Consultation on Practical Fire Safety Guidance for Existing Premises with Sleeping Accommodation

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PRACTICAL FIRE SAFETY GUIDANCE FOR EXISTING PREMISES WITH SLEEPING ACCOMMODATION

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Chapter 1: PREFACE

Introduction

1. In 2006, the Fire (Scotland) Act 2005 ('the 2005 Act') introduced changes to fire safety law in Scotland and repealed previous fire safety legislation. This guide has been produced to assist those who have responsibility under this Act for ensuring fire safety in certain premises with sleeping accommodation in Scotland. In addition, the guide has a statutory basis for the Scottish Fire and Rescue Service ("SFRS"), as an enforcer.

2. This guide, prepared by the Scottish Government, offers fire safety advice in respect of certain existing premises with sleeping accommodation. It consolidates and supersedes a number of individual Scottish Government guides, and introduces a substantial number of editorial changes aimed at improving dutyholders' understanding of the guidance. The guides superseded are:

- *Practical Fire Safety Guidance for Small Premises Providing Sleeping Accommodation, 2010*
- *Practical Fire Safety Guidance for Medium and Large Premises Providing Sleeping Accommodation, 2008*
- *Practical Fire Safety Guidance for Small Bed and Breakfast and Self-catering Premises, 2010* (The content of this superseded guide has been used as the basis for annex 1, see paragraph 6)

3. At the same time, the Scottish Government guide *Practical Fire Safety Guidance for Healthcare Premises, 2008* is withdrawn, giving preference to the fire safety guidance issued by NHS Scotland (see paragraph 9).

Scope

4. The guidance in this document is applicable to general fire safety in existing residential premises in which there is sleeping accommodation. This includes:

- hotels, tourism hostels, refuges
- holiday lets and holiday complexes, camping and caravan sites (other than privately used individual units)
- bunkhouses, bunk barns
- sleeping accommodation for pupils, students or employees
- all types of houses in multiple occupation (HMO)[1]
- boarding houses, guest houses, bed and breakfast accommodation[2]

5. Where paying guests are accommodated, fire safety law applies equally to traditional accommodation providers and also in respect of 'peer to peer' accommodation providers where accommodation is marketed through online platforms.

[1] In general, an HMO may be any house, flat or building which is the only or principal residence of three or more people, who belong to three or more families and share a toilet, bathroom or cooking facilities. HMOs require to be licensed under the Housing (Scotland) Act 2006

[2] HMOs, holiday lets and bed and breakfast type accommodation do not fall within the definition of private dwelling for the purposes of Part 3 of the 2005 Act

6. Annex 1 to this guide contains stand-alone simple guidance for well-managed small bed and breakfast and self-catering premises. Relative to other 'sleeping risk' premises, the risk from fire to persons in this type of property is likely to be relatively low. Annex 1 applies where:

- premises are used for self-catering holidays if occupied by not more than 10 persons
- bed and breakfast premises in the home of a resident operator (for not more than 8 guests)

and which in either case, have a means of escape from bedrooms via a traditional 'hall' with at least one exit directly to the outside; do not have letting or guest accommodation below a ground floor or above a first floor; do not act as the principal residence for paying guests; and do not have any storey area over 200 m^2 internal floor space.

7. Annex 2 contains benchmarks applicable for holiday camping and caravan sites.

8. This guide does not apply to care homes for which there is a separate guide[3], nor to premises used for childminding with overnight provision for which there is also separate general guidance[4], nor to premises where persons are detained in lawful custody, such as prisons.

9. This guide does not apply to hospitals. Guidance for fire safety in hospitals in Scotland is contained in the suite of documents known as 'NHSScotland Firecode' issued by Health Facilities Scotland.

10. Much of the guidance in this document relates to buildings, however, the requirements of fire safety law also apply to other structures, external areas and open air sites.

11. This guide applies to existing premises and is not a design guide for new build. All new residential buildings must be designed to the mandatory standards under the Building (Scotland) Regulations 2004. Similarly, buildings which undergo extension, structural alteration or change of use should also meet the standards (and be subject to building warrant approval, where required). Design guidance in respect of building regulations is contained in the *Scottish Building Standards Technical Handbooks*.

Fire Safety Law

12. Part 3 of the 2005 Act, along with the Fire Safety (Scotland) Regulations 2006, sets out the fire safety duties in respect of the majority of non-domestic premises in Scotland.

13. The legislation requires the provision of fire safety measures; this includes risk reduction measures, means of fire warning, fire-fighting, escape, staff training and instruction, as well as emergency procedures. It sets out fire safety responsibilities and seeks to ensure the safety of persons from harm caused by fire.

[3] *Practical Fire Safety Guidance for Care Homes,* 2014

[4] *Fire Precautions in Domestic Childminding Premises: A Guide to Childminders* produced by the Chief Fire Officers Association (Scotland)

14. The list below is a summary of the general requirements imposed and is not intended to be comprehensive; anyone in doubt about their legal obligations may wish to seek further advice. Guidance on complying with these general requirements is considered in more detail in the remaining chapters:

- assessing the risk from fire in respect of the premises
- identifying the fire safety measures necessary as a result of the assessment of risk
- implementing these fire safety measures, using risk reduction principles
- putting in place fire safety arrangements for the ongoing control and review of the fire safety measures
- complying additionally with the specific requirements of the fire safety regulations
- keeping the fire safety risk assessment and outcome under review
- record keeping

15. The general fire safety provisions in Part 3 of the 2005 Act take precedence over the terms and conditions imposed in relation to licences issued under other legislation. Section 71 of the 2005 Act has the effect that terms, conditions or restrictions in such licences – including statutory certification or registration schemes – have no effect if they relate to fire safety requirements or prohibitions which are, or could be, imposed under Part 3.

Who Must Comply with these Duties?

16. The responsibility for complying with the fire safety duties in premises which provide sleeping accommodation sits with the employer and/or other persons who operate or have control of the premises to any extent. This might include managers, landlords, owners and staff – and in some cases, residents. Contractors and volunteers working on site may also have some responsibilities through their degree of control or responsibility for fire safety. In this guide, persons with fire safety responsibilities are referred to generally as 'dutyholders'.

17. In the case of holiday homes, unstaffed HMOs, and other premises with no management or proprietor presence, some fire safety responsibility may sit with residents and this should be considered as part of the tenancy or letting arrangement.

18. Under fire safety law, all dutyholders are required to take all reasonable measures regarding the safety of persons. Employers additionally have a specific obligation to ensure the safety of employees in the event of fire, so far as is reasonably practicable. This means that fire safety measures need to be taken to address risk, but not to the extent that cost, effort and other disadvantages associated with the provision of fire safety measures would be disproportionate to the risk to life. In this respect a judgement is made about the cost of measures being proportionate to the resulting risk reduction, not the capacity of a dutyholder to pay.

19. Where premises or responsibilities are shared, each employer, owner or other person who has control over any part of the premises is required to co-operate and co-ordinate in respect of complying with fire safety law and to inform each other of risks.

20. If the requirements of fire safety law are not complied with, the omission may constitute a criminal offence with a penalty of a fine or imprisonment.

Obtaining Advice on Fire Safety

21. The responsibility for carrying out an assessment of fire risk, reviewing such an assessment and taking fire safety measures rests with dutyholders.

22. Dutyholders should consider their own capabilities and circumstances in respect of assessing and managing risk, and factors such as the size and use of premises and the number and type of persons involved.

23. Whilst dutyholders are usually best placed to know their premises, they will need to decide whether they, or their employees where applicable, have the capability to assess fire risk. If dutyholders do not have sufficient resources, skills or experience to undertake a fire safety risk assessment themselves they can arrange for a suitably qualified person or company to carry out an assessment on their behalf.

24. When looking to contract a specialist, it can be difficult to judge the competence of companies and persons who advertise their services. The fact that a person or company is operating in the fire sector or that someone has previous fire service experience, does not mean that they are a fire safety specialist.

25. Both the Scottish Government and the SFRS recommend that dutyholders who wish to contract the services of an external fire safety risk assessor, select an assessor from a list of competent fire risk assessors maintained by a professional body or a UKAS accredited third party certification body. Alternatively they could use the services of companies, including sole traders, that are third party certificated under appropriate schemes operated by certification bodies that have, themselves, been UKAS accredited as competent to certificate against such schemes. (The benefit of company certification is that the certification body monitors the quality of the certificated company's work and confirms that there is a system for management of quality within the certificated company).

26. The SFRS maintains a list of UKAS accredited certification bodies and professional registration schemes, which can be accessed on its website[5]. The SFRS has not assessed and does not endorse any individuals or companies participating in these schemes. However, participation in such schemes can offer a degree of assurance that a risk assessor (individual or company) has met the professional requirements of the scheme.

27. Generally, reviews of a risk assessment should be carried out regularly by the dutyholder to ensure it remains valid. This will reinforce ownership of fire safety management and assist in the development of relevant knowledge, and of a fire safety culture. However, where significant changes to premises have occurred or if the dutyholder continues to feel that they lack the time, knowledge or skills required to undertake a thorough review, it may be advisable.

Who Enforces the Fire Safety Law?

28. While the responsibility for compliance with the legislation sits with dutyholders, there is provision in the legislation for an enforcing authority with enforcement powers.

29. The SFRS enforces Part 3 of the 2005 Act and relevant regulations in respect of the majority of residential non-domestic premises.

30. The SFRS policy towards enforcement is proactive and it adopts an enabling approach to assist dutyholders in complying with their obligations.

31. Enforcement officers' powers are listed in section 62 of the 2005 Act: they may do anything necessary to allow them to enforce the provisions of the legislation. This includes entering premises, inspecting, requesting information, records or assistance, copying or

[5] http://www.firescotland.gov.uk/media/1173445/sfrs_advice_on_fire_safety.pdf

removing documents; carrying out measurements or tests; taking samples, dismantling articles, and taking possession of an article for examination or evidence.

32. If the SFRS is not satisfied with the outcome of a dutyholder's assessment of fire risk in the premises, or the action taken by a dutyholder, or the fire safety measures in place, it may send out a letter which requests or specifies that certain action or measures be taken and may request that a dutyholder draws up an action plan for implementation of the measures.

33. The SFRS has the power to take formal action in certain situations. This could involve:

- the issuing of an 'Enforcement Notice' that requires specified action to be taken
- the issuing of a 'Prohibition Notice' in cases of serious risk so that the use of all or part of the premises is restricted until specified matters are remedied
- reporting the matter for prosecution

34. Additionally, the SFRS has power to issue an 'Alterations Notice' that requires the recipient to inform the enforcing authority before making specified changes to the premises.

35. Failure to comply with a notice issued by the enforcing authority or placing persons at risk of death or serious injury by failing to carry out any duty imposed by fire safety law is an offence.

36. Where there is disagreement between a dutyholder and the enforcing authority on compliance issues, the dispute may be suitable for referral for a determination. Dispute determination is a 3rd party independent resolution arrangement. Information on this provision is available on the web pages of the Fire Service Inspectorate at www.gov.scot/fireinspectorate.

37. There is also a right of appeal to the court against a Prohibition Notice, Enforcement Notice or Alterations Notice, within 21 days from the date the notice is issued.

38. While the general fire safety measures required by the 2005 Act are enforced by SFRS, there are some matters that are enforced by the Health and Safety Executive or the local authority, under various pieces of health and safety legislation. Some examples are precautions relating to:

- storage of flammable liquids
- ventilation systems to dilute or remove flammable gas or vapour
- selecting equipment that will not be a source of ignition
- maintenance of electrical equipment

How to Use this Guide

39. The remaining chapters in this guide provide information on the assessment of fire risk, the reduction of risk and identification and implementation of fire safety measures. It is not necessary to follow the risk assessment method in this guide or the fire safety measures; other suitable methods and measures may be appropriate.

40. The fire safety measures described in this guide are principally benchmarks. When deciding what fire safety measures are appropriate for premises, the benchmarks can be used as a comparison against what exists in the premises. The benchmarks should not be applied prescriptively to premises, they are not minimum standards nor are they provisions

that are deemed to satisfy the legislation. In each case, the measures adopted should be risk appropriate for the particular circumstances in which they are applied. A standard lower than the benchmark may be adequate, in other cases a standard above the benchmark may be necessary. The assessment of risk needs to be specific to the individual premises.

41. If persons feel unable to interpret this guidance, they should seek assistance from someone with technical knowledge. The SFRS as an enforcer of the legislation, cannot undertake a dutyholder's risk assessment obligation. But it has a statutory requirement to provide general advice on request about issues relating to fire safety and should be able to provide information and advice which will assist dutyholders to understand their obligations under the law.

42. While the principal purpose of this guide is to provide guidance to assist dutyholders comply with their legal obligations, the guide and its contents constitute guidance given by the Scottish Ministers to the SFRS in terms of section 61(2) of the 2005 Act and the SFRS is therefore required to take it into account in determining whether enforcement action may be necessary. In its enforcement function, the SFRS is also required to have regard to the Scottish Regulators' Strategic Code of Practice.

