

Loss Prevention Standard



LPS 1204: Issue 3.0

REQUIREMENTS FOR FIRMS ENGAGED IN THE DESIGN, INSTALLATION, COMMISSIONING AND SERVICING OF GAS EXTINGUISHING SYSTEMS

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PARTICIPATING ORGANISATIONS

This standard was approved by the LPC Fire and Security Board and Expert Group B. The following organisations participated in the preparation of this standard:-

Association of British Insurers
Association of Building Engineers
Association of Chief Police Officers
Association for Specialist Fire Protection
British Automatic Fire Sprinkler Association
British Security Industry Association
BT Redcare
Chief Fire Officers Association
Door & Hardware Federation
Electrical Contractors Association
European Fire Sprinkler Network
Fire Industry Association
Health & Safety Executive
Metronet
Risk Engineering Data Exchange Group
Royal and Sun Alliance
Royal Institution of Chartered Surveyors

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REVISION OF LOSS PREVENTION STANDARDS

Loss Prevention Standards (LPSs) 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.

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 LPSs should ensure that they possess the latest issue and all amendments.

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FOREWORD

This Standard identifies the evaluation and / or testing practices undertaken by LPCB for the purposes of approval and listing of products and services. LPCB listing and approval of products and services is based on evidence acceptable to LPCB:-

- that the product or service meets the standard;
- that the manufacturer or service provider has staff, processes and systems in place to ensure that the product or service delivered meets the standard

and on:

- periodic audits of the manufacturer or service provider including testing as appropriate;
- compliance with the contract for LPCB listing and approval including agreement to rectify faults as appropriate;

The responsibility for ensuring compliance with the technical and managerial process and requirements for the product or service lies with the manufacturer, service provider or supplier.

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 obtained in hard copy or CD by telephoning +44 (0) 1923 664100

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1 INTRODUCTION

1.1 Benefits of the LPS 1204 scheme

The purpose of this standard is to set appropriate technical and quality standards to assure interested parties that gas extinguishing systems are properly designed, installed, commissioned and serviced to safeguard life and/or property. The standard identifies the Loss Prevention Certification Board (LPCB) evaluation practices for the approval and listing of suitable Firms.

This scheme has been prepared by an Expert Group drawn from installers, local government, insurers and clients to help:

- Clients select Firms.
- Ensure that gas extinguishing systems are appropriate for the occupancy and premises in which they are installed, and will operate reliably in the event of a fire.

It has been approved by the LPC (Fire & Security) Board.

1.2 Technical requirements

A full list of all the acceptable system standards is given in Appendix 1.

This document sets out the basis for approval of Firms under this scheme.

Key terms are defined in the glossary.

1.3 LPCB listing

All Firms approved by LPCB to carry out design, installation, commissioning and servicing of gas extinguishing systems will be listed in the LPCB "List of Approved Products and Services", together with details of the gas types and system trade names or equipment manufacturer's name they are approved to issue LPS 1204 Certificates of Conformity for.

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2 SCOPE

2.1 Scheme

This standard specifies the requirements of the Loss Prevention Certification Board (LPCB) for Firms engaged in the design, supply, installation, commissioning and servicing of gas extinguishing systems.

2.2 Application and assessment

An application form F468 is available from LPCB at enquiries@breglobal.co.uk.

Any listing awarded by LPCB remains valid only whilst the Firm continues to meet the scheme requirements as defined in this and related documents.

Where a Firm operates design, installation, commissioning and servicing work from more than one location, then separate approvals must be obtained for each office. Regional offices undertaking only sales and/or emergency service work are not covered by this scheme.

2.3 Use of LPCB marks

Details of how the mark may be used can be found in publication PN 103.

2.4 Change of company identity or particulars

The Firm should promptly notify the LPCB of any changes relating to their compliance with this scheme, including a change of company identity, legal entity, company registration or location. The Firm shall notify any changes using LPCB form BF053. For a change in ownership, detail can be found in publication PN 159.

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3 REQUIREMENTS FOR APPROVAL OF FIRMS

3.1 Scope of certification

The LPCB approval certificate issued to the Firm will clearly identify the gas types and associated equipment for which approval has been granted. Additional gas types and equipment may be added, see procedure PN007.

Certification

- a. Satisfactory evidence of system design, installation, commissioning and servicing capability for each gas type and manufacturer, in accordance with the requirements of LPCB.
- b. Verification of the establishment and maintenance of a quality management system in accordance with BS EN ISO 9001.

