is to be tested together with any substrate or surface treatment

Note 1 to entry: The test specimen may include an air gap.