43. Where an enforcement officer considers that additional fire safety measures are necessary in premises, this decision should be based on risk, taking likely cost benefit into account. It will assist the awareness of dutyholders if enforcement officers explain why the existing fire safety measures are not acceptable, and how additional fire safety measures will deliver improvement.

44. Nothing in this guide should be interpreted as permitting a reduction in the standard of fire safety measures where the measures have been incorporated to comply with Building Regulations. But it is possible for a standard higher than that required by Building Regulations to be necessary as a consequence of assessment of risk.

45. From October 2013, a Fire Safety Design Summary is recorded as part of the building regulation process. This may be a useful source of information to assist dutyholders with the safe operation of the premises and to inform the assessment of fire risk.

Chapter 2: ASSESSMENT OF FIRE RISK IN PREMISES

46. Where fire safety law applies, it is a legal requirement to assess the premises to identify risk to persons from fire and to take fire safety measures. The assessment of risk should be specific to fire safety and to the specific premises concerned. A generic risk assessment will not be sufficient.

47. Fire safety risk assessment is a practical exercise aimed at evaluating the risk from fire and how to ensure the safety of persons in the event of fire. It involves an organised and methodical look at the premises, the activities within the premises, the type of occupants, the potential for a fire to occur and the harm it could cause to people. The existing fire safety measures are evaluated to establish whether they are adequate or if more requires to be done. In this respect, fire safety measures include not just physical measures, such as fire alarm systems and escape routes, but also standards of management.

48. The risk assessment process described in this chapter is shown in Figure 1.

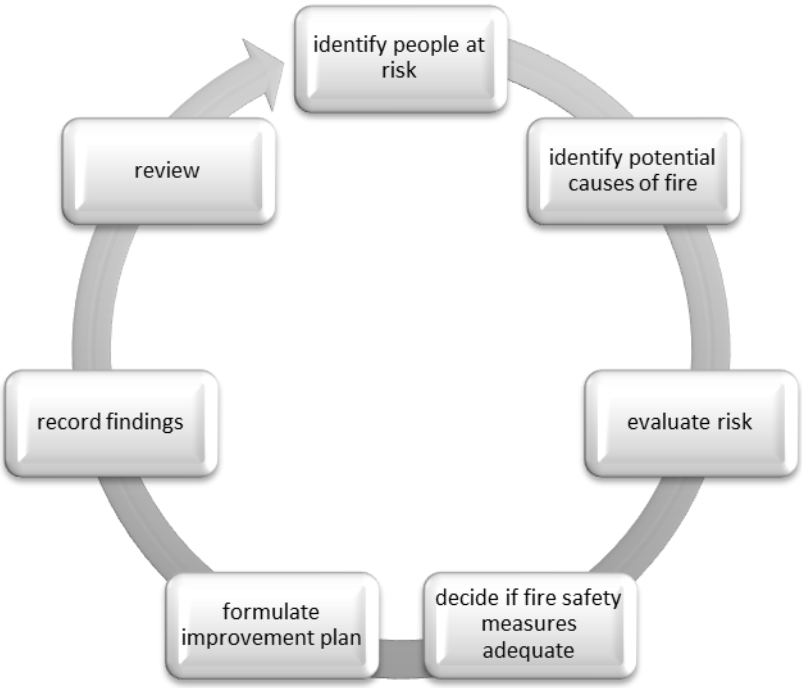

Figure 1 - Fire safety risk assessment process

Identify People at Risk

49. An assessment should be made of those persons at risk if a fire occurs within or in the immediate vicinity of the premises. The number, characteristics and location of occupants, residents, staff and other persons who frequent the premises should be identified. Disabilities should be taken into account along with peoples' familiarity with the premises. The inexperience, lack of awareness and immaturity of any young persons (under 18 years) employed or resident, should be also considered.

Identify Potential Causes of Fire

50. For a fire to start, three components are needed: a source of ignition; fuel; and oxygen. These components can be represented as the sides in a simple 'triangle of fire' model shown in Figure 2. If any one of these components is missing, a fire cannot start. Taking steps to avoid the three coming together will reduce the chance of a fire occurring, while reducing the quantity of oxygen (smothering) or fuel (starvation) may restrict the development of a fire.

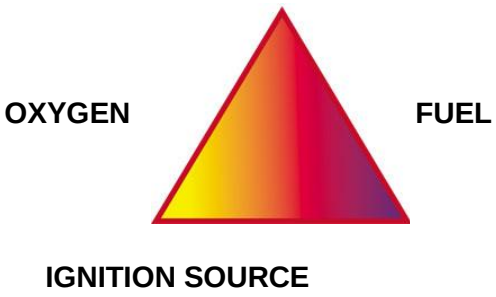

Figure 2 **-** Triangle of fire

51. The premises should be critically examined to identify potential ignition sources and materials that might fuel a fire and the circumstances which might allow a fire to start. Any previous fires should also be considered, as should indications of 'near misses' such as scorch marks on furniture or fittings, discoloured or charred electrical plugs and sockets or cigarette burns. Some general information and examples are given in Tables 1 to 3 at the end of this chapter and recommendations on controlling ignition sources are contained in Chapter 5.

Evaluate the Risk

52. The risk in the premises should be evaluated so that a judgement can be made on the adequacy of fire safety measures. Risk has two components: the likelihood that a fire may occur; and the potential for a fire to cause death or injury i.e. consequence. Both likelihood and consequence should be considered when assessing risk.

53. The likelihood of a fire starting will be low if there are few ignition sources, and if combustible materials are kept away from them.

54. Having considered the people likely to be at risk should a fire start in the building and the chances of a fire occurring, the consequences and extent of the risk to those people if a fire starts and spreads should be considered. In evaluating the risk to people, it is necessary to consider different situations and possible scenarios such as:

- fire starting on a lower floor affecting the escape of people on upper floors
- the potential for fire to affect escape routes, particularly where there is a single escape route
- fire developing in a space that people have to pass by to escape from the building
- fire or smoke spread through a building via routes such as vertical shafts, service ducts, service penetrations, ventilation systems, cavities, roof voids and open doors
- fire and smoke affecting the behaviour of occupants
- the contribution to fire spread and development if dangerous substances are involved
- fire and smoke spread into the premises from exterior fires

- the potential for fire originating in the premises to pose a threat to persons in the surrounding area

55. Additionally where the building is in multi-occupancy such as a flatted building, or is multi-use such as a mixture of offices and flats, specifically consider:

- the risk from a fire which may occur in communal parts or in another part of the building occupied by a different person
- the risk which a fire in the premises may pose to other occupiers of the building and any adjoining premises

56. If there have been any previous fires in the premises, considering the circumstances and lessons learned may assist with evaluating risk.

Decide if Existing Fire Safety Measures are Adequate

57. A judgement needs to be made to determine whether the fire safety measures and fire safety arrangements are adequate or if more needs to be done to safeguard persons. The level of fire safety measures provided in premises should be proportionate to the level of risk posed to the safety of people and will therefore vary between premises.

Formulate an Improvement Plan

58. Carrying out an assessment of the premises is not an end in itself. The outcome of the risk assessment needs to be acted upon; risks need to be controlled in a practical way and fire safety measures and arrangements need to be put in place.

59. Potential causes of fire identified should be avoided or removed, if reasonably practicable to do so. If they cannot be removed, measures should be taken to control the risks.

60. Where improvements to fire safety measures in premises are considered necessary as a result of assessment of risk, a plan for implementation of the improvements should be drawn up. The plan should have priorities and timescales for the completion of the action required.

61. Where improvements involve building work, the work should be done in accordance with Building Regulation procedures. In a listed building (a building of special architectural or historic interest included in a list compiled by the Scottish Ministers), alternatives to conventional fire safety measures may be appropriate. Guidance is available in *Guide for Practitioners 7 Fire Safety Management in Traditional Buildings* issued by Historic Scotland.

Record the Findings

62. Having carried out a fire safety risk assessment of the premises, fire safety law requires that certain information be recorded where five or more employees are employed by an employer (whether they are on the premises or not) or the premises is subject to licensing or registration, or an Alterations Notice has been issued requiring this. Chapter 4 contains recommendations in respect of record keeping.

Review the Assessment

63. The fire safety risk assessment should be reviewed regularly and also before any significant or relevant changes are made or if relevant safety issues arise. This will involve setting time aside to consider whether change has affected the risk and whether fire safety measures remain appropriate.

64. Where changes are proposed, the consequence to fire safety in the premises should be considered before the change is introduced. Changes that might prompt a review of the risk assessment include:

- a change in the number of people present or the characteristics of the occupants
- changes to work procedures, including the introduction of new equipment
- alterations to the building, including the internal layout
- significant changes to furniture and fixings
- the introduction or increase in the storage of dangerous substances

65. A review should occur on becoming aware of shortcomings in fire safety measures, potential improvements, or a fire or 'near miss' occurs which may indicate that the existing fire safety measures are inadequate. If the Fire and Rescue Service has attended a fire in the premises, its fire investigation findings may help inform a review.

66. In any case, a review of the fire safety risk assessment should be carried out regularly. This will involve setting time aside to consider whether there has been any change which would affect the risk and therefore confirming that the control measures are still appropriate.

67. Generally, reviews of a risk assessment should be carried out in-house by the premises management. This will reinforce ownership of fire safety management and assist in the development of relevant knowledge and of a fire safety culture. However where significant changes to premises have occurred, it may be advisable to seek specialist advice.

Table 1 – Ignition Sources

Potential ignition sources are those where sources of heat could get hot enough to ignite material. This could include:

- smokers' material - such as cigarettes, matches and lighters
- naked flames - such as candles or gas open-flame equipment
- heaters - electrical, gas or oil-fired (fixed or portable)
- hot processes - such as repair work by contractors
- cooking, laundry, and lighting equipment
- deliberate fire raising
- electrical equipment or fixed installations

There are various ways to reduce potential sources of ignition, for example:

- replace naked flame and radiant heaters with a central heating system
- restrict the movement of, and guard portable heating appliances
- install, use and maintain electrical, gas and mechanical equipment in accordance with the manufacturer's instructions
- take precautions to avoid deliberate fire-raising

Table 2 - Fuel

Material which will burn and is in enough quantity may provide fuel for a fire. This includes contents, fixtures, fittings, structure, wall and ceiling linings and surfaces. Some examples of 'fuels' are:

- textiles, soft furnishings, clothing and laundry
- flammable liquids and solvents, such as white spirit, methylated spirit, cooking oils, disposable cigarette lighters and adhesives
- wood, paper, cardboard, plastics, cellular foam, rubber and upholstered furniture
- flammable gases such as liquefied petroleum gas (LPG) and aerosol contents

There are various ways to reduce the materials and substances which burn, and to separate them from ignition sources, for example:

- control the storage of flammable and combustible materials in public areas
- remove combustible wall and ceiling linings, such as timber, polystyrene or carpet tiles (to reduce the surface rate of flame spread and smoke production)
- ensure that rubbish is not allowed to build up

Table 3 - Oxygen

The main source of oxygen for a fire is in the air around us. Air supply can be by natural air flow through doors, windows and other openings; or mechanical air conditioning systems and air handling systems. Buildings may have a combination of sources capable of introducing or extracting air.

Potential sources of oxygen supplied to a fire can be reduced by:

- closing doors and other openings
- ensuring that doors are close fitting and, where appropriate, fitted with seals
- closing down ventilation equipment

The action may be a precaution taken in case a fire starts, such as keeping certain doors closed. In other cases, the action may take place once a fire is detected, such as when ventilation equipment is shut down (either manually or automatically), or when doors are closed, either manually or by the automatic release of hold-open devices.

High concentrations of oxygen pose a special hazard.

Chapter 3: THE PERSONS IN THE PREMISES

68. The number, nature and location of the occupants needs to be considered. This will influence the fire safety measures necessary. In some cases, the risk to persons will be influenced by their particular circumstances and by their location in, and familiarity with, the premises.

69. Fire can pose a serious risk to the occupants of premises providing sleeping accommodation. People are vulnerable to fire when asleep and the level of risk can increase at night.

70. In some premises, such as premises where residents are vulnerable due to lifestyle factors or are undergoing rehabilitation, there may be residents under the influence of drugs, alcohol or medication. As a result, the nature of the residents often pose special problems in respect of fire as a result of their mobility, awareness and understanding may be impaired. This will directly affect their ability to respond to a fire. Where this is the case, then consideration should be given to the additional risks posed and the assistance which may be required.

71. Other than staff, the persons residing in premises to which this guide applies can generally be considered in three different categories:

- short-term guests who are largely unfamiliar with the premises – residing in premises where there is some day-to-day management control or supervision, such as hotels, tourism hostels and bed and breakfast

- longer term residents who have familiarity with their own part of the premises and who reside in premises with or without day-to-day management control or supervision, such as some hostels and other HMOs

- short term occupiers of premises where there is no day-to-day management control or supervision - such as self-catering holiday accommodation

72. The category of resident and the presence or otherwise of management are factors to take into account in making judgements about fire safety.

