PAS 79:2012

Fire risk assessment – Guidance and a recommended methodology

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Publishing and copyright information

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Foreword

Publishing information

The development of this Publically Available Specification (PAS) was facilitated by British Standards Limited and published under licence from The British Standards Institution. It came in to effect on 31 August 2012.

This PAS was first prepared in 2005 in association with C.S. Todd & Associates Ltd, with the support and encouragement of the Institution of Fire Engineers and the Northern Ireland Fire Safety Panel, which represents building control and licensing authorities in Northern Ireland, and the Northern Ireland Fire and Rescue Service. It was first reviewed in 2007. That revision and this current revision were, again, drafted by C.S. Todd & Associates Ltd.

Acknowledgement is given to the following organizations that were consulted in the development of this Publicly Available Specification:

Association of Building Engineers (ABE)
British Approvals for Fire Equipment (BAFE)
British Broadcasting Corporation (BBC)
Chief Fire Officers' Association (CFOA)
Fire Industry Association (FIA)
Fire Protection Association (FPA)
Institution of Fire Engineers (IFE)
Institute of Fire Prevention Officers (IFPO)
Institute of Fire Safety Managers (IFSM)
Northern Ireland Fire Safety Panel
Odeon Cinemas Limited

Acknowledgement is given to the following BSI Committees that were consulted in the development of this Publically Available Specification:

FSH/14 Fire precautions in buildings
FSH/0 Fire co-ordination
FSH/24 Fire safety engineering
HS/1 Occupational health and safety management

Supersession

This is a revision of PAS 79:2007, which is withdrawn.

Information about this document

 This Publicly Available Specification will be reviewed at intervals not exceeding two years, and any amendments arising from the review will be published as an amendment and publicized in *Update Standards*.

This is a full revision of the document, and introduces the following principal changes.

- The technical content has been subject to amendment in the light of experience in the use of PAS 79.
- There is new guidance on the role of codes or practice and guidance documents as a basis for determining the appropriate fire precautions.
- There is new guidance on the approach that should be adopted in determining the appropriate fire precautions for existing buildings that do conform to current codes of practice applicable to new buildings (e.g. under current building regulations).
- A new annex contains a competence standard for fire risk assessors, developed and agreed by stakeholders in the fire safety profession.
- Changes to, and publication of various new, British Standards have been taken into account.

Use of this document

As a code of practice, this Publicly Available Specification takes the form of guidance and recommendations. It should not be quoted as if it were a specification, and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this Publicly Available Specification is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the drafting of this Publicly Available Specification that the execution of its provisions will be entrusted to appropriately qualified

and competent people, for whose use it has been produced.

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This Publicly Available Specification is not intended to constitute a textbook on fire safety, and it should not be regarded as a substitute for knowledge of fire safety principles and the practical use and application of fire protection measures or an understanding of the premises, their features, usage and occupancy. In carrying out the fire risk assessment, there is likely to be a need for reference to other codes of practice and guidance documents on specific aspects of fire prevention, fire protection and management of fire safety, a number of which are listed in the Bibliography. Moreover, this PAS is not intended to provide guidance on the detailed requirements of the relevant fire safety legislation. Such guidance can be found in the relevant Government guidance documents listed in the Bibliography.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in italic type, and does not constitute a normative element.

It is envisaged that, when a fire risk assessment is audited for compliance with this Publicly Available Specification, the audit will be based on the recommendations only.

The word "should" is used to express recommendations of this standard. The word "may" is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word "can" is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations.

Commentaries are provided at the start of each clause and give background information to the subsequent recommendations within each clause.

Contractual and legal considerations

In England and Wales, Article 9 of the Regulatory Reform (Fire Safety) Order 2005 (the "Fire Safety Order") [3] requires that the responsible person, on whom the Fire Safety Order imposes requirements, must make a suitable and sufficient assessment of the risks to which relevant persons are exposed for the purpose of identifying the general fire precautions he needs to take to comply with the requirements and prohibitions imposed on him by or under the Fire Safety Order. (For the purpose of the Fire Safety Order, "relevant persons" are any person who is or may be lawfully on the premises, and also any person in the immediate vicinity of the premises who is at risk from a fire on the premises, other than firefighters at the time of a fire.)

The same duty is imposed on every person, other than the responsible person, who has, to any extent, control of the premises so far as the duty relates to matters within his control. (This would normally include, for example, the landlord or managing agent of commercial premises in multiple occupation.)

The above risk assessment is commonly described as a fire risk assessment. Guidance on the requirements of the Fire Safety Order, and on the fire risk assessment required by it, is produced by the Department for Communities and Local Government (DCLG) [8–18]. The guidance in this Publicly Available Specification is more detailed in respect of the fire risk assessment process than that published by the DCLG, but does not conflict with that guidance. However, the Government guidance documents provide more detailed technical information on the fire safety measures to meet legislation.