3.2 Continuity of involvement

The Firm shall provide satisfactory evidence of design, procurement, installation, commissioning and servicing of gas extinguishing systems over a continuous period of not less two years.

3.3 LPCB pre-certification inspections

Prior to certification, the Firm shall arrange for LPCB to inspect not less than two systems of each gas type for which certification is sought and for which handover has been completed. The systems to be inspected will be selected by LPCB from the Firm's completed F469 form. The inspection shall cover a review of the design, installation and commissioning of the selected systems. A review of the Firm's operating procedures will also be carried out.

3.4 Responsibility of the Firm

The LPS 1204 approved Firm will be responsible for the design, installation, commissioning and handover of the system and any subsequent warranty work. Where services are bought in, the Firm shall control and be responsible for:

- a. Assuring compliance with the appropriate system standard.
- b. Identifying and ensuring compatibility of the technical interface requirements of each element or component of the system.
- c. Advising Authorities Having Jurisdiction of departures from the system standard as referenced in clause 3.15.

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3.5 System standards

Unless otherwise required by the Client, all gas extinguishing systems shall be designed in accordance with the one of the system standards listed in Appendix 1. Where the client's specification does not meet the minimum requirements of this scheme, the Firm must not in any way claim or imply that the design or system meets the requirements of this scheme and must not issue an LPS 1204 Certificate of Conformity.

3.6 Number of staff

The Firm shall employ an adequate number of staff to ensure that only staff with adequate levels of knowledge and experience are used to carry out the design, installation, commissioning and servicing of gas extinguishing systems to the system standards applied and to the Firm's own quality management procedures.

3.7 Management system requirements

In order to ensure that gas extinguishing systems meet, and continue to meet, the requirements of this scheme, the Firm is required to maintain full control of their design, installation, commissioning and servicing processes through a management system approved by LPCB. The management system shall comply with ISO 9001.

Full details of the LPCB ISO 9001 certification process are set out in publication SD003 'Quality Management Systems Certification Scheme'.

The duration and frequency of Management System assessment and surveillance visits is typically one day twice per year. However the actual frequency and duration depends on a number of factors including the size of the Firm and scope of activities.

Firms that apply to join the LPS 1204 scheme that already have ISO 9001 certification with the required scope, or wish to gain ISO 9001 certification with another accredited certification body, will be subject to an audit of their quality management system during LPS 1204 assessment and surveillance audits by LPCB. Details of the conditions for accepting ISO 9001 certification from another accredited certification body can be found in LPCB document PN006: Application process without LPCB ISO 9001.

3.8 Personnel, training and competency

All personnel employed (directly or by sub-contract) must be able to demonstrate that they are fully trained and competent in the disciplines and skills appropriate to their role. Complete records of training and competence skills of personnel must be maintained, in particular:

- Design staff must be fully trained to design systems in accordance with the nominated system standards and the manufacturer's design manual.

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- Design staff who carry out calculations to determine pipework and nozzle sizes must be fully trained in the use of the computer flow calculation package used.
- All personnel engaged in the installation of equipment and pipework are expected to have been assessed for their competency by the Firm.
- All personnel engaged in the installation, testing and servicing of gas extinguishing systems are expected to have been assessed for their competency by the Firm and where available attended training by the equipment manufacturer.

3.9 Sub-contracting

The Firm shall be fully responsible for the work of their sub-contractors.

Where sub-contractors are used:

- The quality of their designs, materials, equipment or workmanship is to be to the same standard as that of the LPS 1204 approved Firm.
- Service and maintenance activities will be carried out by directly employed personnel, or be sub-contracted to other LPS 1204 approved Firms.
- All work undertaken by such sub-contractors is to be reviewed and verified by qualified staff directly employed by the Firm to ensure that the requirements of the scheme are met. Records are to be maintained for all work sub-contracted.

3.10 Equipment

Where available, all specialist fire protection equipment used by the Firm will be LPCB approved and procured directly from the manufacturer or his agent.

Training in the design, use and servicing of this equipment will be obtained from the manufacturer or his agent. All equipment will be used fully in accordance with manufacturer's instructions, its LPCB approval conditions and the system standard.

The Firm should, where available, only use spare parts obtained from the manufacturer or their approved agents.

