

Loss Prevention Standard

LPS 1196: Issue 1.2

Requirements and tests for exposed surfaces having reaction to fire classification of Class 0 and Class 1

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PARTICIPATING ORGANISATIONS

This standard was approved by Technical Panel D of the Loss Prevention Certification Board. The following organisations participated:

Association of British Insurers	(ABI)
Department of the Environment	(DoE)
Association of County Councils	(ACC)
Confederation of British Industry	(CBI)
Association of Specialist Fire Protection Contractors and Manufacturers	(ASFPCM)
Chief and Assistant Chief Fire Officers' Association	(CACFOA)

REVISION OF LOSS PREVENTION STANDARDS

Loss Prevention Standards will be revised by issue of revised editions or amendments. Details will be posted on our website at www.redbooklive.com

Technical or other changes which affect the requirements for the approval or certification of the product or service will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments. (See amendments table on page 12)

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

USERS OF LOSS PREVENTION STANDARDS SHOULD ENSURE THAT THEY POSSESS THE LATEST ISSUE AND ALL AMENDMENTS.

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FOREWORD

This standard identifies the Loss Prevention Certification Board's (LPCB) evaluation and testing practices for the certification and listing of suitable products. This issue of LPS 1196 has been jointly drafted by the Loss Prevention Certification Board and Certifire. It is technically equivalent to Certifire document P019. Certification is based on the following criteria:

- i. Satisfactory product performance and construction, in accordance with the requirements of the LPCB and the manufacturer's specifications.
- ii. Verification of the establishment and maintenance of the manufacturer's quality management systems in accordance with ISO 9001, Quality Systems.
- iii. Satisfactory product service experience.

NOTES

Compliance with this LPS does not of itself confer immunity from legal obligations. Users of LPSs should ensure that they possess the latest issue and all amendments.

LPCB welcomes comments of a technical or editorial nature and these should be addressed to "the Technical Director" at enquiries@breglobal.co.uk.

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1 SCOPE

This document stipulates the constructional, test and performance requirements for exposed surfaces with reaction to fire classifications of class 0 and class 1.

This scheme relates to Regulations B2, B3 and B4 of Schedule 1 of the Building Regulations 1991 dealing with Fire Spread. The scheme is applicable to products satisfying the requirements of Class 1 or Class 0, as defined in paragraphs A11 and A12 of Certificated Document B, 'Fire Safety', to the Building Regulations 1991 and when the products are used in accordance with the provisions of the Certificated Document.

The scheme is also applicable to products satisfying the requirements of Class 1 or Class 0, as defined in the Building Standards (Scotland) Regulations 1990, the Building Regulations (Northern Ireland) 1990, or any other national regulations, provided that they use the test methods specified in BS 476 : Part 6 and/or BS 476 : Part 7. In such cases the product shall be assessed against the requirements of each appropriate regulation.

For compliance with LPC Design Guide additional durability tests may be required.

2 DEFINITIONS

2.1 Class 1

A Class 1 classification is assigned by testing in accordance with BS 476 : Part 7 : 1987. This specifies a method of test for measuring the lateral spread of flame along the surface of a specimen of a product orientated in the vertical position. A Class 1 classification is the best of four performance levels defined within the Standard.

2.2 Class 0

A Class 0 classification is assigned to Class 1 products which have a fire propagation index (I) of not more than 12 and a sub-index (i_1) of not more than 6 when tested in accordance with BS 476 : Part 6 : 1989. This test takes account of the combined effect of factors such as the ignition characteristics, the amount and the rate of heat release and the thermal properties of the product in relation to their ability to accelerate the rate of fire growth.

Notes :

1. Paragraph A12 of Certificated Document B states that a Class 0 classification may also be assigned to products composed throughout of materials of limited combustibility.
2. The test methods referred to above include provisions for assigning various suffixes and prefixes to the classification to denote specified testing conditions or behaviour of specimens. Such designations are not referred to in Certificated

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Document B. Products whose test classification bears the suffix R or prefix D will be accepted for certification provided that, in the latter case, the certificate denotes the product was tested in a modified form. Products whose test classification bears the suffix Y will not be generally accepted for certification.

