BS EN 60695-4:2012

BSI Standards Publication

Fire hazard testing

Part 4: Terminology concerning fire tests for electrotechnical products

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National foreword

This British Standard is the UK implementation of EN 60695-4:2012. It is identical to IEC 60695-4:2012. It supersedes BS EN 60695-4:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/89, Fire hazard testing.

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

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Published by BSI Standards Limited 2012

ISBN 978 0 580 71773 4

ICS 01.040.13; 29.020

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2012.

Amendments issued since publication

Amd. No.	Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60695-4

August 2012

ICS 01.040.13; 29.020

Supersedes EN 60695-4:2006

English version

Fire hazard testing - Part 4: Terminology concerning fire tests for electrotechnical products

(IEC 60695-4:2012)

Essais relatifs aux risques du feu - Partie 4: Terminologie relative aux essais au feu pour les produits électrotechniques (CEI 60695-4:2012)

Prüfungen zur Beurteilung der Brandgefahr - Teil 4: Terminologie der Brandprüfungen elektrotechnischer Produkte (IEC 60695-4:2012)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60695-4:2012 E

Foreword

The text of document 89/1098/FDIS, future edition 4 of IEC 60695-4, prepared by IEC/TC 89 "Fibre hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-4:2012.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-03-13
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-06-13

This document supersedes EN 60695-4:2006.

EN 60695-4:2012 includes the following significant technical changes with respect to EN 60695-4:2006:

- the terms and definitions that are not specifically electrotechnical and that are either identical or equivalent to those in EN ISO 13943:2010 have been deleted;
- the terms and definitions that are specifically electrotechnical and that are in EN ISO 13943:2010 have been included for the convenience of the user;
- some new terms have been included.

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

Endorsement notice

The text of the International Standard IEC 60695-4:2012 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC Guide 104	2010	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
IEC 60050	Series	International Electrotechnical Vocabulary	-	-
ISO 13943	2008	Fire safety - Vocabulary	EN ISO 13943	2010
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion in standards	-	-

CONTENTS

FIRE HAZARD TESTING –

Part 4: Terminology concerning fire tests for electrotechnical products

1 Scope

The terms and definitions in this standard are applicable to fire tests for electrotechnical products.

This basic safety publication is intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

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.

IEC Guide 104:2010, *The preparation of safety publications and the use of basic safety publications and group safety publications*

IEC 60050, *International Electrotechnical vocabulary*

ISO 13943:2008, *Fire safety – Vocabulary*

ISO/IEC Guide 51:1999, *Safety aspects – Guidelines for their inclusion in standards*

3 Terms and definitions

3.1 Use of the term “item”

For the purposes of this document, the English term “item” is used in a general meaning to represent any single object or assembly of objects, and may cover, for example, material, product, assembly, structure or building, as required in the context of any individual definition. If the “item” under consideration is a test specimen then the term “test specimen” is used.

3.2 Other terms and definitions

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

NOTE Terms and definitions that are specifically electrotechnical and that are in ISO 13943:2008 have been included below for the convenience of the user.

3.2.1
abnormal heat
⟨electrotechnical⟩ heat that is additional to that resulting from use under normal conditions, up to and including that which causes a fire

[SOURCE: ISO 13943:2008, definition 4.1]

3.2.2
arc resistance
⟨electrotechnical⟩ ability of an electrically insulating material to resist the influence of an electric arc, under specified conditions

Note 1 to entry: The arc resistance is identified by the length of the arc, the absence or presence of a conducting path and the burning or damage of the test specimen.

[SOURCE: ISO 13943:2008, definition 4.13]

3.2.3
arc tracking
tracking
⟨electrotechnical⟩ progressive formation of conducting paths that are produced on the surface and/or within a solid insulating material, due to the combined effects of electric stress and electrolytic contamination

SEE: **tracking resistance** (3.2.27)

[SOURCE: ISO 13943:2008, definition 4.342]

3.2.4
confirmatory test
procedure intended as a diagnostic indicator to reveal anomalous behaviour or conditions in a test flame, burner or associated hardware

3.2.5
enclosure
housing affording the type and degree of protection suitable for the intended application

[SOURCE: IEC 60050-195:1998, 195-02-35]

3.2.6
enclosure
⟨electrotechnical⟩ external casing protecting the electrical and mechanical parts of apparatus

Note 1 to entry: The term excludes cables.