In Scotland, the duty to carry out a fire risk assessment is imposed on every employer by section 53(2)(a) of the Fire (Scotland) Act 2005 [4]. The Act requires that the risk assessment identifies any risks to the safety of the employer's employees in respect of harm caused by fire in the workplace. Section 54(2)(a) of the Act also imposes a duty, on any person who has control to any extent of relevant premises, to carry out a fire risk assessment, and this risk assessment must identify any risks to the safety of relevant persons in respect of harm caused by fire in the relevant premises; relevant

persons is defined in much the same manner as it is defined in the Fire Safety Order in England and Wales. In Scotland, further requirements in respect of the fire risk assessments required by the Fire (Scotland) Act are imposed by the Fire Safety (Scotland) Regulations 2006 [5]. Guidance on the requirements of this legislation, and the fire risk assessment required by it, is published by Scottish Government [19].

In Northern Ireland, the requirements for fire risk assessments are identical to those in Scotland, but are imposed by Articles 25(2)(a) and 26(2)(a) of the Fire and Rescue Services (Northern Ireland) Order 2006 [6]. Further requirements in respect of the fire risk assessments are imposed by the Fire Safety Regulations (Northern Ireland) 2010. [7].

Fire and rescue authorities can advise on the fire safety legislation that applies to any premises, and on means for compliance. If in doubt regarding the requirements of legislation, consultation with the fire and rescue authority is strongly recommended. Advice can also be obtained from a suitably qualified and experienced fire risk assessor or fire safety practitioner. A number of bodies maintain a register of persons who they consider competent to carry out fire risk assessments. These include relevant professional bodies and certification bodies accredited by UKAS to provide assessment and certification services. Registration of a fire risk assessor on such a register can give the dutyholder confidence in the education, training and experience of the fire risk assessor to those who wish to use the fire risk assessor's services.

UKAS is the sole national accreditation body recognized by government to assess, against internationally agreed standards, organizations that provide certification, testing, inspection and calibration services.

This Publicly Available Specification does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

This Publicly Available Specification is not to be regarded as a British Standard.

Compliance with a Publicly Available Specification cannot confer immunity from legal obligations.

Attention is drawn to the legislation described in this Foreword and to guidance produced by the Department for Communities and Local Government, Scottish Government and the Department of Health, Social Services and Public Safety (in Northern Ireland).

Introduction

Employers and other persons who have control of premises are required by legislation to carry out an assessment of the fire risks to occupants of premises, and other people in the vicinity of the premises, to ensure that these people are safe from fire and its effects. The Regulatory Reform (Fire Safety) Order 2005 [3] requires that, in England and Wales, the risk assessment is "suitable and sufficient". This assessment is usually referred to as a "fire risk assessment". For the purposes of this Publicly Available Specification, a fire risk assessment carried out in the structured manner described herein will be referred to as "the fire risk assessment".

The person on whom a duty is imposed to carry out the fire risk assessment is described in different ways in different legislation across the UK. For example, in England and Wales, the Regulatory Reform (Fire Safety) Order describes the person as the "responsible person", whereas this term is not used elsewhere in the UK. Moreover, this duty can be imposed on more than one person within the same premises (e.g. in premises in multiple occupation, the duty may be imposed on every tenant, the landlord and the managing agents). In this PAS, the term "dutyholder" is used to describe any person on whom the relevant fire safety legislation (see **3.76**) imposes a requirement to carry out a fire risk assessment.

Since legislation also requires "suitable and sufficient" assessments to ensure that organizations comply with health and safety legislation, an organization could choose to carry out, and document, a single combined health, safety and fire risk assessment. In practice, this approach is normally only adopted in the case of very small premises, and most organizations choose to carry out a separate fire risk assessment, independent of their health and safety risk assessment. The reason for this is that, for most premises, different skills, experience and expertise are required for each of the two forms of risk assessment.

The term "suitable and sufficient" is not defined in legislation. Moreover, the relevant fire safety legislation requires that the "significant findings" of the risk assessment, and any group of persons "especially at risk", be recorded if the organization employs five or more people (in the entire organization, and not just in the premises in question), or if legislation requires licensing, registration or certification of the premises, or if an alterations notice (requiring that the relevant enforcing authority is notified of proposals to carry out certain alterations to the premises) is in force. Again, the terms "significant findings" and "especially at risk" are not defined in the relevant legislation. However, the 'significant findings' should indicate measures taken and measure that will be taken for compliance with the legislation. Nevertheless, it follows that the adequacy of any fire risk assessment is a matter for subjective judgement. This can lead, and has led, to inconsistency in interpretation, creating some difficulties for organizations, their advisers and enforcing authorities. These difficulties have been exacerbated, even for fire safety specialists, by a distinct move, in recent years, towards "risk-proportionate" fire precautions, and away from the more traditional "prescriptive" approach in which there was often a more rigid application of codes of practice without full consideration of fire risk.