3. Thermoplastic products are additionally subject to the restrictions of paragraph A17 of Certificated Document B.

2.3 **Non-combustible materials**

- a. Any material which when tested to BS 476 : Part 11 : 1982 (1988) does not flame or cause any rise in temperature on either the centre (specimen) or furnace thermocouples.
- b. Totally inorganic materials such as concrete, fired clay, ceramics, metals, plaster and masonry containing more than 1 per cent by weight or volume of organic materials.
- c. Concrete bricks or blocks meeting BS 6073 : Part 1 : 1981.
- d. Products classified as non-combustible under BS 476 : Part 4 : 1970.

2.4 **Materials of limited combustibility**

- a. Any non-combustible material.
- b. Any material of density 300kg/m³ or more, which when tested to BS 476 : Part 11 : 1982 (1988) does not flame and the rise in temperature on the furnace thermocouple is not more than 20°C.
- c. Any material with a non-combustible core at least 8mm thick having combustible facings (on one or both sides) not more than 0.5mm thick.
- d. Any material of density less than 300kg/m³ which, when tested to BS 476 : Part 11 does not flame for more than 10 seconds and the rise in temperature on the centre (specimen) thermocouple is not more than 35°C and on the furnace thermocouple is not more than 25°C.

3 **GENERAL REQUIREMENTS**

- 3.1 To gain certification for a product the manufacturer must satisfy the requirements of this Schedule.
- 3.2 The suitability of a product will be determined by assessment of its ability to meet the requirements of Class 1 or Class 0 as defined. This should be demonstrated, initially, by type testing to the specified Standards followed by on-going audit testing of selected specimens. Any limitations identified by the assessment as to the applicability of the

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test information to different end use conditions, or product variants, will be identified in the certification.

- 3.3 Companies applying for certification must supply full details of the product, or product range, including all variables known to the manufacturer or considered by LPCB as likely to affect its fire performance. Any test reports submitted in support of the application must be accompanied by a written statement confirming that they relate to representative samples of the product as currently formulated.

4 ASSESSMENT

- 4.1 A detailed assessment of the ability of the product to comply with the requirements for a Class 1 or Class 0 designation, as appropriate, shall be conducted by LPCB. The assessment shall, if the product is supplied in different forms, consider all of the variables (eg: thickness, colour, density, formulation) which may affect the performance of the product under the appropriate test(s). Where different end uses of the product may influence the performance of the product under the appropriate test(s), these shall also be considered. Where the end use of the product may vary and are outside the control of the applicant, typical end uses shall be considered. In the case of facings (eg: wall coverings or coatings) the effect of different substrates and/or adhesives or fixings shall be considered. The circumstances under which the appropriate classification may be claimed for the product shall be clearly defined during the assessment and, if appropriate, the applicant must demonstrate that they relate to specified practical end-use conditions.
- 4.2 The assessment shall determine the adequacy of any existing test data in satisfying the requirements and shall detail any further tests to investigate the effect of any variables and/or to provide additional data. Where possible, "worst case" conditions will be identified; alternatively, specimens incorporating different extremes and, if appropriate, intermediate conditions will be specified. It is not always possible to test a product in its actual finished form and in such cases consideration will be given to the construction of the specimens which will provide an acceptable representation of the actual product.
- 4.3 If the assessment determines that all required type testing information is available to demonstrate that all variables of the product comply with the appropriate classification, certification may be granted on the basis of the information supplied. If additional type testing is required LPCB shall inform the applicant. The assessment will be resumed after verification tests have been completed.
- 4.4 The assessment determining that certification can be granted shall indicate compliance with a Class 1 and/or Class 0 classification, as appropriate, and shall clearly identify the extent of certification. This shall include the regulations complied with and any known limitations of use which could materially affect the subsequent fire performance of the product. Unless sufficient evidence exists regarding the effects over a range of variables such as thickness, density, colour, etc., the individual dimensions, values, colours or other variables covered by the certification shall be stated.

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- 4.5 The assessment shall detail an audit testing programme following the principles given in Section 6.

5 TYPE TESTING REQUIREMENTS

- 5.1 Tests shall be conducted in accordance with BS 476 : Part 6 : 1989 and/or BS 476 : Part 7 : 1987, as relevant to the classification concerned, at a laboratory recognised by LPCB for conducting those tests. The results shall be in accordance with the limits defined.
- 5.2 The number of tests and nature of specimens shall be as determined to be required by LPCB (see Section 4).
- 5.3 Existing test data may be accepted at LPCB's discretion. Generally only tests conducted or reviewed by a suitably accredited UKAS laboratory not more than five years before the date of application will be acceptable.
- 5.4 LPCB may, at its discretion, require to select samples and/or witness the testing in support of the application.

