

Fire hazard testing for electrotechnical products —

Part 2: Methods of test —

Section 2.1 Glow-wire test —

[IEC title : Fire hazard testing
Part 2: Test methods. Glow-wire test
and guidance]

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the General Electrotechnical Engineering Standards Committee (GEL/-) to Technical Committee GEL/15 upon which the following bodies were represented:

- British Radio and Electronic Equipment Manufacturers' Association
- British Telecom
- Directorate of Telecommunications
- Electricity Supply Industry in England and Wales
- Electronic Components Industry Federation
- Electronic Engineering Association
- Engineering Equipment and Materials Users' Association
- Ministry of Defence
- National Supervising Inspectorate
- Scientific Instrument Manufacturers' Association (BEAMA)
- Society of British Aerospace Companies Limited
- Society of Environmental Engineers
- Telecommunication Engineering and Manufacturing Association (TEMA)

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Manufacturers of Domestic Electrical Appliances
- British Electrical Systems Association (BEAMA)
- British Plastics Federation
- Business Equipment Trade Association
- Control and Automation Manufacturers' Association (BEAMA)
- ERA Technology Ltd
- Electric Cable Makers' Confederation
- Electrical Installation Equipment Manufacturers' Association (BEAMA)
- Home Office
- Institution of Electrical Engineers

This British Standard, having been prepared under the direction of the General Electrotechnical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 January 1984

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National foreword

This British Standard has been prepared under the direction of the General Electrotechnical Engineering Standards Committee. It is identical with IEC Publication 695-2-1:1980 “Fire hazard testing. Part 2: Test methods. Glow-wire test and guidance”, published by the International Electrotechnical Commission (IEC) and is the subject of CENELEC HD 444.2.1.

The international standard does not give any relation between this Part of the 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 1: General introduction (in course of preparation);*
- *Part 2: Methods of test;*
- *Section 2.2: Needle-flame test;*
- *Section 2.3: Bad-connection test with heaters (in course of preparation);*
- *Section 2.4: Bunsen-type flame test (in course of preparation);*
- *Part 3: Guidance on fire hazard testing (envisaged as future work).*

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used in Figure 1 as a decimal marker; in British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever page numbers are quoted with reference to figures, they are the IEC page numbers.

For the purposes of this Part of this standard, the scope is effectively contained in the third paragraph of clause 1 “Introduction and scope.”

Cross-references

International standard ^a	Corresponding British Standard
IEC 51:1973	BS 89:1977 Specification for direct acting indicating electrical measuring instruments and their accessories (Identical)
IEC 584-1	BS 4937 International thermocouple tables (Technically equivalent)
ISO 4046-1978	BS 3203:1979 Glossary of paper, board, pulp and related terms (Identical)

^a Undated in the text.

Additional information. The following comments are given as guidance for the application in the United Kingdom of this standard which deals only with the method of test and the apparatus required. In drafting specifications calling for the use of this method of test, the following notes should be taken into account.

NOTE 1 Clause 3 refers to the specimen but gives no clear indication of its nature. This will have to be defined in a “product” specification referring to this test.

NOTE 2 The third paragraph of clause 3 should not be understood as meaning that clause 4 is applicable only to “separate specimens”. Where a “separate specimen” is to be used, the “product” specification will require to give the necessary details.

NOTE 3 As the reference to the accuracy of the measuring instrument in the fourth paragraph of clause 4 is only a recommendation, the “product” specification will have to confirm the requirement.

NOTE 4 At the end of the ninth paragraph of clause 4 reference is made to the specimen being “mounted as in normal use”. This should be understood as “mounted as specified in the standard for the electrotechnical product, where this forms the specimen, or, where the specimen is only part of an electrotechnical product, so that the manner of mounting and surroundings of the specimen are as close as possible to those applicable to normal use in an electrotechnical product”.

NOTE 5 In the last paragraph of clause 4 the reference to “tissue paper” in the second line should be understood as being to “wrapping tissue” as defined in 6.86 of ISO standard 4046. (This point is made clear in the French text of the IEC standard.)

NOTE 6 The duration of application quoted in clause 5 is only a recommendation and the requirement is to be given in “product” specifications calling for this test. These specifications will also require to specify the test temperature, as no requirement is given in this clause.

NOTE 7 In clause 6, reference is made to a method of calibrating the thermocouple by using a “foil of silver”. This is a similar method of determination to that given in BS 6334:1983 (= IEC 707:1981) and it should be understood that the silver foil is placed on the glow-wire before the latter is heated to 960 °C. The note to clause 6 is expressed as a requirement but says nothing about the determination of the need for calibration; this will require to be done in “product” specifications calling for this test.

NOTE 8 As no general indication of the significance of untoleranced values is given in this standard, the duration of storage in clause 7 should be understood as “at least 24 h”.

NOTE 9 The only requirement in clause 8 is for the visual examination of the specimen. No criteria are stated and these will require to be given in “product” specifications referring to this test, together with any required physical/electrical parameters.

NOTE 10 In 9.4 provision is made for the repeating of the test in cases of doubt. As clause 11 gives no indication of the manner in which the results from the three specimens would then be evaluated, this will require to be stated in a “product” specification calling for this test.

NOTE 11 As the 30 s period mentioned in the first line of clause 10 has no stated tolerance, this should be understood as being at least 30 s. Even if, as permitted by clause 5, a duration of application other than the preferred value is chosen, this period should be regarded as unchanged.

NOTE 12 The list of details required by clause 12 should not be regarded as exhaustive, for example there is no reference to the distance greater than the 200 ± 5 mm quoted in clause 4. Writers of “product” specifications calling for this test should ensure that all necessary additional details are included. Item d) is applicable only when, because of the impossibility of making a test on a sub-assembly or component within the equipment (see clause 3) a test is being made on a separate specimen.

NOTE 13 Figure 1 gives tolerances on some values but not on others. In the absence of any general statement on the significance of untoleranced values, the tolerance should be taken as being ± 5 % on untoleranced values of 20 mm and over, rounded to the nearest integer, and ± 10 % on small values, again rounded to the nearest integer.

NOTE 14 The guidance in Appendix A based on the work of CEE (International Commission for Conformity Certification of Electrical Equipment) is of a very general nature and should be supplemented by further guidance given in “product” specifications calling for this test.

NOTE 15 Should a component be such that it is essentially solid electrical insulating material, attention is drawn to the method of test in BS 6334:1983 (IEC 707:1981) “Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source”.

WARNING NOTE. This British Standard calls for the use of procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage. (See also the warning note in clause 9).

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.