

Fire hazard testing for electrotechnical products

Part 1. Glossary of terms

Essais relatifs aux risques de feu des produits
électrotechniques
Partie 1. Glossaire des termes

Prüfung zur Beurteilung der Brandgefahr für
technische Erzeugnisse
Teil 1. Begriffe

Committees responsible for this British Standard

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British Cable Makers' Confederation
British Electrical Systems Association (BEAMA Ltd.)
British Plastics Federation
British Telecommunications plc
EEA (the Association of Electronics, Telecommunications and Business Equipment Industries)
Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
Electricity Supply Industry in United Kingdom
Electronic Components Industry Federation
ERA Technology Ltd.
Home Office
Lighting Industry Federation Ltd.
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National Supervising Inspectorate
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Contents

		Page
	Committees responsible	Inside front cover
	National foreword	ii
1	Scope	1
2	Terms and definitions	1
3	Index of terms	11

National foreword

This British Standard has been prepared under the direction of the General Electrotechnical Standards Policy Committee. It is identical with IEC 695-4 : 1989 'Fire hazard testing. Part 4 : Terminology concerning fire tests', published by the International Electrotechnical Commission (IEC) and supersedes BS 6458 : Part 1 : 1984 which is withdrawn.

The international standard does not give any relation between this Part of this standard and the other published and envisaged Parts. It is, however, already clear that the structure of the international standard will differ from that of this British Standard. Other Parts of this British Standard are as follows.

Part 2 Methods of test

- Section: 2.1 Glow-wire test
(Identical with IEC 695-2-1)
- Section 2.2 Needle-flame test
(Identical with IEC 695-2-2)
- Section 2.3 Bad connection test with heaters
(Identical with IEC 695-2-3)
- Section 2.4 ¹⁾ Bunsen-type flame test

Part 3. Guidance on fire hazard testing (Envisaged as future work)

CENELEC Harmonization document HD 444 relates to IEC Publication 695-2 and Sections in Part 2 of this standard indicate their relation both to the individual parts of the IEC Publication 695-2 and also to HD 444.

This standard is applicable to electrotechnical products, compliance or equipment, for which it is required to assess the fire hazard.

This Part of this standard gives a general introduction and definitions. Part 2 of this standard, in the form of separately published Sections each dealing with one specific method of test, specifies methods of test which are suitable for comparing fire hazards. Part 3 ¹⁾ of this standard will give guidance on the application of the different test methods of Part 2 in particular circumstances.

NOTE 1. There is no correlation between the results obtained by the use of various methods of test in Part 2.

NOTE 2. The result of fire hazard tests, particularly where the complete equipment is not tested, is not a direct indication of fire safety in practice. Attention is drawn to the guidance in BS 6336.

NOTE 3. Toxicity, even as a result of the test, is not capable of assessment by the methods of test in Part 2.

This British Standard is intended to help specification writers, designers, manufacturers and users to prepare and use specifications for electrotechnical products that can ignite, burn or overheat to take due account of any fire hazard and to develop products for which the fire hazard is acceptable.

In preparing product specifications one of the methods of test in Part 2 should be specified and care should always be taken to avoid any implication that fire tests in isolation can guarantee fire safety.

The acceptability of a fire hazard will depend on factors which may be practical, financial, social or psychological. In some cases, in which a fire might give rise to a disaster or to widespread public disquiet, there may be a need to take account of a decision on acceptability by a regulatory or control authority with statutory powers.

¹⁾ In preparation.

Apart from the methods of test in Part 2 of this standard, there is also a considerable number of methods of fire tests for materials, for example in BS 3924 and BS 6334 for electrical insulating materials, and BS 2011 : Part 2.1Pz for electrotechnical products. BS 2011 : Part 2.1Pz is being retained for a period because of its widespread use in industry; it is, however, the intention that it should be withdrawn at some date yet to be determined.

Warning. Part 2 of this standard calls for the use of procedures that may be injurious to health if adequate precautions are not taken. It refers only to the technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage. (See also the warning notes in the Sections of Part 2).

Compliance with a British Standard does not of itself confer immunity from legal obligations.

FIRE HAZARD TESTING

Part 4: Terminology concerning fire tests

1. Scope

The terms defined in this standard are applicable to fire tests.

2. Terms and definitions

2.1 *Afterflame*

Persistence of flaming of a material under specified test conditions, after the ignition source has been removed.

2.2 *Afterflame time*

The length of time for which an afterflame persists (also called duration of flaming).

2.3 *Afterglow*

Persistence of glowing of a material after the ignition source has been removed and/or after cessation of flaming.

2.4 *Afterglow time*

The time during which an afterglow persists.

2.5 *Arc resistance*

The ability of an insulating material to resist the influence of an electric arc along its surface, under specified test conditions.

Note.- The arc resistance is identified by the length of the arc, the absence or presence of a conducting path, the burning or damage of the specimen under test.

2.6 *Area burning rate*

Surface area of a material burned divided by time as specified in the test procedure.

2.7 *Ash*

Mineral residues produced by complete combustion.

2.8 *Burn (intransitive verb)*

To undergo combustion.

2.9 *Burned area*

The area of a material that has been destroyed by combustion or pyrolysis, under specified test conditions, excluding any area damaged only by deformation (see also Sub-clause 2.18).

2.10 *Bursting*

The violent rupture of an object due to overpressure and/or stress within it or upon it.

2.11 *Char (noun)*

Carbonaceous residue resulting from pyrolysis or incomplete combustion.

2.12 *Char (verb)*

To form char.

2.13 *Clinker*

A solid agglomerate of residues formed by either complete or incomplete combustion and which results from complete or partial melting.

2.14 *Combustible*

Capable of burning.

2.15 *Combustion*

Exothermic reaction of a combustible substance with an oxidizer, generally accompanied by flames and/or glowing and/or emission of smoke.

2.16 *Compartment*

A subdivision of a building bounded by elements of construction all of which have a specified fire resistance.

2.17 *Composite material*

A product consisting of two or more discrete materials.

2.18 *Damaged area*

The total of the area of a material affected permanently by thermal phenomena under specified test conditions: loss of material, deformation, softening, melting, charring, combustion, pyrolysis, etc. (see also Sub-clause 2.9).

2.19 *Damaged length*

The maximum extent, in a specified direction, of the damaged area of a material under specified test conditions (see also Sub-clause 2.25).