73. Numbers of persons can be anticipated from the size of the premises, occupancy levels and trading patterns. A guide to potential capacity of some rooms is to divide the area by an occupancy load factor. For example a common room of 30 m^2 with a load factor of 1 gives an occupancy of 30 persons.

Table 4 Occupancy load factor of rooms

Description of room	**load factor**
committee room, common room, conference room, dining room, lounge (other than lounge bar), meeting room, reading room, restaurant, staff room, waiting room	1

74. Occupancy capacity is not used for determining capacity limits because it takes no account of means of escape or other fire safety measures. For example, exit capacity needs to be compared to occupancy capacity. The number of persons who can safely use rooms or storeys may be more or less than calculated because of the means of escape provided, or other fire safety measures in place.

75. Some persons who have a disability may have difficulty in perceiving or responding to a fire or in leaving the premises if there is a fire. In considering staff, guests, residents and visitors, any disability and associated difficulty should be identified. Any special assistance required in terms of personal evacuation needs can be identified when guests first register, residents are first accommodated or when tenants take up a tenancy. Information and guidance on the evacuation of disabled persons in the event of fire is available in Practical Fire Safety Guidance: The Evacuation of Disabled Persons from Buildings.

76. Disabled residents and guests should be considered in respect of where they could be located to minimise their evacuation route or effort in the event of fire.

77. Where children or young persons are accommodated, account should be taken of the vulnerability and supervision needs and the lack of awareness and immaturity of young persons, including any young persons employed. In some hotels children might be otherwise left unattended in hotel bedrooms where there is a child listening or patrolling service.

Chapter 4: MANAGING FIRE SAFETY

78. A management commitment to fire safety is important to assist with achieving suitable fire safety standards in premises and in maintaining a culture of fire safety.

Fire Safety Policy

79. There should be a clearly defined fire safety policy which includes arrangements for planning, organisation, control, monitoring and review of fire safety measures.

80. There should be one named individual with overall responsibility for the coordination of fire safety management within each premises. Additionally, in multi-site organisations there is a need to establish responsibility for fire safety within the organisation as a whole and the arrangements for monitoring the management of fire safety.

81. In multi-occupied buildings there is a need for co-ordination between proprietors or occupiers to account for the overall fire safety arrangements.

Emergency Fire Action Plan

82. An emergency fire action plan sets out the action that staff and other people in the premises should take in the event of a fire. It is a management responsibility to have in place an emergency fire action plan specific to the premises and to have in place arrangements to implement the plan. Table 5 shows a checklist relevant to an emergency fire action plan.

Table 5 - Emergency Fire Action Plan Checklist

- how people will be warned if there is a fire
- what staff or occupants should do if they discover a fire
- what staff or occupants should do in the event of a fire or the fire alarm activating
- the arrangements for calling the Fire and Rescue Service
- the action to be taken by the person in charge (if relevant) when the fire alarm activates or a fire is discovered
- arrangements for fighting fire by staff trained to use fire extinguishers
- any processes or power supplies that need to be stopped or isolated
- the procedure to evacuate the premises, taking into account the personal evacuation needs of individual residents or occupants
- procedures for checking whether the premises have been evacuated and where occupants should assemble or be taken after they have left the premises
- procedures for meeting the Fire and Rescue Service and passing on details of the incident, whether all persons are accounted for and the presence of any dangers
- contingency arrangements for the relocation or welfare of evacuees

83. Emergency evacuation is a management responsibility and the plan should not rely on the attendance of the Fire and Rescue Service to work. The creation of an evacuation plan for all occupants is a responsibility of the employer (where there are employees) or the persons with control of the premises such as proprietor, owner, landlord or agent, whether the premises are usually staffed or not.

84. Staff should be aware of the emergency fire action plan through their training and instruction.

85. In premises where staff are not usually present, arrangements should be in place to make occupants aware of these arrangements. Residents and others in premises which are not usually staffed should be in no doubt of the action to be taken in the event of fire and of the measures necessary to prevent an outbreak of fire.

86. Where provided, the use of lifts needs to be considered. In general, lifts should not be used for evacuation, though some lifts may be designed for evacuation of disabled persons. If fire-fighting lifts are to be used for evacuation, this should be agreed and co-ordinated with the Fire and Rescue Service who may, on arrival, need to take control of the lift for fire-fighting.

87. Notices containing extracts of the emergency fire action plan should be permanently displayed in appropriate positions throughout the building. Residents and overnight guests should be made aware of the fire procedure by means of a written fire action plan within their bedroom. The provision of notices is covered in paragraph 250.

Fire Safety Information and Training

88. It is important that staff know what they have to do to safeguard themselves and others on the premises and to have an awareness of the importance of their actions including risk reduction, maintenance of fire safety measures and action if there is a fire.

89. All staff (including shift workers, cleaners, volunteers, temporary staff) should be given information, instruction and training on the action to be taken in case of fire and the measures to be taken or observed on the premises.

90. Staff training should take place at a frequency which will ensure that staff remain familiar with procedures. The specific fire safety training needs of any young persons employed should be considered.

91. Fire safety training should be specific to the premises. Table 6 shows a staff training checklist. What is important is not simply the fact that staff training has taken place, but that staff have the knowledge and understanding of what they should do in the event of fire and also actions to prevent fire. Assurance to confirm staff understanding could be achieved by incorporating a post-training check.

Table 6 - Fire safety training checklist

- instruction on the operation of the fire alarm control panel, with particular attention to the information displayed and how to interpret this information
- the action to take on discovering a fire
- how to raise the alarm of fire
- the action to take upon hearing the fire alarm
- the arrangements for calling the Fire and Rescue Service
- the significant findings of the fire safety risk assessments
- the measures that have been put in place to reduce the risk from fire
- the identity of people nominated with responsibilities for fire safety
- any special arrangements for serious and imminent danger to persons from fire
- the procedures for alerting visitors including, where appropriate, directing them to exits
- the measures in place to ensure a safe escape from the building and how they will operate
- the personal evacuation needs unique to each resident
- the evacuation procedures for everyone in the building to reach an assembly point at a safe place
- the fire prevention and fire safety measures and procedures in the premises and where they impact on staff and others in the building
- the location and use of fire-fighting equipment
- the location of the escape routes, especially those not in regular use
- how to open all doors on escape routes, including the use of any emergency fastenings (and locks where appropriate)
- the purpose of fire doors and the importance of keeping fire doors closed to prevent the spread of fire, heat and smoke
- the importance of good housekeeping
- the risks from flammable materials used or stored on the premises
- the precautions to be taken to minimise and control the risks, with particular attention to their role in reducing and controlling fuel and ignition sources
- the need for staff to report defects in fire safety measures

92. The knowledge and understanding that employees require will be guided by the role and function the member of staff is expected to fulfil. Staff who have a supervisory role should receive additional training which will enable them to discharge their specific responsibility.

93. Those staff who may require to physically move or assist residents during an evacuation, should receive manual handling training on the method of achieving this and should be familiar with the use of any evacuation aids or equipment provided for this purpose.

94. A record should be kept of individual staff member training and should include the date and time, content, duration and trainer.

95. Where work is undertaken in the premises by outside contractors, then fire safety law specifically requires that information on risks and fire safety measures be notified to these workers and their employers. If any child (not over school age) is employed to work on the premises, information on risks and fire safety measures must be given to their parents.

96. Information may need to be issued to staff whenever there is a change in the risk from fire, where changes have been made to the emergency fire action plan or other fire safety measures, or where working practices or people's responsibilities have changed. This includes temporary changes such as when contractors' work is in progress.

97. Arrangements for the provision of information to occupiers who are not staff members, should also be devised and implemented as necessary. Information should be tailored to the needs of each category of occupier and take into account whether there is normally a management presence in the premises.

98. Residents or tenants and others in premises which are not usually staffed should be in no doubt of the action to be taken in the event of fire and of the measures necessary to prevent an outbreak of fire.

Fire Drills

99. The extent of fire drills will vary, depending on individual circumstances found in the range of premises covered by this guide. Drills should be tailored to suit the needs of different occupancies and should be aimed at ensuring that those persons with responsibilities know what is required of them.

100. Staff and permanent residents may not follow appropriate action in an emergency if they have never experienced that action. Fire drills should be carried out to check their understanding and familiarity with the operation of the emergency fire action plan, to evaluate its effectiveness and identify any weaknesses.

101. The frequency of drills for each building should reflect the level of risk and may therefore be different for different premises. Fire drills should take place no less frequent than twice a year or once a year for small premises. Experience in individual premises, especially premises which are not usually staffed, may show that there is a need to vary the suggested frequencies.

102. In small establishments, it may be impractical to carry out a full evacuation of premises. Nonetheless, it is essential that proprietors or staff are aware of their duties and carry out their own modified "fire drill" periodically to ensure that their role in a fire is tested in practice.

103. For small holiday home accommodation where staff are not usually present, a fire drill will not be necessary or practical.

104. Where premises have residents or tenants staying for longer periods, the residents or tenants should be made fully aware of emergency procedures which should be tested by a fire drill involving a full evacuation of the premises concerned.

105. During drills, the fire routine should be rehearsed as fully as possible. A member of staff who is told of the supposed outbreak should operate the fire alarm. In large premises, scenarios can be introduced to reflect what could occur in a fire, such as an escape route unusable.

106. If the fire warning system is connected to a remote alarm receiving centre, the receiving centre should be informed or the link should be taken off-line (to prevent the Fire and Rescue Service being called) and then reinstated when the drill is terminated.

107. When carrying out a fire drill in large premises, it may prove helpful to nominate observers to assess the appropriateness of actions and identify problems such as

communication difficulties, the use of a frequently used route instead of the most appropriate escape route or difficulties with door fastenings.

108. Where the drill involves evacuation, the drill should include a means of establishing and reporting that all persons have evacuated.

109. The results of the fire drill should be recorded, discussed with staff or occupants, and action should be taken to address any issues which have arisen.

Maintenance of Fire Safety Measures

110. There should be regular checks, periodic servicing and maintenance of the physical fire safety measures. Any defects which occur should be put right as quickly as possible, though there may be a need for contingency plans when life safety systems such as fire-warning systems or sprinklers are defective.

111. The maintenance and testing of some systems and equipment will fall within the recommendations of a British Standard. Examples of testing and maintenance are given below. Some six monthly and annual tests may normally be carried out as part of a service contract. Experience in individual premises may show a need to vary the suggested frequencies, such as for premises that are unstaffed or used on an infrequent basis.

<u>Escape routes and doors</u>

- Daily walk through to check escape routes are clear of obstructions and combustible material. And that self-closing doors are not wedged open
- Weekly check of escape routes, safety signs and notices, exit securing mechanism; and door self-closing devices
- Six monthly check that fire doors are in good working order: inspect doors for warping or distortion, fire-resisting glazed panels are in good condition and secure in their frame, and that intumescent strips and smoke seals are in good condition

<u>Portable fire fighting equipment</u>

- Monthly visual check of fire extinguishers and hose reels to ensure no obvious faults
- Annual maintenance (though certain types do not require this)

<u>Fire warning system</u>

- Daily check of the control and indicating equipment (where provided) to ensure the system is operational
- Weekly test by activating a manual call point (usually by inserting a test key). This checks that the control equipment is capable of receiving a signal and in turn, activating the sounders. A different call point is used for each successive weekly test. Call points can be numbered to assist with sequential testing. It is good practice to test the alarm at the same time each week, but also to ensure that shift workers are given the opportunity to hear the alarm. During the test, the alarm should not operate for too long so there is a distinction between a test and an unplanned activation. Check that the test causes the operation or disabling of other features such as electrically powered locks, the release of doors on hold-open devices, the operation of doors on swing free arms and automatic opening doors reverting to manual operation. Where the system is connected to an alarm receiving centre (ARC), the ARC should be warned before carrying out the test, then confirmation requested after the test that the signal was received correctly

- Six monthly servicing and preventive maintenance
- Where a BS 5839: Part 6 Grade A or D fire alarm system has been installed, then test the system by activating the test facility

Emergency lighting

- Monthly functional test of all emergency light fittings at a time when, following the test, the lighting will not be immediately required. Test methods vary; some systems have self-testing facilities that reduce routine checks to a minimum
- Annual maintenance and full discharge test

Suppression system

- Six monthly and annual check and routine

112. Residents or tenants in some premises without a management presence, such as HMOs or leased holiday home accommodation, may have some responsibilities as a result of their tenancy agreement or lease. It may be appropriate for residents/tenants to carry out some basic tests and checks, in the absence of the owner or landlord/managing agent, subject to them being proficient to do so. However, responsibilities are likely to be restricted to some daily and/or weekly tests and checks only. Residents and tenants should report any deficiencies in fire safety measures, such as inoperative smoke detectors, smoke alarms or broken door closers. Landlords/managing agents should have a system to resolve deficiencies identified by tenants or by their normal routine inspection programme.

Third Party Certification

113. Other than where work is exempt, any work to a building must comply with the building regulations irrespective of whether or not a building warrant is required Building regulations requires that materials, fittings, and components used should be suitable for their purpose, correctly used or applied, and sufficiently durable.