This shift was designed to be beneficial to those who own and manage premises, since it provides a better match between risk and precautions, more akin to that found in the field of general health and safety. It therefore precludes unnecessary expenditure in circumstances in which the risk does not justify it. Equally, it ensures adequate protection (possibly to an even higher standard than applied under prescriptive codes) when warranted by the fire risk. Ultimately, the final arbiter as to whether fire precautions satisfy legislation can, however, only be the Courts.

There is, therefore, no single correct or incorrect method of carrying out and recording the significant findings of a fire risk assessment. Rather, there are many approaches that can lead to a suitable, and satisfactorily documented, fire risk assessment, which, at first sight at least, bear little similarity. Nevertheless, the prerequisites for a suitable and sufficient fire risk assessment are implicit in legislation, and, accordingly, close scrutiny of most adequate fire risk assessments will reveal consideration of many common factors.

This Publicly Available Specification does not purport to contain a methodology or documentation that is necessarily superior to all others. It is designed to satisfy requirements of current fire safety legislation. The fire risk assessment methodology is intended to facilitate protection of people from fire. Guidance on fire precautions to protect property, and to protect against

interruption to business, from fire can be obtained from property insurers, and many suitably qualified and experienced fire safety consultants can advise on these issues as well as on life safety.

The objectives of this Publicly Available Specification are:

- to provide organizations and their advisers with a methodology for meeting their legislative responsibilities to undertake fire risk assessments;
- to assist non-fire specialists with a framework for assessment of fire risk, albeit that an underpinning knowledge of fire safety principles will be required in order to carry out the fire risk assessment described in this Publicly Available Specification;
- to promote better understanding of fire risks and fire safety by organizations and non-fire specialists;
- to enable common relevant terminology to be adopted by those who carry out fire risk assessments;
- to provide an understanding of the principles and scope of fire risk assessments;
- to establish a pragmatic, holistic and risk-proportionate approach towards assessment of fire prevention measures, fire protection measures and management of fire safety, for the purpose of conducting fire risk assessments;
- to establish a satisfactory basis for documentation of fire risk assessments;
- to provide a benchmark for a suitable and sufficient fire risk assessment;
- to promote a consistent approach to carrying out and documenting a fire risk assessment that will be accepted by enforcing authorities.

This PAS is largely consistent with the approach to fire risk assessment set out in Government guidance documents on the relevant fire safety legislation. These guidance documents not only explain the legal requirements in respect of fire risk assessment, but give technical guidance on compliance with the legislation. However, in the particular area of fire risk assessment, this PAS expands on the advice in the Government guidance documents.

1 Scope

This Publicly Available Specification gives guidance and corresponding examples of documentation for undertaking, and recording the significant findings of, fire risk assessments in premises and parts of premises for which fire risk assessments are required by legislation. It is not applicable in the case of a single-family private dwelling, or necessarily applicable to premises during the construction phase[1] but is applicable to vacant premises, for which a fire risk assessment is required. The methodology is intended to provide a structured approach to fire risk assessment for people with knowledge of the principles of fire safety; it is not intended as a guide to fire safety.

The recommended approach to carrying out fire risk assessments is intended to determine the risk-proportionate fire precautions required to protect premises occupants including employees, contractors, visitors and members of the public and to protect people in the immediate vicinity of the premises. The fire risk assessment is not necessarily sufficient to address the safety of firefighters in the event of a fire on the premises.

The recommended methodology is not intended to address protection of property (the premises and their contents) or the environment, or to address protection of a business, process or activity against interruption. Premises with special hazards, with the potential for high risk to life (e.g. chemical or nuclear hazards), will require consideration of additional factors associated with these hazards and their means of control, and are beyond the scope of this document. However, in all such cases, this PAS might form the basis for development of an appropriate fire risk assessment process and the documentation of the significant findings of the process.

[1)] Fire risk assessments are, however, required, for example, in the case of common parts of houses in multiple occupation and blocks of flats in England and Wales, and for licensed houses in multiple occupation in Scotland. This PAS is applicable to such fire risk assessments. Fire risk assessments are also required for construction sites. Nevertheless, fire risk assessments for construction sites are outside the scope of this PAS, as many of the matters relating to management of fire safety, which are addressed in this PAS, will not be applicable to a construction site.

2 Normative references

The following referenced documents are indispensable for the application of this document. The latest edition of the referenced documents (including any amendments) applies.