6 AUDIT TESTING

In order to ensure continuing compliance with Class 1 or Class 0 requirements, regular audit testing shall be conducted. Details of the audit test programme will be issued to the applicant before formal certification is granted.

6.1 Frequency

The frequency of audit testing shall normally be twice per year, timed to coincide with quality audit inspections. The frequency may be increased, at the discretion of LPCB, who will inform the certificated company of the reasons for the decision. The first audit test will be undertaken before a certificate is issued although LPCB may, at its discretion, waive this requirement, provided it is satisfied that there is sufficient recent type test data available on production specimens. In such instances, the first audit test shall be conducted within six months of certification being granted.

6.2 Sample Selection

- 6.2.1 The nature, number and type of samples shall be determined by taking into account the type of product, number of variables within the product range, the volume of products produced, the extent of in-house testing, the results of the type testing and any other relevant factors. Additional instructions regarding the procedure to be followed to ensure that an adequate mix of variables is included over an agreed period may be specified. In the case of board materials, the requirement will normally be for a specified number of specimens, possibly from pre-determined positions within the board, for each sample at a specified thickness.

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- 6.2.2 Where special preparation of test specimens (eg: production of modified, laminated, mechanically secured or coated specimens) is necessary, a preparation procedure to be followed by the certificated company shall be specified in the audit test procedure instructions. The procedure shall, where possible, include appropriate precautions to ensure that the produced specimens are fully representative of the actual production and that the certificated company, or an associated third party, does not have the opportunity to artificially modify the product to give an improved fire test performance.
- 6.2.3 In some cases, (eg: bonding of a wall covering to a substrate) the testing laboratory shall be instructed to conduct or arrange a specimen preparation. In certain cases it will be necessary for specimen preparation to be conducted by a specialist organisation (eg: manufacture of high pressure laminates). All specimen preparation procedures and/or instructions shall normally be devised in consultation with the certificated company and shall be clearly documented in the relevant quality audit procedure.
- 6.2.4 Samples will be selected by a LPCB representative. Sufficient material shall be provided to enable a full test in accordance with BS 476 : Part 7 : 1987 and/or BS 476 : Part 6 : 1989 to be conducted, as relevant, on each sample selected. The selection procedure shall be such as to enable the test specimens to be transported to the appropriate test laboratory quickly and with no possibility of substitution or modification of the selected samples. This will normally involve a unique marking of the selected samples by the LPCB representative, packing of the specimens ready for despatch by a carrier and a unique marking of the outside of the packing by the LPCB representative. The specimens shall be despatched by the certificated company to the testing laboratory within a reasonable time specified by LPCB.

6.3 **Testing Procedure**

The testing laboratory shall, if required, conduct or arrange for specimen preparation as detailed in the relevant quality audit procedure, and shall condition the test specimens as specified in BS 476 : Part 7 : 1987 and BS 476 : Part 6 : 1989. The following procedure shall be adopted for each individual sample selected, as relevant to the classification concerned.

BS 476 : Part 7 : 1987

- (a) Test two specimens in accordance with the BS 476 : Part 7 : 1987 test procedure. If a flame spread of 100mm or less is recorded, with no transitory flaming or flashing beyond that point, no further specimens need to be tested, otherwise proceed to (b) below.
- (b) Test an additional two specimens in accordance with the BS 476 : Part 6 : 1987 test procedure. If a flame spread of 130mm or less is recorded on all four specimens which have been tested with no transitory flaming or flashing beyond that point no further specimens need to be tested otherwise proceed to (c) below.

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- (c) Test a final two specimens to complete a full test in accordance with BS 476 : Part 7 : 1987.

BS 476 : Part 6 : 1989

- (a) Test two specimens in accordance with the BS 476 : Part 6 : 1989 test procedure. If a fire propagation index (I) of less than 10 and a sub-index (i1) of less than 5 is obtained for both specimens, no further specimens need to be tested, otherwise proceed to (b) below.
- (b) Test an additional specimen to complete a full test in accordance with BS 476 : Part 6 : 1989.

If in either test the specimen behaves in such a manner as to render the test on that specimen to be invalid (ie: prevents a result being obtained), as described in the relevant standard, the full test(s) shall be conducted in accordance with the standard.