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3.11 Technical data

The Firm will:

- have access to current technical data, including specifications, installation, commissioning and service/maintenance instructions from all manufacturers of gas extinguishing equipment installed or serviced,
- make this information readily available to all necessary personnel, especially installation and service staff,
- use flow calculation programs that are compliant with the system standard used,
- where flow calculations are carried out by the Firm, and not by the equipment manufacturer or agent, if data, such as component equivalent lengths, pipe and fittings specifications, etc. can be changed by the Firm, then at least annually or when the flow calculation program is revised, a standardisation check is to be carried out to ensure that data has not been unintentionally changed.

3.12 Service and maintenance

The Firm will offer an inspection and maintenance service to customers in accordance with the appropriate system standard. The results of such inspections will be recorded and a copy provided to the system user.

In the event that servicing and testing reveals inadequacies or serious shortfalls in the system's capability to extinguish a fire due, for example, to building changes or unsealed penetrations in the enclosure effecting the concentration hold time, the Firm shall notify the system user within 7 days.

3.13 Emergency service

The Firm will offer an effective 24-hour emergency service for customers to ensure that appropriate remedial action can be undertaken on site within 24 hours.

3.14 Maintenance of certification

Certification of the Firm is maintained by regular audits by LPCB to ensure that the requirements of the scheme continue to be met (see Appendix 2 for further details).

3.15 Contracts with departures to the system standard

Errors or omissions made by a Firm during the execution of a contract are not acceptable and the Firm must correct all such works.

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A written agreement covering minor departures with the system standard shall be made between the Firm and their client (or his nominated representative) and all other authorities having jurisdiction (e.g. building control, fire safety officer and insurance company representatives). Only minor departures will be documented on the LPS 1204 Certificate of Conformity.

Certificates of conformity may not be issued for any gas extinguishing system with a major departure. In case of doubt, full details are to be submitted to LPCB before any commitment is given by the Firm to issue a certificate.

3.16 LPS 1204 Certificates of Conformity

At handover, the Firm shall issue a numbered LPS 1204 Certificate of Conformity for each system covered by the LPS 1204 scheme. The certificate will be retained on the premises and made available to Fire Authorities, Insurers and other authorities. A copy of each issued certificate shall be kept by the Firm and a copy sent to the LPCB within three months of the system being completed.

The Firm shall maintain a list of personnel authorised to sign LPCB LPS 1204 Certificates of Conformity.

Distribution of LPS 1204 Certificates of Conformity

LPS 1204 Certificates of Conformity will be issued to the following:

- The building owner/occupier (requiring their representative's signature)
- LPCB

Where required and agreed by the Client, copies of the certificate may be issued to:

- Building control
- Fire brigade
- Insurance Company

Copies of the certificate are to be retained by:

- The LPS 1204 approved Firm
- LPCB

3.17 Total system compatibility and responsibility

An LPS 1204 Certificate of Conformity for the gas extinguishing system can only be issued if the associated detection, actuation and control systems meet the requirements of the relevant system standards. It is the responsibility of the LPS 1204 Firm to verify that the associated detection, actuation and control systems have been designed, installed and commissioned in accordance with the relevant system standards by, for example, checking that the necessary test/commissioning certificates (or an LPS 1014 certificate)

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have been issued by the Firm providing the associated detection, actuation and control systems and checking that the combination of the gas extinguishing system and associated detection, actuation and control systems have been satisfactorily tested in all operational modes to prove system compatibility and integrity.

3.18 User instructions

The Firm shall provide a manual which includes operating instructions and routine inspection details and identifies User responsibilities in respect of the use and upkeep of the system. The Firm shall provide appropriate training as necessary.

3.19 Records

The Firm shall maintain records which provide traceability from tender to completion for each system or system alteration undertaken. Records shall include:

- i. Design details, system drawings, design approval, inspection and test records and completion and acceptance certificates.
- ii. Records shall be retained for a minimum period specified in the Firm's ISO 9001 quality management system.
- iii. Records shall be maintained on a similar basis for extensions or alterations to existing systems.

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4 REQUIREMENTS FOR PROVISIONAL APPROVAL

4.1 Criteria

Firms wishing to join the LPS 1204 scheme that do not meet the requirements of clauses 3.2 and 3.3 may apply for provisional approval.

4.2 LPCB pre-approval site inspections

For a Firm to be eligible for provisional approval, they must have installed at least one system of each gas type for which certification is sought for LPCB to sample at the assessment audit. A completed F469 shall be submitted with the application form. LPCB will review the list of completed contracts and decide whether there is adequate gas extinguishing systems to sample. If there are not enough contracts to sample, the application will be placed on hold pending the completion of further contracts.