114. Fire protection products should be fit for purpose and properly installed and maintained, while installation and maintenance contractors should be competent. Third-party certification, where a reputable certification body independently checks competencies and processes and that standards are being met, is one method of providing a reasonable assurance of quality of products and services, provided that the certification body itself is a competent evaluator. Accreditation by UKAS [6] is an indication that a third-party certification body is a competent evaluator. Products and services that are not third-party approved by an accredited body are not necessarily less reliable, but accredited third-party certification can offer assurance. Information on schemes is available from trade associations.

Recording Information and Keeping Records

115. Paragraph 62 indicates those premises where there is a requirement to keep records in respect of fire safety. The records that should be kept are:

- the significant findings from the fire safety risk assessment
- the resulting fire safety measures and action to be taken
- persons who are especially at risk
- fire safety arrangements for the effective planning, organisation, control, monitoring and review of the fire safety measures

[6] UKAS (United Kingdom Accreditation Service) is the national accreditation body for the UK

116. In low risk premises and most small premises, it will be proportionate to keep no more than details of the significant findings from the risk assessment, any action taken as a result of the fire safety risk assessment, and a copy of the emergency fire action plan.

117. In other premises a full record should be kept. As part of the requirement to record fire safety arrangements, this should include a record of the results of maintenance and testing. These could be either electronic or paper based and retained for at least three years for possible audit by the enforcing authority.

118. For large premises, a fire safety manual for staff should be kept in addition to other records. This type of fire safety manual should contain technical specifications, detail of the fire safety measures, an explanation of the operation of different systems and specific information on testing and maintenance.

Chapter 5: REDUCING THE LIKELIHOOD OF FIRE

119. An effective strategy should be in place to reduce the likelihood of a fire starting. At its simplest, this means separating flammable and combustible materials from ignition sources and ensuring that equipment and installations are maintained.

Housekeeping and Storage

120. Control of combustible materials should be achieved by attention to good housekeeping principles. By carefully considering the type of material, the quantities kept and the storage arrangements, risks can be significantly reduced. Appropriate practices are:

- not storing combustible materials in plant rooms, boiler rooms, attics, service voids and shafts, electrical main or sub-switch rooms
- control and frequent disposal of packaging, waste and other combustible rubbish
- loose storage, bins and waste external to the building, sited well away from the building so that any fire cannot affect external walls or overhanging eaves
- external bins and storage containers secured to prevent movement
- where fire-raising is a potential problem, bin and container lids fitted with locks
- regular building checks to ensure that storage arrangements are appropriate

Storage and Use of Dangerous Substances

121. Certain substances and materials are by their nature, flammable, oxidising or potentially explosive. These substances are controlled by legislation, in particular the Dangerous Substances and Explosive Atmospheres Regulations 2002. The principles of safe handling and storage are:

- avoid the use of flammable materials and liquids wherever possible or substitute flammable substances and materials with those that are preferably non-flammable or with those that are less flammable
- reduce the quantity of dangerous substances to the smallest reasonable amount necessary for use
- correctly store dangerous substances, for example in a fire-resisting metal enclosure - all flammable liquids and gases should ideally be locked away, and segregated if necessary, to reduce the chance of them being involved in a fire or used in deliberate ignition
- ensure good ventilation is provided by way of high and low level vents to allow any flammable vapours to be dispersed
- ensure that all persons are aware of the fire risk of dangerous substances present and the precautions necessary

122. Where gases are stored in cylinders these should ideally be stored and used in the open air outside the building and be located where they cannot be interfered with, and where they will not affect the means of escape. They should not be beside heat, a source of ignition or readily ignitable material and care should be taken to minimise the possibility of involvement in a fire.

123. The presence of flammable liquids increases the chance of a fire starting and its rate of development. For example, a leak from a container of flammable liquid may produce flammable vapours which can travel some distance away from the source of the leak, increasing the likelihood of reaching a source of ignition. Vapours could reach rooms containing heating plant or electrical equipment. The risk can be reduced by ensuring the

storage and use of flammable liquids is carefully managed and materials contaminated with flammable liquids are properly disposed of. Further guidance is available on the HSE website at www.hse.gov.uk/fireandexplosion/.

124. Under normal circumstances, Liquefied Petroleum Gas (LPG) is flammable and is heavier than air. Where LPG cylinders or cartridges are used, these should be stored and used in the open air outside the building. Care should be taken to minimise the possibility of involvement in a fire.

125. Some premises use bulk LPG fixed installations for cooking or heating, comprising an external tank and supply piping. In these installations there is a need to ensure that there are no fires in the vicinity of the LPG tank, and to consider the maintenance of the installation and piping.

126. Guidance on the safe storage and use of LPG is available from the supplier, and the trade association for the LPG industry UKLPG (www.uklpga.org), and on the gas safety pages of the HSE website at www.hse.gov.uk.

127. Flammable propellants are often used in aerosol cans. Aerosols are liable to explode if involved in a fire, causing spread and intensification of fire and possibly damaging doors so that they fail to function in restricting the spread of fire and smoke. These potential consequences should be taken into account and appropriate use, storage and disposal arrangements put into place for aerosols, taking into account the quantities involved. Manufacturers' instructions should be followed. Storage should be away from escape routes and no storage should be allowed in boiler houses or other areas containing fixed sources of ignition. They should not be stored or placed in damp areas where the container might corrode. Aerosol cans can overheat and rupture in direct sunlight therefore avoid placing aerosol cans containing LPG/flammable liquid propellant on window ledges.

Furniture and Textiles

128. The choice of furniture, fittings and textiles can influence the ease of ignition and growth of a fire. Fabrics and textiles should be either inherently flame retardant or durably treated and appropriately labelled. Laundering should be undertaken in accordance with the manufacturers' specific instructions.

129. Upholstered furniture (and composites of cover material and infill) should meet the standards in the Furniture and Furnishings (Fire) (Safety) Regulations 1988, and in addition, pass the flammability standard in BS 5852 with ignition source 5. Upholstered furniture should be maintained in good condition so that there are no tears which expose the filling material.

130. It is recognised that some premises may contain period items of significant monetary, sentimental or historic value which, due to their age, will not comply with modern British Standard requirements. Where such items are not replaced, this should be taken into account when carrying out the fire safety risk assessment and other steps taken to reduce the potential for a fire to start and develop.

Safe Use of Equipment

131. Lack of preventive maintenance increases the likelihood of fire starting in equipment. A competent person should regularly maintain (and where necessary clean) machinery, equipment and plant, including cooking, heating and office equipment. Appropriate signs and instructions on the safe use of equipment may be necessary.

132. Generally, equipment ventilation points should be kept clear to avoid becoming clogged or blocked. A build-up of grease or fat deposits should be removed from equipment in kitchens, including extraction equipment.

133. There should be a procedure for reporting faults. Faulty equipment should be taken out of use when it is identified or suspected of being defective, and thereafter repaired or replaced.

Electrical

134. Electrical installations[7] and electrical equipment can be a significant cause of fire. Possible causes include:

- equipment faults
- overheating cables and equipment due to overloading or loose connections
- incorrect installation, use or maintenance
- damaged or inadequate insulation
- combustible materials placed close to heat-producing electrical equipment
- arcing or sparking
- modifications to an installation by unskilled/incompetent persons

135. Some precautions are:

- maintenance of installations and equipment should be done only by persons competent to do so
- electrical equipment should only be used for its designed purpose
- correctly wired and fused extension leads and plugs should be used
- electric blankets should be maintained and serviced in accordance with the manufacturers' guidance
- sockets and extension leads should not be overloaded

136. To reduce the potential for a fire occurring, there should be an effective programme of planned preventive maintenance for electrical installations and equipment.

137. Guidance on electrical safety, including FAQs on maintaining portable appliances, is available on the HSE website at www.hse.gov.uk/electricity/index.

Smoking

138. Careless use of cigarettes and other smoking materials is a common cause of fire. A cigarette can smoulder for some time, especially when surrounded by combustible material.

139. Smoking should only be permitted in those areas where the statutory prohibition on smoking does not apply. In each case, there should be a clearly defined smoking policy for residents, staff, guests and visitors. Where designated smoking bedrooms are provided in hotels or hostels, these should be enclosed spaces with ventilation systems that do not ventilate into any other part of the building that is required to be smoke-free and must be marked as a room in which smoking is permitted.

[7] An 'electrical installation' is the electrical system from the premise's supply meter point to the socket outlets etc.

140. Where smoking is permitted in designated rooms, sufficient quantities of ashtrays should be provided. Ashtrays should be emptied regularly each day into a metal container which is then taken outside. Ashtrays should not be emptied into plastic waste bags. Inspections of smoking areas should be made at regular intervals with staff being vigilant for any sign of scorch marks or burning. Staff should ensure that discarded smokers' materials are removed and that they are fully extinguished. Evidence of scorch marks or burning on furniture or carpets indicates that some residents may need additional supervision.

141. Supervision and precautions need to be considered if there are residents that have a known history involving careless use of smoking materials.

Managing Building Works and Alterations

142. Fires often occur when buildings are undergoing refurbishment or alteration. Before any major building work or decoration, the fire safety risk assessment should be reviewed and additional risks considered and evaluated. There are three aspects of building work that should be considered:

- the introduction of new ignition sources and combustibles and the associated risk of fire occurring during the work
- the potential interference with the existing fire safety measures while the building work is underway
- whether the building work will result in adverse changes to existing fire safety measures

143. To ensure that fire safety measures are not compromised and that adequate controls are in place, it is important to ensure co-operation between the building contractor and management. It may be appropriate to specify site-specific fire precautions in contract conditions.

144. Examples of issues that may arise with building work that need to be considered and controlled are:

- the potential for fires to be caused by hot work such as soldering, welding, flame-cutting, roof repair, paint stripping
- increased quantities of combustible materials and accumulated waste obstruction of internal and external escape routes
- loss of normal storage facilities
- fire safety equipment, such as automatic fire detectors, out of use
- fire-resisting construction being breached or fire-resisting doors being wedged open

145. Hot work should only be undertaken when suitable precautions and equipment are in place. This may be the use of an industrial quality fire blanket to mask areas adjacent to the work being carried on, an appropriate fire extinguisher provided immediately to hand, or where the activity presents a high fire risk, an observer standing-by with responsibility to identify any fire propagation from sparks or other source. Areas where hot work is undertaken should be frequently inspected during the first 30 minutes after the work is completed, and then 30 minutes later to ensure that no materials are smouldering. A 'permit to work' system is a useful procedure and management tool which allows a degree of control over contractors or staff who may be carrying out hot work.

146. Modern buildings of timber frame construction contain combustible material in the structure. Care needs to be taken with tools or heat sources where any construction work or alteration involves drilling or cutting openings in the outer cladding or the inner plasterboard skin.

147. The content of skips, waste containers or combustible material may be subject to deliberate ignition. Storage, preferably in lockfast non-combustible containers, should be away from the building so that any fire cannot affect external walls or overhanging eaves.

148. Only the minimum materials necessary for the work in hand should be allowed within the building or close to the exterior of the building.

Keeping Escape Routes Clear

149. There needs to be control over the provision of combustible materials in escape routes. If a fire was to occur in an escape route or spread to material in the escape route, this could be a particularly difficult and threatening situation, preventing occupants from escaping.

150. Stairways that form part of escape routes should be kept clear of combustible items and items that could be a source of ignition. Items kept in corridors should be controlled, particularly bedroom corridors, consistent with the need for the normal functioning of the premises.

151. The maintenance of adequate escape route width and prevention of obstruction is also relevant. Escape route width is covered in Chapter 7.

152. Examples of some items which are normally unacceptable in stair and corridor escape routes are:

- gas cylinders, gas pipes, meters and similar fittings
- cooking appliances
- upholstered furniture
- coat racks
- electrical equipment such as photocopiers and battery chargers
- storage of combustibles

Fire-raising

153. The possibility of deliberate fire-raising should be considered. This may be particularly relevant in areas with a history of vandalism or fire-setting.

154. Appropriate precautions should be taken. This may involve ensuring the premises is secure against unauthorised access to non-residents, there is no unauthorised access to plant areas or other unoccupied spaces, and that waste stored external to the building, is kept in lockfast bins or stores. Security measures should not compromise the means of escape and the ability to evacuate.

155. In institutional premises, where there may be residents with a known predisposition to starting fires, increased supervisory measures may need to be implemented.

Chapter 6: RESTRICTING THE SPREAD OF FIRE AND SMOKE

156. To reduce the risk to persons from fire, it is necessary to consider how to restrict the spread of fire and smoke. The majority of people who die in fires are overcome by smoke. To evaluate the risk requires a basic appreciation of the way fires grow and how smoke can spread through a building. A fire in a building can generate smoke that is thick and black, obscures vision, causes difficulty in breathing, and can prevent persons from using escape routes. Smoke is a serious threat to life which should not be underestimated.