BS 4422, *Fire – Vocabulary*

BS EN ISO 13943, *Fire safety – Vocabulary*

3 Terms and definitions

For the purposes of this PAS, the terms and definitions given in BS 4422 and BS EN ISO 13943 and the following apply.

3.1 access room

room that forms the only escape route from an inner room (see **3.58**)

3.2 action plan

measures, including management procedures, identified in the course of a fire risk assessment that need to be implemented to ensure that the required level of fire safety is achieved or maintained

NOTE *The required standard of fire safety will normally be defined within the organization's fire safety policy, but will never be of a lower standard than that required by legislation.*

3.3 alarm receiving centre (ARC)

continuously manned premises, remote from those in which a fire alarm system is fitted, where the information concerning the state of the fire alarm system is displayed and/or recorded, so that the fire and rescue service can be summoned

3.4 alternative escape routes

escape routes sufficiently separated either by direction and space, or by fire-resistant construction, intended to ensure that should one be affected by fire the other will still be available

3.5 automatic door release mechanism

device that can be used for holding a door in the open position, against the action of a door closer, and automatically releasing under specified conditions

3.6 available safe egress time (ASET)

time available between ignition of a fire and the time at which tenability criteria are exceeded in a specific space in a building

NOTE *To ensure the safety of occupants, the escape time (see **3.21**) needs to be shorter than the ASET.*

3.7 class A fires

fires involving solid materials, usually of an organic nature, in which combustion normally takes place with the formation of glowing embers

NOTE *These are normally carbonaceous fires.*

3.8 class B fires

fires involving liquids or liquefiable solids

3.9 class C fires

fires involving gases

3.10 class D fires

fires involving metals

3.11 class F fires

fires involving fats and cooking oils

3.12 combustible

capable of burning in the presence of oxygen

3.13 compartmentation

subdivision of a building by fire-resisting walls and/or floors for the purpose of limiting fire spread within the building

3.14 competent person

person, suitably trained and qualified by knowledge and practical experience, and provided with the necessary instructions, to enable the required task(s) to be carried out correctly

NOTE *The relevant fire safety legislation requires nomination of various competent persons to carry out a number of different defined tasks.*

3.15 dead end

area from which escape from fire is possible in one direction only, or in directions less than 45 degrees apart that are not separated by fire-resisting construction

3.16 dry fire main

water supply pipe installed in a building for fire-fighting purposes, fitted with inlet connections at the fire and rescue service access level, and with landing valves at specified points, which is normally dry but is capable of being charged with water, usually by pumping from fire and rescue service appliances

3.17 dutyholder

person on whom legislation imposes a requirement to carry out a fire risk assessment

NOTE 1 *The term "dutyholder" only has meaning within this PAS, and is used for convenience; it is not a term used in this context within fire safety legislation, in which the dutyholder could be a number of different parties according to circumstances, e.g. in England and Wales, the responsible person, to which the Regulatory Reform (Fire Safety) Order makes reference, is one such dutyholder.*

NOTE 2 *The dutyholder can be determined from the relevant fire safety legislation.*

NOTE 3 *The dutyholder is normally an organization, such as an employer, rather than a specific named person.*

NOTE 4 *There might be more than one dutyholder within any premises. For example, in multi-tenanted office premises, normally each tenant, and the landlord or managing agents, will be dutyholders.*

3.18 emergency escape lighting

part of the emergency lighting that provides illumination for the safety of people leaving a location or attempting to terminate a potentially dangerous process before doing so

3.19 emergency lighting

lighting provided for use when the supply to the normal lighting fails

3.20 escape route

route forming part of the means of escape from any point in a building to a final exit

3.21 escape time

time from ignition until the time at which all the occupants of a building, or a specified part of a building, are able to reach a place of safety

3.22 evacuation lift

lift that may be used for the evacuation of disabled occupants in a fire under the direction of management or firefighters

3.23 false alarm

fire signal resulting from a cause(s) other than fire

3.24 final exit

termination of an escape route from a building, giving direct access to a street, passageway, walkway or open space, and sited to enable the rapid dispersal of persons from the vicinity of a building so that they are no longer in danger from fire and/or smoke

3.25 fire audit

systematic and, whenever possible, independent examination to determine whether standards of fire safety conform to those required in order to achieve the organization's fire safety policy and objectives

3.26 fire damper

mobile closure or intumescent device within a duct, which is operated automatically and is designed to prevent the passage of fire and which, together with its frame, is capable of satisfying for a stated period of time the same fire resistance criterion for integrity as the element of the building construction through which the duct passes

3.27 fire/smoke damper

combined fire and smoke damper

NOTE *See fire damper (**3.26**) and smoke damper (**3.79**).*