4.3 Approval certificate

Subject to a satisfactory assessment audit, the Firm will be issued with an approval certificate which will show that the Firm has gained provisional approval in the LPS 1204 scheme. The certificate will be valid for 12 months. If by the end of the 12 months, the Firm does not meet the requirements for full certification by complying fully with clauses 3.2 and 3.3, the provisional certificate maybe re-issued for a further 12 months. However, if the Firm does not comply with the requirements of clause 3.2 within 2 years, provisional LPS 1204 approval may be withdrawn.

4.4 LPS 1204 Certificates of Conformity

Any contract that will be issued with an LPS 1204 Certificates of Conformity shall be inspected by LPCB before certification. The LPS 1204 Certificate of Conformity will be raised and issued by LPCB.

4.5 Red Book listing

Provisionally approved Firms will not be Red Book Listed.

4.6 List of completed contracts

When the provisionally listed Firm receives a new gas extinguishing system contract, it shall update the F469 form and send a copy to LPCB.

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4.7 Other requirements

The requirements of Section 2 and clauses 3.1 and 3.4 to 3.19 of Section 3 shall also apply for provisional approval.

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Appendix 1 - List of acceptable system standards and referenced publications

A1.1 System standards

For the purposes of this document, system standard maybe one of the following standards:

- (a) ISO 14520
- (b) EN 15004 series
- (c) BS 5306: Part 4
- (d) NFPA 12
- (e) NFPA 2001
- (f) FM Global Property Loss Prevention Data Book 4-11 N
- (g) LPS 1230

A1.2 Publications

- ISO 14520 – Gaseous fire-extinguishing systems — Physical properties and system design
- EN 15004 – Fixed firefighting systems – Gas extinguishing systems
- BS 5306 – Fire extinguishing installations and equipment on premises
Part 4: 2001 – Specification for carbon dioxide systems
- NFPA 12 – Standard on Carbon Dioxide Extinguishing Systems
- NFPA 2001 – Standard on Clean Agent Fire Extinguishing Systems
- FM Data Book 4-11 N – Carbon Dioxide Extinguishing Systems (NFPA)
- LPS 1230 – BRE Global Limited/LPCB, Loss Prevention Standard - Requirements for Fire Testing of Fixed Gaseous Fire Extinguishing Systems
- BS EN ISO 9001 - Quality management systems - Requirements
- PN 101 – BRE Global Terms and Conditions for Listing and Certification
- PN 103 – Use of Certification Marks
- PN 100 – Complaints and Appeals Procedure
- PN 159 – Change in ownership
- Quality Management Systems Certification Scheme - SD003
- F468 - Application form for LPS 1204 Certification
- F469 – List of installed systems
- F015 – ISO 9001 application form
- QP5-3 – Non-conformities and observations
- PN005 – Application process with LPCB ISO 9001
- PN006 – Application process without LPCB ISO 9001
- PN007 - Procedure to include additional gas types and manufacturers to existing LPS 1204 approval.

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Appendix 2 – Surveillance audits

(a) LPCB technical surveillance audits

Firms will be audited regularly for continued compliance with the requirements of this scheme document, the system standards and their general standards of design, installation, testing, commissioning and servicing. LPCB will carry out surveillance audits at six-monthly intervals. The duration of the audits will be dependent on the Firm's scope of approval (number of different gas types and equipment manufacturers).

Each surveillance audit will address 2 distinct areas:

1. Compliance with the relevant individual clauses of LPS 1204

All relevant clauses of the standard, identified on the planning matrix, will be audited over a 12 month continuous rolling programme.

2. Compliance with system standard (and specification) applicable to individual contracts

The Firm shall arrange for the LPCB to inspect not less than one completed contract, selected by the LPCB, against the system standard and design and layout drawings, at each surveillance audit.

(b) Audit findings

Where an audit has identified non-compliances with the scheme requirements or system standard, they will be documented by the assessor as non-compliance reports (NCR) or observation reports (Obs). Written evidence is to be provided by the Firm, in an agreed time-scale, of completion of the necessary corrective/preventative measures.

(c) Surveillance audit frequency - unsatisfactory performance

Where LPCB technical surveillance audit reveals significant non-compliances, additional surveillance visits may be required until the matters of concern have been satisfactorily resolved. See paragraph (d) below for Non-Compliances policy.