157. Fire is spread by convection, conduction and radiation. Convection causes the major proportion of injuries and deaths. When fire starts in a building, the smoke rising from the fire becomes trapped by the ceiling and then spreads in all directions to form an ever-deepening layer over the entire room space. The smoke will pass through any holes or gaps in the walls, ceiling and floor into other parts of the building. The heat from the fire gets trapped in the building and the temperature rises. Some materials, such as metal beams can absorb heat and transmit it to other rooms by conduction, where it can set fire to combustible items that are in contact with the heated material. Radiation transfers heat in the air in the same way that an electric bar heater heats a room. Combustible material close to a fire will absorb the heat until the item starts to smoulder and then burn.

Fire Separation and Compartmentation

158. The purpose of fire separation is to provide a physical fire-resisting barrier to restrict fire and smoke spread between different occupancies and between single occupancy parts and communal areas. Where premises adjoin or are part of a larger building, the potential for an outbreak of fire to spread to or from the neighbouring building or another occupancy should be considered.

159. A fire compartment is part of a building constructed to provide a physical fire-resisting barrier to prevent the spread of fire and smoke to or from another part of the building. The life safety objectives of fire compartmentation may be to:

- reduce the number of occupants who may be immediately at risk
- reduce the travel distance for persons
- restrict the size and growth of fire
- protect occupants where there may be delayed evacuation of premises

160. For the purposes of smoke control, corridors that have at least two directions of escape, and with more than 12 m in length between the exits, may be divided in the middle third of the corridor with a wall or screen with at least 30 minutes fire-resistance (for integrity) and the door in the wall or screen at least an FD30S self-closing fire door.

161. Bedroom corridors should be protected routes whereby the doors and walls forming the bedroom corridor, other than doors serving only toilets where the potential for fire is low, have at least a nominal 30 minutes fire resistance. The doors should be self-closing and have smoke seals (see paragraph 172). This offers protection to the bedroom corridor escape route from fire and smoke if a fire starts in a bedroom or other room, maintaining the tenability of the escape route to give maximum evacuation time. Figure 3 shows a floor layout with a protected bedroom corridor.

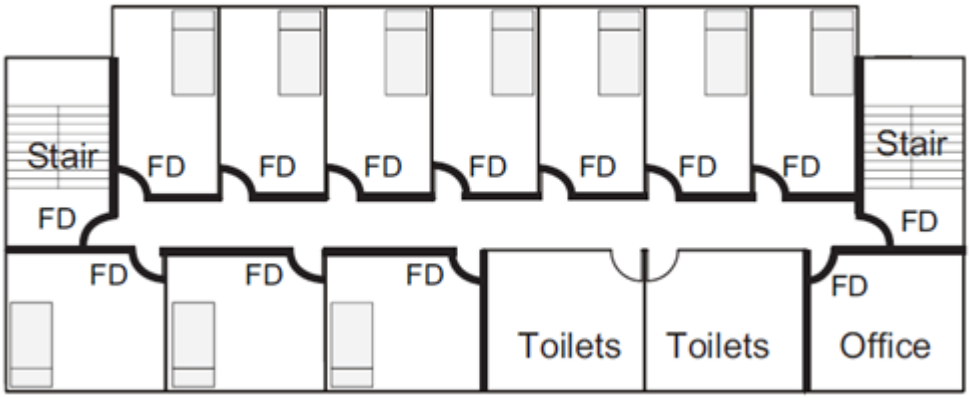

Figure 3 - Protected bedroom corridor

162. A lift well can be a route for vertical fire spread. A lift well which is enclosed by walls with fire-resistance will be a barrier to fire spread. A lift well which is totally within a protected area such as an enclosed stair, is already within a fire resisting enclosure. Where a lift well is not the full height of the building, the fire resistance of the floor and/or ceiling needs also to be considered.

163. Where services pass through any fire resisting structure, gaps should be sealed or fire stopped to maintain the fire resistance of the structure and prevent the passage of fire or smoke. Pipes should be fitted with a proprietary sealing system capable of maintaining the fire-resistance. A similar consideration exists for penetration by ventilation ducts.

164. Boiler rooms and plant rooms are a possible source of fire. To contain a fire, at least in its early stages, a room may be enclosed by walls with fire-resistance where it contains an appliance (solid fuel, oil or gas fired, or fuel oil tanks). Where the appliance or equipment uses liquid fuel, the room should be able to contain all the liquid plus 10%.

165. In situations other than in bedroom corridors, some rooms may need to be enclosed by floors, walls, doors and ceilings, to provide at least 30 minutes fire-resistance, in order to contain a fire in its early stages. Some examples are shown below.

- storage rooms and cupboards
- staff changing and locker rooms
- smoking rooms
- kitchens and laundry rooms
- day rooms
- rooms containing a lift drive mechanism (unless already within an enclosure)

Smoke Control

A hotel with an atrium may include an automatic smoke and heat exhaust ventilation system (SHEVS). SHEVS are used in conjunction with automatic fire suppression systems; suppression limits the size of a fire therefore controlling the amount of smoke produced. Smoke control in this context is a specialist subject.

Doors

Fire doors

166. A 'fire door' is a fire-resisting door which is rated by performance to fire under test conditions. Fire doors are used to prevent fire spread and for the protection of means of escape. A self-closing device is a normal feature of a fire door, though there are some exceptions such as doors to small cupboards which are kept locked shut.

167. A fire door rated to 30 minutes is described as FD30[8] or E30[9]. A suffix is added to denote that the door has a smoke control function giving FD30S and E30Sa respectively. A 60 minutes fire door with smoke control is designated FD60S or E60Sa. The door rating is an indication of test performance and is not necessarily how a door will perform in a real fire.

168. The level of protection provided by a fire door is determined by the time taken for a fire to breach the integrity of the door assembly, together with its resistance to the passage of smoke, hot gases and flame. The gap between the door leaf and the frame is normally fitted with intumescent strips, in either the door or the frame (but not at the bottom of the door). The strips expand in response to heat from a fire, to seal the gap between the door leaf and the frame.

169. Smoke seals fitted to the door leaf gap prevent the spread of smoke at ambient temperatures, before an intumescent strip expands.

170. In determining the performance of a door in fire, it is necessary to consider the whole door assembly including the frame, glazing, side-panels, transoms and ironmongery. In the case of a new door assembly, the manufacturer's installation instructions should be followed.

171. Some existing non-fire resisting doors may have the potential to be upgraded to nominal 30 minutes standard, but replacement of existing doors and frames is often preferable.

Self-closing function

172. A fire door will only fulfil its function to provide a barrier to fire and smoke if it is closed at the time a fire occurs. A controlled self-closing device, complying with BS EN 1154, will be fitted to each fire door (other than to certain cupboard doors).The closing pressure of the self-closing device needs to be sufficient to overcome any latch mechanism. The force or speed of the self-closing action of a door could be a source of injury to some residents. It is inappropriate to rely on a procedure whereby staff will attend and close doors as an alternative to fitting self-closers.

Hold-open and door release devices

173. There are devices which hold self-closing fire doors in the open position until a fire detection system operates. They should not be used for a door to a room in which the type of automatic fire detector is solely a heat detector.

174. A self-closing fire door can be held open by an electromagnetic hold-open device (which complies, where appropriate, to BS EN 1155 or BS 5839: Part 3) or with electromagnetic hold-open door closers (to BS EN 1155). Electrically operated hold-open

[8] tested to BS 476: Part 22
[9] tested to BS EN 1634: Part 1

devices should deactivate and release the door on operation of the fire warning system or any loss of power to the hold-open device. Doors to a stairway that forms the only means of escape from an upper floor should close automatically in the event of fault in the fire warning system.

175. An alternative release is an acoustically-activated door release mechanism complying with BS EN 1155. Acoustic devices should not be used on fire doors to a protected stair that is the only stairway serving the building or part of the building. Acoustic devices actuate in response to the sound from the fire alarm sounders so will not be appropriate where the initial fire alarm activation does not activate the fire alarm sounders (such as a staff alarm).

176. A further type of self-closing device comprises a 'swing-free' arm [10], allowing the door leaf to work normally and independently of the closing device in normal conditions. On the operation of the fire warning system or on power failure, the self-closer operates and closes the door. This type is particularly suitable for use on bedroom doors.

177. Radio-linked devices are available; these reduce the need for wiring. Some acoustic systems are battery powered.

178. BS 7273: Part 4 contains detailed guidance on conditions for use of door release devices.

179. The automatic closing of doors may take persons by surprise and the force of the closing mechanism could knock a someone over and be a source of injury. Consequently precautions should be taken to avoid injury, including during a scheduled test or action which will result in release of the doors.

Fire Spread through Cavities

180. Many buildings have cavities and voids, sometimes hidden from view, which may allow smoke and fire to spread. Examples are:

- vertical shafts. lifts and dumb waiters
- false ceilings, especially if walls do not continue above the ceiling
- voids behind wall panelling
- unsealed holes in walls and ceilings for pipe work, cables or other services
- a roof space or attic
- a duct or any other space used to run services

181. Potential fire spread through cavities and voids should be assessed and, where practical, examined to see if there are voids that fire and smoke could spread through.

182. Cavity barriers may be necessary to restrict the spread of fire in cavities, particularly for those cavities that could allow fire spread between compartments.

183. Certain modular construction buildings have hidden voids through which fire may spread. Modern timber frame buildings have cavities within the frame and these should have been installed with fire resisting cavity barriers between the external cladding and the timber wall panel at the time of construction.

[10] The mutual terms 'swing-free' and 'free-swing' are both in common use

184. Poor work standards during building work can result in cavity barriers (or the enclosure of escape routes) being breached and/or not being reinstated. This potential needs to be considered. The control of building work is covered in Chapter 5.

185. Insulated core panels (sandwich panels) normally consist of an insulated core sandwiched between an inner core and an outer metal skin. They are used in buildings as exterior cladding or for internal structures and partitions. Various materials have been used as a core. The existence of panels with a combustible core needs to be carefully considered since fire may spread through the combustible core.

Ventilation Systems

186. The potential for ventilation systems to allow the spread of fire and smoke should be assessed. A powered ventilation system may assist the spread of smoke unless it is designed to shut down automatically if fire is detected.

187. Ventilation ducts may provide a pathway for the spread of fire and smoke between compartments or into stairs. Where ventilation ducts penetrate the walls or floors of these enclosures, automatic dampers provided inside the ducts hold back fire and smoke. Dampers may need to be actuated by smoke detection. Specialist guidance on the use of dampers is contained in BS 9999.

Fire Spread on Internal Surfaces

188. Fire can rapidly spread on the surfaces of walls and ceilings, significantly affecting the rate of fire growth and smoke production. The potential for fire spread on surfaces in escape routes is important as this could prevent occupants from escaping. The internal surfaces may predominantly be:

- Category 0 for bedroom corridors, protected stairs and escape routes
- Category 1 for other corridors and large rooms

189. The grading system for surface spread of fire relates to performance against tests set out in certain British Standards. Examples of materials are:

Category 0 - brickwork, blockwork, concrete, ceramic tiles, plaster finishes (including rendering on wood or metal lathes), wood-wool cement slabs and mineral fibre tiles or sheets with cement or resin binding

Category 1 - timber, hardboard, blockboard and particle board, which have been treated to achieve this category

190. Additional finishes may be detrimental to the fire performance of the surface. Multiple layers of wallpaper or certain paints applied to the face of a wall or ceiling surface can increase surface flame spread.

191. The use of plastics for surface finishes is a complex issue and outwith the scope of this guidance document. Information on the suitability of plastic materials can be found in the Scottish Building Standards Technical Handbooks.

Fire Spread on External walls

192. If there is combustible external wall cladding or construction, it will be necessary to consider the potential for an outbreak of fire within the building, or from an external source, to spread on the external walls of the building and pose a risk to occupants.

Fire Spread from Neighbouring Buildings

193. An assessment should be made in respect of the potential for a fire to spread to the premises from any neighbouring buildings or structures and whether this could pose a risk to occupants.

Chapter 7: PROVISION AND USE OF MEANS OF ESCAPE

194. Once a fire has been detected and a warning given, everyone in the premises should, if necessary, be able to move or be assisted away from the fire to a place of reasonable safety such as an enclosed protected stair or another compartment from where they should be able to continue to escape to an unenclosed safe area beyond the premises. Means of escape is the provision of safe escape routes for people to travel from any point in a building to an unenclosed safe area, and includes the measures to maintain those routes. The number and capability of people will influence the assessment of the escape routes. The escape routes must be sufficient to enable the maximum number of people likely to use the premises at any time to safely escape.

195. Escape must also be considered from external areas like enclosed yards.

196. Means of escape should be provided both in terms of the number and capacity of escape routes and in terms of their protection from fire and smoke. When determining whether premises have adequate escape routes, a number of interdependent factors should be considered, including:

- the characteristics, number and location of people in the premises
- the construction of the premises and the potential for fire and smoke spread
- the fire compartmentation of the premises
- the time it will take people to escape

Escape Routes

197. A room containing more than 60 persons should have at least two exits, a room with more than 600 should have at least three exits. But a greater number of exits may be necessary, this will depend on the actual numbers resorting and travel distance to the nearest room exit.