[SOURCE: ISO 13943:2008, definition 4.78]

3.2.7
end product
product that is ready for use without modification

NOTE 1 to entry: An end product can be a component of another end product.

3.2.8
end product fire test
fire test that is carried out on an end product and is described in a relevant specification.

Note 1 to entry: End product fire tests may be small-scale, intermediate-scale, large-scale or real-scale.

3.2.9
extent of combustion
⟨electrotechnical⟩ maximum length of a test specimen that has been destroyed by combustion or pyrolysis, under specified test conditions, excluding any region damaged only by deformation

[SOURCE: ISO 13943:2008, definition 4.91]

3.2.10
fire hazard assessment
evaluation of the possible causes of fire, the possibility and nature of subsequent fire growth, and the possible consequences of fire

3.2.11
flame stabilizer
assembly normally fitted to the top of a standard laboratory Bunsen or Tirrill burner intended to mitigate the destabilizing effect of the turbulent mixing of flame gases with the ambient air, by providing an intervening layer of gas having an intermediate velocity between the ambient still air and the faster flame gases

3.2.12
flameproof
⟨electrotechnical⟩ class of methods used to prevent the ignition, caused by electrical equipment, of explosive atmospheres

SEE: **flameproof enclosure** (3.2.13)

Note 1 to entry: The term is deprecated in other applications.

[SOURCE: ISO 13943:2008, definition 4.145]

3.2.13
flameproof enclosure
⟨electrotechnical⟩ enclosure that can withstand the pressure developed during an explosion of the atmosphere within the enclosure and can prevent the transmission of the explosion to the atmosphere surrounding the enclosure

[SOURCE: ISO 13943:2008, definition 4.146]

3.2.14
flashover
⟨electrotechnical⟩ electrical discharge that occurs over the surface of a solid dielectric in a gaseous or liquid medium

[SOURCE: ISO 13943:2008, definition 4.157]

3.2.15
incident heat flux
heat flux received by the surface of a test specimen

3.2.16
insignificant mass
insufficient combustible material to constitute a fire hazard

Note 1 to entry A default value is 2 g, but product TCs may assign a different value appropriate to the product type and scale.

3.2.17
intrinsically safe circuit
⟨electrotechnical⟩ circuit in which any spark or thermal effect is incapable of causing ignition of a mixture of flammable or combustible material in air under specified test conditions

Note 1 to entry: The specified test conditions include normal operation and specified fault conditions.

[SOURCE: ISO 13943:2008, definition 4.201]

3.2.18
intrinsically safe system
⟨electrotechnical⟩ assembly in which all electrical circuits that can be used in hazardous (classified) locations are intrinsically safe circuits

[SOURCE: ISO 13943:2008, definition 4.202]

3.2.19
lethal toxic potency
toxic potency where the specific toxic effect is death

SEE: **lethal concentration 50**, LC_{50} (ISO 13943:2008, 4.207)
lethal exposure dose 50, LCt_{50} (ISO 13943:2008, 4.208)

3.2.20
minimum critical relative humidity
⟨electrotechnical⟩ relative humidity that causes leakage current to exceed a defined level under specified test conditions

[SOURCE: ISO 13943:2008, definition 4.229]

3.2.21
preselection
process of assessing and choosing candidate materials, components or subassemblies for making an end product

3.2.22
qualitative fire test
fire test which is either:

a) a pass/fail test; or
b) a test which categorizes the behaviour of the test specimen by determining its position in a rank order of performance

3.2.23
quantitative fire test
fire test which takes into account the circumstances of product use in which the test conditions are based on, or are relatable to, the circumstances of use of the test specimen, and which measures a parameter or parameters, expressed in well defined terms and using rational scientific units, which can be used in the quantitative assessment of fire risk

3.2.24
self-heating
⟨electrotechnical⟩ heat generated by a powered electrotechnical product resulting in a rise in temperature in the product

[SOURCE: ISO 13943:2008, definition 4.288]

3.2.25
small part
part with a dimension less than the minimum specified for the relevant test method

3.2.26
spark, noun
⟨electrotechnical⟩ luminous discharge resulting from the dielectric breakdown of a gas between two electrodes

[SOURCE: ISO 13943:2008, definition 4.300]

3.2.27
tracking resistance
⟨electrotechnical⟩ ability of a material to withstand a test voltage, under specified conditions, without tracking and without the occurrence of flame

[SOURCE: ISO 13943:2008, definition 4.343]

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BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

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