Some examples of the areas that may cause an increase in the frequency of audits would be:

- 1) Design standards falling below acceptable levels
- 2) Breaches of management systems and ISO procedures
- 3) Poor execution of site work resulting in complaints to LPCB

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When written complaints with supporting evidence are received by LPCB concerning the execution of any contract within the LPS1204 scheme, and there is a prima facie case, then they will be investigated. Such complaints will be drawn to the attention of the listed Firm. Firms will be liable for reasonable costs incurred by LPCB investigating complaints, if found to be at fault.

(d) Non-compliances policy

Approval of Firms is conditional on their satisfactory initial assessment and continued technical audits by LPCB according to the requirements of the scheme.

A Firm who incurs a small number of minor non-compliances at each LPCB visit and completes effective corrective and preventative actions in the required time will continue to be approved under the scheme. If a Firm fails to comply with the requirements of the scheme by incurring a large number of minor non-compliances and/or major non-compliance(s), one or more of the following actions will be taken by LPCB:

- A special visit will be carried out on the Firm, normally within 30 days or at an agreed time after the non-compliances were raised, to verify that the necessary corrective actions have been completed. This visit will be at the cost of the Firm.
- If the necessary corrective actions are not completed within the agreed time, the Firm's certification will be suspended or withdrawn.

(e) Suspension or withdrawal of approval

The conditions under which LPCB may suspend or withdraw approval are set out in BRE Global Terms and Conditions for Listing and Certification, publication PN101.

A Firm may appeal against a decision by LPCB to suspend or withdraw approval using the procedure described in PN 100 Complaints and Appeals Procedure. During the appeal period, the approval remains suspended or withdrawn.

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GLOSSARY OF DEFINITIONS USED

Authorities having jurisdiction

Authorities having jurisdiction include all interested parties who exercise professional judgement and authority, with the objective of ensuring the integrity of the gas extinguishing system. This would normally include client professional advisers, insurers, fire and other statutory bodies.

Contract

For the purposes of this document, Contract means a contract undertaken by a Firm to design, procure, fabricate, install and commission an alteration or extension to an existing gas extinguishing system or a new gas extinguishing system, and completed to the requirements of the system standard.

Departures listed on LPS 1204 Certificates of Conformity

A departure from the system standard listed on the LPS 1204 Certificate of Conformity.

The definitions of minor and major are as follows:

Minor - A departure from the system standard that will not significantly reduce the effectiveness of the gas extinguishing system to extinguish a fire.

Major - A departure from the system standard that will significantly reduce the effectiveness of the gas extinguishing system to extinguish a fire.

Note – A number of minor departures when taken together may constitute a major departure.

An LPS 1204 Certificate of Conformity cannot be issued with a major departure listed on it. If the Firm is unsure if a departure is either minor or major, they should consult with LPCB before a commitment is made to issue a Certificate of Conformity.

Firm

A Company established and registered in the country of origin whose principal business, or that of a properly established division of the company, is the design, installation, commissioning and servicing of gas extinguishing systems.

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Handover

The point in a contract where commissioning and certification of the system have been satisfactorily completed to the contract specification and system standard, so enabling the system to be formally handed over to a responsible person nominated by the client.

Install

Install as referred to in this scheme document will be deemed to include the following responsibilities and activities, carried out by the Firm in respect of each contract.

- a. The in house day-to-day management and progressing of the contract including design, procurement, installation, commissioning and hand-over, including co-ordination with the client, and authorities having jurisdiction and other Firms where applicable.
- b. Purchasing of equipment, materials and labour, inspection and storage of equipment and materials.
- c. Control by the Firm of installation teams, whether directly employed or sub-contracted by the Firm, and regular inspection of work during installation, final inspection and testing, commissioning and servicing.

Non- compliances raised during audits

Non-compliance (sometimes referred to as non-conformity) is used to cover instances where, either during assessment or surveillance audits, the Firm has not complied with the scheme requirements, the system standard or its own quality management system. Definitions for minor and major non-compliance are described in QP5-3.

Staff

Personnel employed by the Firm who have the appropriate qualifications, knowledge and experience for one or more of the functions of design, installation, commissioning, servicing and maintenance.

System

A group of components, approved/compliant with applicable product standards, that make up the supply of gas of specified capacity coupled to pipework with an arrangement of nozzles such that the correct distribution of gas is achieved within the time specified by the system standard.

System standards

See Appendix 1.

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Amendments Issued Since Publication

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