198. Even where the number of persons is low, at least two escape routes may be necessary from:

- a storey over 7.5 m in height (other than flats, maisonettes and small premises)
- a basement used by the public (other than only toilets)
- a basement more than 4.5 m deep
- a flat entered from above the accommodation level

199. Larger premises will normally have at least two independent escape routes from each storey of the premises used for sleeping accommodation.

200. The direction of travel of alternative escape routes from any point within a room should:

- diverge at an angle of at least 45^{o}; or
- after a single direction of escape not more than 12 m, then diverge at an angle of at least 45^{o} plus $2½^{o}$ for every metre travelled in the single direction.

201. Escape routes should be via a direct and unobstructed route. Once occupants have left a room they should ideally not have to pass through another room to reach a protected escape route or a place of safety. Though in existing low risk situations, escape may be from an inner room through an outer room. (see paragraph 211)

202. An escape route should not be by way of

- a lift (unless specifically designed for evacuation)
- an escalator
- a manual sliding door, other than one to which the general public does not have access
- revolving or automatic doors unless arranged to fail safely in the outward opening position in accordance with BS 7036
- a window.

203. A clear headroom for escape routes and circulation areas is at least 2 m, and not less than 1.9 m in a doorway.

204. The width and geometry of escape routes should be sufficient to facilitate the evacuation method used and for the number of occupants to escape. From a room or storey with not more than 100 persons, an escape width not less than 1000 mm may be adequate. Where in excess of 100 persons, 1100 mm may be adequate. At least 1200 mm may be necessary where the room or storey is accessible to wheelchair users.

205. An escape route will not normally narrow in the direction of escape but at doorways the width can generally be 150 mm less than the escape route. Where the number of people using the escape route is not more than 225, the door width may be at least 850 mm where the number of people is not more than 100.

206. To assist with evacuation, a door across an escape route should open in the direction of escape where the occupancy capacity is 60 or more, or where occupants may need to exit quickly or the door is a final exit. In other situations it is good practice for a door to be outward opening if practicable.

207. The area outside final exit doors should have suitable underfoot conditions for persons evacuating and pathways so that persons can move away from the building.

Travel Distance

208. There should be a limit on the distance that persons should have to travel to reach a place of reasonable safety. In general, travel distance is the distance measured along the actual route of escape (having regard to the layout) from any point within a storey to the nearest door giving direct access to either; another compartment; a protected stair; or to a final exit. However in the case of flats and maisonettes, two separate travel distances are considered:

- the distance travelled within the flat or maisonettes to its main entrance or exit door
- the distance travelled from the main entrance or exit door of a flat or maisonette to the final exit, protected escape route or external escape stair.

209. Travel distance benchmarks are given in Table 7.

Table 7 Travel distance by reference to building type

	Height	**Description**	**Single direction of travel (m)**	**More than one direction of travel (m)***
Flats and Maisonettes				
Within flat or maisonette	NA	NA	15	32
From flat or maisonette door	Not more than 7.5 m	Single exit	7.5	32
		With alternative exit	unlimited	unlimited
	More than 7.5 m	Single exit	7.5	32
		With alternative exit	32	unlimited
	Any height	open access deck or open access balcony serving accommodation	40	unlimited
Other Premises				
	NA	NA	15	32

* this includes the single direction distance

210. A single direction of escape is travel before there is the choice of escape routes. See Figures 4 to 6. A single direction of escape may involve persons moving towards or past a fire, if the fire occurs between the occupant and the choice of escape routes.

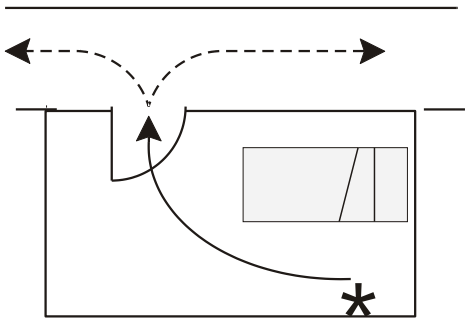

Figure 4 - Single direction of escape within a room before a choice of escape routes becomes available

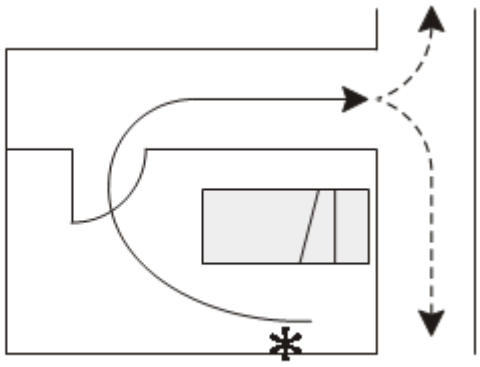

Figure 5 - Single direction of escape out of room and along a corridor before a choice of escape routes becomes available

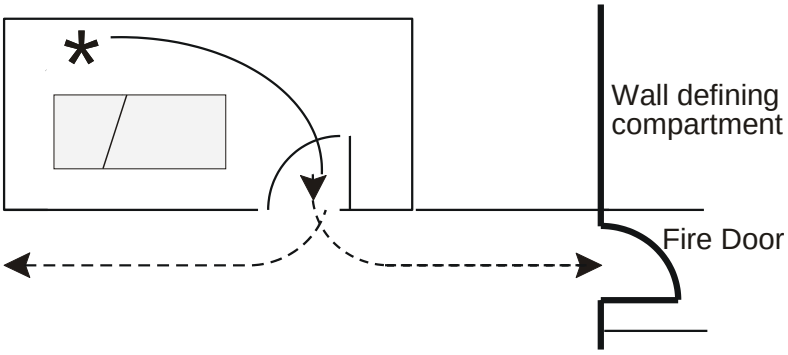

Figure 6 - Single direction of escape within a room before a choice of escape routes, one of which goes through a fire door into another compartment

Inner Rooms

211. An inner room is a room where access to a circulation area can only be achieved by passing through an access room (see Figure 7). A fire could develop unnoticed in the access room preventing the occupants of the inner room escaping. The risk to persons in the inner room will be less if the access room contains limited combustibles and ignition sources, and travel distance from any point in the inner room to the exit from the outer room are short. The following conditions will limit the risk to persons in the inner room:

- where the inner room is used as a bedroom
    - the access room should not be of a higher fire risk than the inner room and should contain limited combustibles and ignition sources
    - a smoke detector should be provided within the access room and be capable of providing a warning of fire to persons within the inner room
- the maximum travel distance from any point in the inner room to the exit from the access room should not exceed 15 m, unless there are alternative exits from the access room

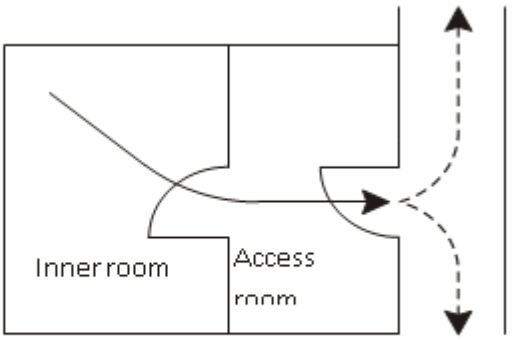

Figure 7 - Inner room arrangement

Stairs

Escape stairs

212. To protect escape routes from fire, the normal standard for escape stairs is for stairs to be enclosed within a fire resisting enclosure (creating a protected zone) such that the enclosing structure between the stair and the rest of the building has fire-resistance and any door in the enclosing structure is a self-closing fire door. This arrangement is shown in Figure 8. Each escape stairs should have its own independent final exit.

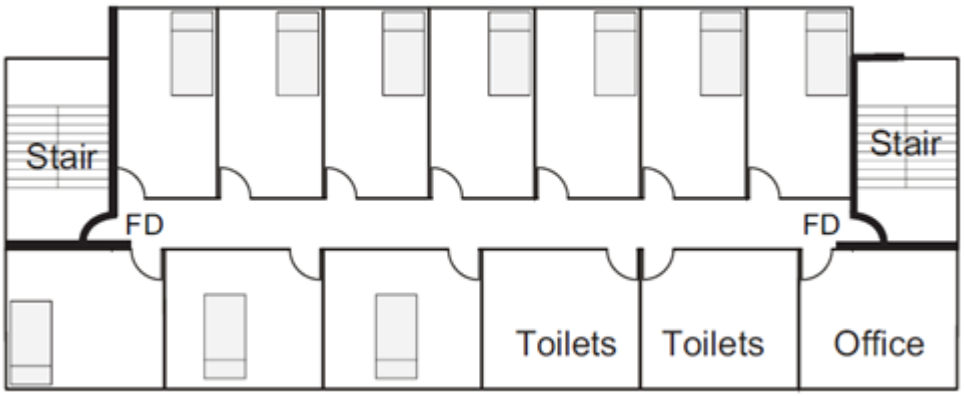

Figure 8 **-** Protection of escape stairs

213. If the enclosure has an external wall that projects beyond the face of a building or is set back in a recess, the route may be vulnerable should fire break through an adjacent window, door or other opening. Radiated heat or flames from the fire may impede escaping occupants. Therefore an external wall of a building which makes an angle less than 135^{o} with the external wall of the enclosure might need to be fire-resisting.

214. The width of an escape stair should be at least the width of any escape route giving access to it. A check should be made that the width of an existing escape stair is suitable for the persons who would use it and the method of evacuation. The number and capacity of stairs serving a building needs to be sufficient for the number of persons to allow the occupants of all storeys to evacuate at the same time.

215. Where part of a building has only one escape route by way of an escape stair, if access to the escape stair is by way of a protected lobby, this will provide an additional barrier to fire and may afford people additional time to escape. A protected lobby is where there are two self-closing fire doors between the adjoining accommodation and the stair.

216. Access to any escape stair which serves a storey at a height of more than 18 m should be by way of a protected lobby.

217. Where an escape stair also serves a basement storey, a self-closing fire door at ground floor level separating the basement stair enclosure from the stair enclosure serving the rest of the building will provide improved protection to the means of escape from any fire that may start in the basement.

218. Ideally, an escape stair (including landings) and the floor of a protected lobby will be non-combustible. Where an existing escape stair is combustible, consider the potential for the stair to be directly affected by fire, such as a fire occurring in an under-stair cupboard, and the possibility of lining the underside of the stair with non-combustible material.

219. A small room, reception, cupboard or toilet may be sited within the enclosure of an escape stair if the fire risk is low and all other parts of the building served by the escape stair have at least one other escape route.

220. The evacuation speed of people with mobility disability can be slow and there may be a space within the protected stair so that they can wait temporarily until it is safe to use the stair – a space capable of accommodating a wheelchair and not less than 700 mm x 1200 mm. These spaces should not be used for storage. Modern buildings may have an emergency voice communication system in the temporary waiting space to assist the escape process and reduce the anxiety of occupants making use of the space.

External stairs

221. An external escape stair may present problems for persons evacuating a building because people can feel less confident using an unenclosed stair at a height. For this reason, an external escape stair may only be suitable where the topmost storey height is not more than 7.5 m; and the stair is used only by those who can safely use it. Appropriate weather protection may be necessary to enable the stair to be used in all weather conditions.

222. An external escape stair should lead directly to a safe area beyond the premises and should be non-combustible.

223. An external escape stair may be unusable if fire occurs in the building. External stairs with a rise more than 1.6 m, may need to be protected against fire from within the building with at least 30 minutes fire-resistance.

Escape across Flat Roofs

224. Where the occupants of premises can safely use it, an escape route may be across a flat roof, and be an alternative additional provision to another escape route.

225. The following criteria apply to an escape route across a flat roof:

- be clearly defined, illuminated and guarded with protective barriers not less than 1.1 m in height
- have a slip free surface
- have fire-resistance for a distance of 3 m on either side of the route
- have no unprotected openings from adjacent structures, within 2 m

Door Fastening

226. It is important that doors necessary for escape be easily openable while the premises are occupied. Where a door across an escape route has to be secured against entry, it should be fitted with a fastening which is readily operated without a key, from the side approached by people making their escape. Where a door is operated by a code, combination, card, biometric data or similar means, it should be capable of being manually overridden from the side approached by people making their escape.

227. Push pad devices (to BS EN 179) are suitable securing devices for outward opening final exit doors where occupants can be expected to be familiar with the devices. In other cases, panic exit devices operated by a horizontal bar (to BS EN 1125), are suitable.

Electrically powered locks

228. Electrically powered locks can be operated by electromagnetic or electromechanical means.

229. Electrically powered locks should not be installed on any door which provides the only route of escape for persons, or which serves a room or storey with more than 60 persons, or a door on a fire-fighting shaft.

230. Electrically powered locks should return to the unlocked position:

- on operation of the fire warning system
- on loss of power
- on actuation of a manual door release unit positioned at the door on the side approached by people making their escape (where the door provides escape in either direction, a unit should be installed on both sides)

231. BS 7273: Part 4 provides detailed guidance on the electrical control arrangements for the fail-safe release of powered locks.