6.4 **Reporting of Results**

The test laboratory shall report the results of the test(s) as determined during the above procedures directly to LPCB, which will act as sponsor for such tests and shall simultaneously supply a copy of the report to the certificated company. If the certificated company wishes to use the audit test procedure to obtain a formal test report (eg: by completing a test which would be discontinued in accordance with the above procedures) this may be arranged by prior mutual consent between the certificated company and LPCB.

6.5 **Action in Case of Failure**

- 6.5.1 If any test result is obtained which fails to meet the certificated classification, the reason for the failure shall be immediately investigated by the certificated company and LPCB. Where the product is confirmed to be below the certificated performance level, the certificated company's documented quality procedures relating to a product which fails to achieve the claimed performance level shall be implemented.
- 6.5.2 The certificated company shall be responsible for correcting any identified deficiencies in the product and a repeat audit test, as decided by LPCB, shall be conducted as soon as possible. This repeat audit test will not be regarded as part of the agreed frequency of normal audit testing.
- 6.5.3 If a further failure is experienced during the repeat audit testing, LPCB shall normally suspend certification under the scheme until it can be satisfactorily demonstrated by the certificated company that the product and/or procedures have been modified to enable consistent acceptable results to be obtained. Where relevant, LPCB shall ensure that agreed modifications are verified at the next quality surveillance.
- 6.5.4 After any failure the future frequency and/or specimen selection requirements of audit testing shall be reviewed by LPCB.

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7 IDENTIFICATION

- 7.1 The certificate will be issued individually to the manufacturer and included in the certification body's register of products. It will include a description of the product and details of the scope of certification.
- 7.2 Products or packaging shall be suitably marked with the relevant certification reference number.
- 7.3 Each product shall be despatched with a data sheet which clearly includes the following details as appropriate:
- The reference number and scope of certification.
 - The storage and handling provisions.
 - The installation instructions.

8 INSTALLATION AND MAINTENANCE

This scheme does not cover installation or maintenance.

9 QUALITY

The manufacturer shall demonstrate to the satisfaction of the LPCB that the quality management system under which the products are manufactured and installed is in general accordance with ISO 9001.

The manufacturing base and installation procedure shall be initially inspected by the LPCB for the purpose of certification and shall be inspected twice a year for the duration of certification.

10 POST INSTALLATION INSPECTION

The LPCB reserves the right to make random inspections of installed certificated products. Any certificated products found not to comply with the specification agreed with the LPCB shall be investigated and may result in loss of certification.

11 COMPLAINTS

Complaints about LPCB certificated products shall be investigated by the LPCB. Where complaints are not resolved to the satisfaction of the LPCB, the LPCB may withdraw certification.

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12 LISTING

Certificated products will be listed in the annual LPCB Certificated Fire and Security Products and Services list.

13 PUBLICATIONS REFERRED TO

- BS 476 : Part 4 : 1970 (1984) "Fire tests on building materials and structures"
Non-combustibility test for materials
- BS 476 : Part 6 : 1989 "Fire tests on building materials and structures"
"Method of test for fire propagation of products"
- BS 476 : Part 7 : 1987 "Fire tests on building materials and structures."
"Method for classification of the surface spread of flame of products"
- BS 476 : Part 11 : 1982 (1988) "Fire tests on building materials and structures"
"Method for assessing the heat emission from building materials"
- BS 6073 : Part 1 : 1981 "Precast concrete masonry units"
"Specification for precast concrete masonry units"
- ISO 9001 "Quality management systems – Requirements"

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Amendments Issued Since Publication

DOCUMENT NO.	AMENDMENT DETAILS	SIGNATURE	DATE
LPS 1196-1.0	Copyright and address change	CJA	24/10/01
LPS 1196-1.0	Further copyright changes	CJA	30/07/02
LPS 1196-1.1	Further copyright changes	CJA	19/09/05
LPS 1196-1.2	<ol style="list-style-type: none"> 1. New front cover 2. Title added to header 3. Contents page moved to Page 1 and updated page numbers 4. Revision of Loss Prevention Standards added on Page 2 5. 'Introduction' text moved to be the Foreword together with Notes added on Page 3 6. Update of references to ISO 9001 standard (Clauses: Foreword, 9, 13) 7. Clause 2.2 title changed to Class 0 to align with body text 8. References to ISO 9000 deleted - this standard has been withdrawn and is replaced by ISO 9001 9. Repagination 10. Update to copyright information 	DC	Jan. 2014