

Loss Prevention Standard

LPS 1182: Issue 2.2

Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains

This Loss Prevention Standard is the property of BRE Global Ltd. and is made publicly available for information purposes only. Its use for testing, assessment, certification or approval must be in accordance with LPCB internal procedures and requires interpretation by BRE Global Ltd, LPCB and BRE experts. Any party wishing to use or reproduce this Loss Prevention Standard to offer testing, assessment, certification or approval must apply to BRE Global for training, assessment and a licence; a fee will normally be charged. BRE Global Ltd. will not unreasonably refuse such applications. BRE Global Ltd. accepts no responsibility for any un-authorised use or distribution by others of this Loss Prevention Standard and may take legal action to prevent such unauthorised use or distribution

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 1 of 10

CONTENTS	PAGE
REVISION OF LOSS PREVENTION STANDARDS	2
FOREWORD	3
1. SCOPE	4
2. DEFINITION	4
3. REQUIREMENTS	5
4. LABELLING	6
5. INSTALLATION	6
6. QUALITY	6
7. POST INSTALLATION INSPECTION	6
8. COMPLAINTS	7
9. CERTIFICATE	7
10. LISTING	7
APPENDIX A : TESTS	8
PUBLICATIONS REFERRED TO	9
Table of amendments issued since publication	10

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 2 of 10

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 10)

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.

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 3 of 10

FOREWORD

Loss Prevention Certification Board Approval Schemes are supported by the Association of British Insurers (ABI) and Lloyd's.

Approval is based on:

- a. Satisfactory product test performance in accordance with the requirements of the LPCB.
- b. Verification, of the establishment and maintenance of the manufacturers and/or installers quality management system in strict accordance with BS 5750 : Part 1 : 1987 or BS 5750 : Part 2 : 1987.
- c. 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.

The BRE Trust, a registered charity, owns BRE and BRE Global. BRE Global and LPCB (part of BRE Global) test, assess, certificate and list products and services within the fire and security sectors. For further information on our services please contact BRE Global, Watford, Herts. WD25 9XX or e-mail to enquiries@breglobal.co.uk

Listed products and services appear in the LPCB "List of Approved Products and Services" which may be viewed on our website: www.redbooklive.com or by downloading the LPCB Red Book App from the App Store (for iPhone and iPad), from Google Play (for Android devices) or from the Windows Store (for Windows 8 Phones and Tablets from 2014).

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 4 of 10

1. SCOPE

This Loss Prevention Standard (LPS) specifies the constructional, test, performance and installation requirements for fixed fabric smoke curtains, fixed sheet metal smoke curtains and powered smoke curtains installed in constructions complying with the LPC "Code of Practice for the Construction of Buildings".

2. DEFINITIONS

2.1 Fabric Smoke Curtains

For the purpose of this document fabric smoke curtains shall be made of non-fire-supporting material and used for the containment of cool smoke and gases (up to 600°C).

2.2 Sheet Metal Smoke Curtains

For the purpose of this document sheet metal smoke curtains shall be made essentially of metal but may include other non-combustible materials. These curtains shall be used for the containment of hot smoke, gases and fire (up to 1000°C).

2.3 Powered Smoke Curtains

For the purpose of this document powered smoke curtains shall be made of non-fire-supporting material, used for the containment of cool smoke and gases (up to 600°C), which automatically lower into position via an appropriate detection system.

2.4 Class O

Class O materials are either:

materials of limited combustibility complying with BS 476 : Part 11 : 1988

or

materials which are non-combustible complying with BS 476 : Part 4 : 1984

or

Class 1 materials complying with BS 476 : Part 7 : 1971 which in addition have a fire propagation index (I) of not more than 12 and (i₁) of not more than 6 to BS 476 Part 6 :1981.

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 5 of 10

3. REQUIREMENTS

3.1 Fire Resistance

3.1.1 General

All tests shall be undertaken by the LPCB or agreed with the LPCB prior to testing at an LPCB approved test facility.

Historical test data may be acceptable provided it can be demonstrated that the test methods used were acceptable and the test information obtained is adequate.

3.1.2 Fire Curtains

Fire curtains shall be made either of sheet steel or fabrics which have been tested to and achieved Class O as defined in The Building Regulations 1985 (see definitions 2.4).

The supporting systems shall be made of steel and shall be designed so that the bending stresses do not exceed 12.1 N/mm^2 and shear stresses do not exceed 0.7 of this value.

Alternatively the whole system can be tested to BS 476 : Part 20 : 1987 (see Appendix A).

3.1.3 Smoke Curtains - Grade A

Smoke curtains shall be tested in accordance with BS 7346 : Part 3 : 1990 (see Appendix A).

The supporting systems shall be made of steel and shall be designed so that the bending stresses do not exceed 130 N/mm^2 and shear stresses do not 0.7 of this value.

3.1.4 Smoke Curtains - Grade B

Smoke curtains shall be made of fabrics which have been tested to BS 476 : Part 7 : 1971 and achieved class 1.