Automatic Opening Doors

232. An internal door may be linked to a motion sensor or other device so that the door opens automatically to facilitate movement of residents. Some devices can be triggered by smoke movement which may cause a door to open precisely at the time when it should be closed as a barrier to fire and smoke. These doors should be linked to the fire warning system so that the automatic opening function is disabled if the fire warning system is triggered (but still permitting the door to be manually opened). If the door is a fire door, the opening mechanism should not reduce the fire resistance of the door. When the automatic opening function is disabled following activation of the fire warning system, the fire door's normal self-closing function should continue to operate.

233. Automatic opening doors should not be placed across exits unless they are designed in accordance with BS 7036 and are either:

- arranged to fail safely to outward opening from any position of opening; or
- are provided with a monitored fail-safe system for opening the door from any position in the event of mains supply failure and also in the event of failure of the opening sensing device; and open automatically from any position in the event of operation of the fire alarm in the fire alarm zone within which the door is situated.

Powered sliding doors

234. Powered sliding doors often open in response to a motion sensor. Such a door across an escape route, should be fail-safe and should open:

- on operation of the fire warning system
- on loss of power
- on activation of a manual door release unit positioned at the door on the side approached by people making their escape (where the door provides escape in either direction, a unit should be installed on both sides).

235. BS 7273: Part 4 contains detailed guidance on the electrical control arrangements for fail-safe operation of powered sliding doors.

Lighting

236. Escape routes should be provided with lighting to allow persons to safely use these routes in the event of a fire occurring or in the event of failure of the normal lighting power supply.

Escape route lighting

237. Premises should be provided with lighting in the escape routes to the extent necessary to ensure that in the event of an outbreak of fire, illumination is provided to assist in escape and to aid staff in implementing the emergency fire action plan.

238. If there are escape routes that are not permanently illuminated, such as external stairs, then a marked switch or some other means of switching on the lighting, such as a motion sensor, should be provided.

Emergency escape lighting

239. Emergency lighting is lighting designed to operate or remain in operation automatically in the event of a local or general power failure. The size and type of the premises and the risk to the occupants will determine whether there is a need for emergency escape lighting.

240. Emergency lighting can be stand-alone dedicated units or incorporated into normal light fittings. Power supplies can be rechargeable batteries integral to each unit or a central battery bank. Single ‘stand-alone’ emergency lighting units may be sufficient in some premises and these can sometimes be combined with exit or directional exit signs, though the level of general illumination should not be significantly reduced by the sign.

241. Emergency lighting is described as ‘maintained’ if it is permanently illuminated, and ‘non-maintained’ when it only operates if the normal lighting fails.

242. A system of automatic emergency lighting is likely to be needed in large premises, particularly in those with extensive occupied basements, or where there are significant numbers of people. If some escape routes are internal and without windows, then some form of emergency lighting may be required. Emergency lighting may be necessary in a room with more than 60 occupants and escape routes serving such a room and escape routes in public access buildings which have two storey exits.

243. An emergency lighting system provided for escape purposes may be used to illuminate the following:

- internal and external escape routes, exit doors and escape route signs
- intersections of corridors
- staircases so that each flight receives adequate light
- changes in floor level
- fire-fighting equipment
- fire alarm call points
- signs
- equipment that needs to be shut down in an emergency

244. New emergency lighting systems should comply with BS 5266: Part 1.

Signs and Notices

245. In small simple premises where the locations of escape routes and fire-fighting equipment are readily apparent then fire signs may not be necessary.

246. Escape route signs are used to indicate escape routes not in normal use and are only necessary where there might otherwise be confusion regarding the route to follow in the event of fire. The following criteria apply to escape route signs:

- they should provide enough information to enable people to identify escape routes
- where the location of an exit is not obvious, signs with directional arrows may be provided along the route
- escape route and exit signs should not be fixed to doors as they may not be visible if the door is open
- signs mounted above doors should be at a height of between 2 m and 2.5 m above the floor
- signs on walls should be mounted between 1.7 m and 2 m above the floor

247. The legibility of an escape sign is determined by the size of the sign, the level of illumination and the distance over which it is viewed. Signs should be in pictogram form. The pictogram can be supplemented by text and/or directional arrows if necessary to make the sign easily understood. Guidance on the use of escape route signs is available in BS 5499: Part 10.

248. Signs to indicate the location of non-automatic fire safety equipment may be necessary if there is any doubt about its location, such as fire extinguishers that are kept in cabinets or in recesses. Other signs may also be necessary such as:

- ‘Fire door keep shut’ or ‘Fire door keep locked shut’ on fire doors
- ‘Automatic fire door – keep clear’
- how to operate the securing devices on doors
- location of sprinkler stop valve

249. New safety signs should comply with BS EN ISO 7010.

250. Notices are used to provide instructions on how to use any fire safety equipment and the actions to take in the event of fire. Notices containing details of the emergency fire action plan specific to the premises should be permanently displayed in appropriate positions throughout the building. A distinction may be required between notices that are designed for visitors, guests or residents as opposed to those for staff. Notices giving full instruction for staff should also be displayed on staff notice boards. Notices for guests and residents should be provided in each bedroom and in common areas, where appropriate, and should include a simple layout plan of the floor level.

251. If premises regularly accommodate people whose first language is not English there may be a need to consider providing instruction in appropriate languages.

Chapter 8: FIRE DETECTION AND WARNING

252. A fire warning system allows occupants to be alerted and the emergency fire action plan to be implemented. It is important that an outbreak of fire in premises with sleeping accommodation should be detected at an early stage so that the occupants are alerted and the emergency fire action plan implemented as soon as possible. The longer a fire continues undetected, the greater the risk to the safety of occupants.

253. Individual flats, and small premises normally comprising of no more than two storeys should be provided with a fire alarm system (designed for dwellings) complying with the recommendations of BS 5839: Part 6 for Grade D Category LD2, comprising interlinked, mains-operated smoke and heat detectors (with battery back-up) connected to either a regularly used local lighting circuit, or to an entirely independent circuit to which no other electrical equipment is connected.

254. Small premises comprising of 3 storeys in height should be provided with a fire alarm system (designed for dwellings) complying with the recommendations of BS 5839: Part 6 for a Grade A Category LD2 system. It should incorporate control and indicating equipment complying with the recommendations of BS EN 54: Part 2 and comprise interlinked, mains-operated smoke and heat detectors (with battery back-up) connected to an entirely independent circuit to which no other electrical equipment is connected.

255. In larger premises, particularly those with more than one floor, an electrical fire warning system should be provided which can be activated by a person using a manual call point and automatically by means of automatic fire detectors. In large or complex premises, particularly those accommodating large numbers of people, a more sophisticated fire alarm system may be required.

256. Other than the domestic type systems described above, a fire detection and warning system designed, installed and maintained in accordance with the guidance in BS 5839: Part 1 for a category L2 system is likely to be appropriate for the majority of other sleeping accommodation premises. A category L2 system is a system designed for the protection of life and which has automatic detectors installed in escape routes and rooms adjoining escape routes.

257. Information on maintenance and testing of fire warning systems is in Chapter 4. Guidance on the design, installation and maintenance of fire detection and warning system is contained in BS 5839: Part 1.

258. Where automatic detection of fire is provided for life safety, the system will be designated as a category L system, within which there are subdivisions L1 to L5.

L5 is a system designed to achieve a specific fire safety objective
L4 is a system which provides warning of smoke within escape routes
L3 is a system designed to give a warning before escape routes are impassable
L2 is a system designed to give warning before escape routes are impassable but with enhanced coverage in specified areas
L1 is a system installed throughout all areas of the building

Call Points

259. Manual call points, often known as ‘break-glass’ call points, enable a person who discovers a fire to operate the fire warning system and immediately raise the alarm to warn other people in the premises. Manual call points are normally positioned at exit doors. They should be conspicuous and positioned no higher than 1.4 m from the floor, but may be reduced to make accessible to wheelchair users. Building occupants should not have to travel more than 45 m to reach the nearest call point.

260. A hinged cover on the call point can be a deterrent where there is the potential for malicious operation or accidental damage. Hinged covers are particularly recommended for the public access parts of buildings.

Automatic Fire Detection

261. The choice of automatic fire detector type depends on the nature of the hazard and the balance between the speed of system response and the need to avoid false alarms. The common types of automatic fire detector are:

- Heat Detectors which operate when a fixed temperature is reached (and may also respond to abnormal rate of rise of temperature). Heat detectors have a good performance in types respect of false alarms but are not appropriate where the detection of smoke is required (such as in escape routes)
- Smoke Detectors which detect the presence of smoke (either ionisation or optical type). They give a speedier response to most fires than heat detectors but have greater potential to generate false alarms. (Smoke detectors within corridors and stairs should be the optical type)
- Combustion Gas Detectors which respond to the gases produced in a fire such as Carbon Monoxide. They can be sensitive to smouldering fires, respond to many fires faster than heat detectors and have a good false alarm performance in the presence of dust, steam and cigarette smoke
- Multi-sensor Detectors contain a combination of heat, smoke or combustion gas detection. These sensors enhance system performance and some types have a low potential for false alarm actuations

Warning

262. Sounders are provided to alert building occupants and should be capable of rousing them from sleep. The type of warning signal and sound level should be appropriate for the premises, the characteristic of the occupants, the fire action plan, and staffing arrangements. Automatic fire detectors with integral sounders may be appropriate for most premises to which this guide applies. Systems that incorporate a sounder base unit in each detector head can provide a more even and tolerable sound level throughout than the peak sound associated with the use of separate point sounders.

263. An appropriate sound level will vary with the nature of the premises, the fire action plan, and staffing arrangements. Although 65 dB(A) is appropriate throughout the building, when persons are asleep on the premises a sound level of 75 dB(A) will be needed at the bed-head in bedrooms.

264. Where there are or may be occupants with hearing impairment to the extent that the fire alarm sounders cannot be perceived, then it will be necessary to consider whether there is a need to provide tactile and/or visual alarm devices for those persons.

265. As an alternative to conventional sounders, a specially designed voice-alarm may be suitable for some premises. Voice alarm systems can provide significant benefits in terms of reduced response time and improved information.

System Information

266. A control and indicating panel provides facility for indication of fire or fault signals and manual controls such as silencing and resetting. Where a control and indicating panel is installed, it should be sited at a location which is appropriate both for staff and for the arriving Fire and Rescue Service.

267. The provision of a suitable fire detection and warning system should be accompanied by suitable staff training and resident awareness so that persons know how to operate the system and how to respond to system operation. A schematic plan should be displayed adjacent to the control panel to allow staff to quickly identify and locate the source of an actuation. If the fire warning system has detection zones, these zones should be shown on a zone plan in a simple and unambiguous way.

268. The building should be divided into detection zones so that the actuation can be located quickly. The allocation of detection zones needs to take into account the layout of the building and should facilitate the emergency fire action plan. Detection zoning should comply with the recommendation in BS 5839-1, and should not be determined purely for the convenience of the system installer.

269. An addressable fire warning system is one where individual detectors and call points can be identified at the control and indicating equipment. Addressable systems are of great advantage in some premises as they reduce the time taken to identify the location of a fire. Where an addressable system is installed, zone indication is also necessary.

270. Certain fire safety equipment is designed so that it operates when the fire warning system operates; examples are:

- automatic release of door hold-open devices
- automatic closure of self-closing doors which are fitted with swing free arms
- automatic opening facility disabled on swing doors with automatic opening
- electronically powered locks on doors returning to the unlocked position
- automatic opening of some exit doors

271. In entertainment areas where the sound pressure level of amplified music exceeds 80 dB(A) then the music should be muted automatically in response to fire alarm actuation.

272. If an automatic life safety fire suppression system is installed, the fire warning should actuate if the suppression system operates.

Remote Monitoring

273. With remote monitoring, the actuation of the fire warning system causes a signal to be transmitted automatically to a remote alarm receiving centre (ARC). On receipt of a signal, the ARC then calls the Fire and Rescue Service.

274. There are standards and third party certification schemes for ARCs. Dutyholders with a system connected to an ARC may wish to assure themselves about the quality of their own arrangements.

Reducing False Alarms

275. False alarms from automatic fire detectors or manual call point activation are a major problem causing disruption to the running of premises and many unwanted calls to the Fire and Rescue Service. If frequent false alarms occur in the premises, members of staff may become complacent and may not respond correctly to a warning in the event of a real fire.

276. A record of system activations should be kept. Each false alarm should be investigated to try to establish the cause. Remedial action may be needed, such as re-positioning a detector head or changing a detector to a different type. A fire warning system should not be disabled, if it is posing a problem, specialist advice should be sought from a competent contractor.

277. Steps can be taken to discourage inappropriate or accidental call point use such as the provision of a protective hinged cover on the call point, with or without a tamper alarm. In cases where there is the potential for objects to collide with a call point, then side impact protection could be provided.

278. Where a call point is sited close to a green box or button for door control, the door control feature should be clearly signed, to avoid unintentional activation of the fire alarm.

279. Where a fire warning system is connected to an ARC, arrangements need to be in place to take the system off-line during tests or for notification of the ARC.