The supporting systems shall be made of steel and shall be designed so that internal stresses do not exceed 130 N/mm^2 .

3.2 Test Sample

Test samples shall be representative. Where more than one material is used each material type shall be tested.

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 6 of 10

3.3 **Smoke**

The design of the curtain and its supports shall not add significantly to the smoke logging of the building.

3.4 **Scope of Approval**

The approval will be limited to the material type tested.

4. **LABELLING**

All LPCB approved products shall be marked with the LPCB logo, approval reference number, manufacturer's name and date of manufacture.

5. **INSTALLATION**

LPCB approved products shall only be installed by the manufacturer or his authorised agent.

LPCB approved products shall be installed in accordance with the specification agreed by the LPCB. Where this is not the case, the LPCB logo and reference number shall be omitted and the system shall not be considered as approved.

6. **QUALITY**

The manufacturer shall demonstrate to the satisfaction of the LPCB that the quality management systems under which the products are manufactured and installed is in accordance with BS 5750 : Part 1 or 2 : 1987, or equivalent.

In addition to the six monthly surveillance visits required for the maintenance of the BS 5750 quality system a product audit shall be carried out annually for the duration of approval.

7. **POST INSTALLATION INSPECTION**

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

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 7 of 10

8. COMPLAINTS

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

9. CERTIFICATE

The manufacturer shall be issued with an LPCB approvals certificate stating the scope of approved products and their approvals reference numbers.

10. LISTING

Approved products will be listed in the annual LPCB List of Approved Products and Services.

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 8 of 10

APPENDIX A

Tests

- A.1 All fire resistance tests shall use the procedures and integrity criteria of BS 476 : Part 20 : 1987 with the following amendments.
- A.2 Fire curtains shall be tested using the time temperature curve from BS 476 : Part 20 : 1987.
- A.3 Smoke curtains shall be tested using the time temperature curve defined in BS 7346 : Part 3 : 1990.
- A.4 Positive pressure shall be maintained in the top half of the furnace.
- A.5 Furnace Dimensions and Additional Curtaining Loading.

Curtains with a maximum drape of under 3 metres will be tested in a 1m square furnace with a weight bar attached to the bottom to represent the weight of the missing curtain.

Curtains with a drape 3 metres and over will be tested in a 3m square furnace with a weight bar attached to the bottom to represent the weight of the missing curtain.

e.g. Curtain designed to have a drape of 5 metres
(curtain material weight 1kg/m²).

Furnace used 3m square	Missing length of curtain - 2m.
Weight of missing curtain	2kg/metre length.
Weight of normal drop bar	0.5kg/metre length.

Therefore total weight to be fixed to the bottom of the curtain for the test - 2.5kg/metre length.

- A.6 Adequate provision shall be made to prevent the curtain from being sucked into the furnace during the first 5 minutes of the test when the furnace pressure may fluctuate.
- A.7 Where curtains are designed to be used with side guides these shall be included in the test specimen.
- A.8 The gap integrity criteria shall not be used in the following situation:
- At the bottom of the curtain.
 - At the sides of the curtain where side guides not provided.

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 9 of 10

PUBLICATIONS REFERRED TO

LPC Code of Practice for the Construction of Buildings.

- BS 476 : Part 4 : 1984 "Non-combustibility test for materials".
- BS 476 : Part 6 : 1981 "Method of test for fire propagation for products".
- BS 476 : Part 7 : 1971 "Method for classification of the surface spread of flame of products".
- BS 476 : Part 11 : 1982 "Method for assessing the heat emission from building materials".
- BS 476 : Part 20 : 1987 "Fire Tests on Building Materials and Structures".
- BS 5750 : Part 1 : 1987 "Quality Systems Part 1 : Specification for design/development, production, installation and servicing".
- BS 5750 : Part 2 : 1987 "Quality Systems Part 2 : Specification for Production and Installation".
- BS 7346 : Part 3 : 1990 "Components for smoke and heat control systems. Specification for smoke curtains".

Issue 2.2	LOSS PREVENTION STANDARD	LPS 1182
Date: Jan. 2014	Requirements and tests for LPCB approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains	Page 10 of 10

Amendments Issued Since Publication

DOCUMENT NO.	AMENDMENT DETAILS	SIGNATURE	DATE
LPS 1182-2.0	Copyright and address change	CJA	24/10/01
LPS 1182-2.0	Further copyright changes	CJA	29/07/02
LPS 1182-2.1	Further copyright changes	CJA	16/09/05
LPS 1182-2.2	<ol style="list-style-type: none"> 1. New front cover 2. Title added to header 3. Contents page moved to Page 1 and updated 4. Revision of Loss Prevention Standards added to Page 2 5. Notes added on Page 3 6. Repagination 7. Update to copyright information 	DC	Jan. 2014

This standard was prepared by the Loss Prevention Certification Board