280. In premises that have no management presence, residents and tenants should be encouraged to notify the landlord or managing agent of false alarms that occur so that remedial action can be taken.

Replacement Systems

281. When a fire warning system needs to be replaced due to age or condition or because dutyholders wish to improve reliability or functionality, dutyholders should consider technological advances. A replacement fire warning system should be an addressable system, other than in small or simple layout premises with 10 or less residents and where identification of actuation will be obvious. Dutyholders should also consider the benefit of incorporating multi-sensor detectors as part of a replacement system.

Chapter 9: MEANS FOR FIGHTING FIRE

282. A small fire tackled with fire-fighting equipment in the early stages may be prevented from developing into a fire of life-threatening proportions. Fire-fighting equipment can fall into one of two categories; either (a) it is designed for use by persons, such as portable fire extinguishers or (b) it is a fixed installation, such as a sprinkler system which comes into operation automatically in the event of fire.

Automatic Life Safety Fire Suppression

283. An automatic life safety fire suppression system operates automatically on detection of an outbreak of fire within the building. In the case of a conventional sprinkler system, water is discharged from the individual head which has detected heat from the fire, all other discharge heads remain closed unless similarly affected by heat. An automatic life safety fire suppression system can be effective in controlling a fire and limiting fire growth.

284. Where buildings are fitted with a smoke and heat exhaust ventilation system, sprinklers are usually installed to restrict fire size.

285. Fire suppression should be appropriate to the occupancy and should be determined on the basis of risk. Design and installation rules for automatic life safety sprinkler systems for residential occupancies' are contained in BS 9251.

286. Water mist systems are bespoke systems designed on the basis of established test performance. Design guidance is contained in BS 8458.

287. Many suppression systems are third party certificated which helps to assure their quality.

Fire-fighting Equipment for Use by Persons

288. Portable fire-fighting equipment should be provided in premises for use by persons. There are third party certification schemes for fire-fighting equipment which can give some assurance of quality.

289. The safe use of an appropriate fire extinguisher to control a fire in its early stages can reduce the risk to people in the premises. However, tackling a fire with a portable extinguisher should not be undertaken at the expense of ensuring the Fire and Rescue Service has been called, or the commencement of evacuation.

290. The number of fire extinguishers provided will depend on the circumstances within and the size of individual premises. Portable extinguishers should be simple to operate, readily accessible, within the handling capabilities of staff or the persons who may use them and be suitable for the classes of fire anticipated (see Table 8). Extinguishers are described by their extinguishing capacity. They are marked with a letter and a number: the letter denotes the class of fire, the number denotes the fire size extinguishing capability. An extinguisher could for example have a rating such as '13A' or '55B'.

291. Information on the selection and installation of fire extinguishers is contained in BS 5306: Part 8. A guide to the level of provision of class A extinguishers is obtained by multiplying the floor area of a storey by 0.065. For example, a floor area of 400 m^2 would have a rating of 26A (400 x 0.065 = 26) which is the total value of class A extinguisher and can be achieved by combinations of extinguishers with different ratings to achieve the total value. Where there are other classes of fire, appropriate extinguishers for these may be

necessary. In small premises, having one or two portable fire extinguishers of an appropriate type and readily available for use may be all that is necessary.

292. Fire extinguishers are positioned on escape routes, close to room or storey exits, final exits from the building or, if necessary, adjacent to hazards. They may be placed on a stand or hung on a wall at a convenient height so that they can be easily lifted off. Generally no one should have to travel more than 30 m to reach a fire extinguisher. It is good practice to group extinguishers together in fire points at a similar position on each floor.

293. While permanent hose reels can provide an effective fire-fighting facility when used by trained personnel, there are disadvantages. When deployed, a hose reel may prevent doors from fully closing causing the spread of smoke, and the hose may pose an obstacle to the movement or escape of occupants.

294. A fire blanket may be appropriate. It may be used to smother a small fire involving cooking oil or fat. Where a kitchen provides meals on a scale larger than a normal domestic household, a heavy duty fire blanket may be appropriate.

Table 8 - Extinguisher types

Water Extinguisher · Suitable for Class A fires (fires involving solid materials such as wood, paper or textiles) but not suitable for use on live electrical equipment because water is a conductor of electricity	*Red body*
Water Extinguisher with Additives · Suitable for Class A fires. Some also suitable for Class B fires (fires involving flammable liquids such as petrol, diesel or oils) if so indicated on the extinguisher	*Red body*
Foam Extinguisher · Suitable for Class A or B fires and particularly suited to extinguishing liquid fires. · Should not be used on free-flowing liquid fires unless the operator has been specially trained · Not suitable for deep-fat fryers or chip pans	*Red body with cream label/band*
Powder Extinguisher · Suitable for most classes of fire. · Can be used on fires involving electrical equipment but may damage the equipment · Since powder does not cool a fire appreciably, the fire may re-ignite	*Red body with blue label/band*
Carbon Dioxide (CO2) Extinguisher · Suitable for Class B fires and particularly suitable for fires involving electrical equipment as it is a non-conductor · Since CO2 does not cool a fire appreciably, the fire may re-ignite	*Red body with black label/band*
Wet chemical Extinguisher · Suitable for Class F Fires (fires involving cooking oils such as in deep-fat fryers)	*Red with canary yellow label/band*

Chapter 10: FIRE AND RESCUE SERVICE FACILITIES

295. To comply with building regulations or other legislation, premises may have been provided with facilities, equipment and devices for use by, or protection of, fire-fighters. Fire safety law includes a duty requiring maintenance of such features. Some general information is included below. Current standards for some can be obtained from the Building Regulation Technical Handbooks.

296. The Fire and Rescue Service should be notified of any changes affecting existing facilities for fire-fighters.

Fire and Rescue Service Access

297. Buildings may have been provided with facilities such as access roads and hard standing areas that allow Fire and Rescue Service vehicles to approach and park within a reasonable distance. Vehicle access to the building exterior may enable high reach appliances to be used, and enable pumping appliances to supply water and equipment for fire-fighting and rescue. Table 9 shows access dimensions.

Table 9 **-** Access route for Fire and Rescue Service vehicles

	High reach appliance	**Pumping appliance only**
Minimum width of road between kerbs	3.7 m	3.7 m
Minimum width of gateways etc	3.5 m	3.5 m
Minimum clearance height	4 m	3.7 m
Minimum turning circle between kerbs	26 m	16.8 m
Minimum turning circle between walls	29 m	19.2 m
Minimum axle loading	14 tonnes	14 tonnes

Water Supply for Fire and Rescue Service Use

298. Fire-fighting operations often depend on a sufficient supply of water. External water hydrants provide a water supply for use by the Fire and Rescue Service. Where no adequate piped water supply is available, an alternative supply may have been provided such as a fixed water tank, or access to a spring, river, canal, loch or pond, with suitable access for a Fire and Rescue Service pumping appliance.

Smoke Ventilation

299. Smoke ventilators or outlets may be provided for assisting Fire and Rescue Service personnel with smoke control and clearance. These may be located in basement storeys and stairs, and may be openable windows.

Fire-fighting Shafts and Lifts

300. Fire-fighting shafts are provided in tall buildings to provide fire-fighters with a protected route from the point of building entry to the floor where the fire has occurred and to enable fire-fighting operations to commence. The stairway within the shaft is likely also to be used for normal movement through the building. Entry points from a stairway in a fire-fighting shaft to a floor will be via a protected lobby. Most fire-fighting shafts incorporate a fire-fighting lift which has a back-up electrical supply and car control override.

Dry and Wet Rising Fire Mains

301. The rising fire main is a facility mostly in medium and high rise buildings, for the Fire and Rescue Service. It consists of a pipe running up or through the building, an inlet box where fire-fighters can connect their hose; and outlet valves for the connection of a hose. A dry riser is empty and is charged with water by the Fire and Rescue Service; a wet riser is kept full of water from the mains water supply. Wet rising mains have a facility to allow the Fire and Rescue Service to supplement the water supply.

302. Issues to consider include:

- the approach to allow a Fire and Rescue Service vehicle close to the inlet box
- prohibition of car parking in front of the inlet box
- the inlet box door secured in a way that fire-fighters can readily open the door
- the outlet valves secured in the closed position, usually with a leather strap and padlock, to prevent tampering
- the outlet valves being easily openable

Information Arrangements for Fire-fighters

303. In some buildings, there may be layout plans available for fire-fighters or information on the presence of particular hazards.

Small Bed and Breakfast and Self-catering Premises

The scope of this annex is described in paragraph 5 of the main guidance.

Introduction

1. This guidance is for proprietors of certain small self-catering and bed and breakfast properties who have duties under Part 3 of the 2005 Act. It is designed to help proprietors understand steps that they should be taking to meet their legal obligations.

2. In general, Part 3 of the 2005 Act and the Fire Safety (Scotland) Regulations 2006 seek to ensure the safety of persons (whether residents, visitors, employees or others), in the event of a fire, by setting out the responsibilities of persons for fire safety. Anyone who has control to any extent of the premises will have some responsibilities for ensuring that those occupying the premises are safe from harm caused by fire.

3. This guidance applies only to fire safety law. Additionally, building regulations apply to the construction of new premises or conversions, alterations or extensions to existing premises intended to be used for bed and breakfast or self-catering. If in doubt you should contact your Local Authority building standards department for further advice.

What does the Law require?

4. Fire safety law requires any person who has control of the premises to carry out an assessment to identify risks to the safety of persons in respect of harm caused by fire in the premises. It also requires them to take fire safety measures which are reasonable to ensure the safety of persons.

5. As the owner or operator you are likely to be the best person to know about the risks on your own premises and how they can be controlled. You should therefore be able to carry out the fire safety risk assessment yourself. Guidance on the steps you should take are provided below.

6. The Fire and Rescue Service will not carry out a fire safety risk assessment for you, but will be able to give you information and advice. They may also visit your premises, ask about your fire safety risk assessment and examine the fire safety measures. If they are not satisfied with the steps you have taken, they could take formal enforcement action. As an initial step, however, they are more likely to work with you to help you take appropriate measures to ensure the safety of your guests.

Benchmarks for fire safety

7. The following benchmarks describe fire safety measures to ensure the safety of occupants should a fire occur (step 3 of your fire safety risk assessment). Before you consider these benchmarks, you will want to carry out your fire safety risk assessment and take any practical steps highlighted as a result to reduce or limit the risk of a fire starting. It is for you as the proprietor to judge what practical steps to take in individual circumstances.

8. These benchmarks are generally applicable to typical situations in a well-managed property for which it is not expected that a higher level of fire safety measures will be needed to meet obligations under fire safety law. You may of course voluntarily decide to provide enhanced measures in excess of the legal obligation.

Benchmarks for small Self-catering Property

Fire detection and warning

9. A smoke alarm(s) should be installed in the hall, or for a two-storey property to both ground floor hall and first floor landing, so that there is a smoke alarm within 3 m maximum of each bedroom door and no part of a hall or corridor is further than 7.5 m from an alarm. A smoke alarm should also be installed in each living room and separate dining room and a heat alarm should be installed in the kitchen.

10. Where a property has more than three bedrooms, smoke alarms should also be installed in each bedroom. (In such case, the smoke alarm(s) installed in the hall or corridor need not meet the 3 m requirement).

11. Smoke alarms installed in halls and landings should be of the optical type[11] (although there is no need to replace existing non-optical alarms during their lifespan).

12. Alarms should be installed in accordance with the manufacturer's instructions. Alarms should be powered by either:

    - a long-life tamper-proof lithium battery or equivalent; or
    - mains electricity (with an additional stand-by supply in the form of a battery or capacitor).

13. The smoke alarms should be capable of rousing sleeping occupants therefore alarms should be interlinked so that actuation of one causes actuation of the others. Interlinking may be by wiring or radio signal.

14. You should establish a system which ensures regular testing and maintenance of the alarms.

15. If long-life battery powered systems are used, you should consider installing mains-powered alarms permanently wired to a circuit when the life of the battery is ended, or when repair or redecoration work is being carried out to the property.

[11] An optical smoke alarm is a conventional smoke alarm which utilises a light obscuration principle to detect smoke and is responsive to the type of smoke particles which could enter circulation areas during a fire.

Doors

16. A door between a room (other than a bathroom or toilet) and any corridor, hall or stair which would be the route out in the case of a fire, need not be a fire door[12] but should be capable of holding back smoke and fire for sufficient time to allow occupants to escape. An example of a suitable door type is a solid timber door.

17. The following check list will help you decide if you need to repair, adjust or replace any door:

    - the door should be close fitting to its frame with gaps of no more than 4 mm
    - the door should have no sizeable splits, gaps or cracks and should not be warped
    - non-fire-rated glazing may fail early in a fire
    - hollow type doors offer poor protection

18. For a two-storey property with sleeping accommodation on the upper floor, it is important that if a fire occurs in a ground floor room off the escape route while persons are asleep, the door of the room on fire remains closed. Where there are more than three bedrooms on the upper floor of a two-storey property, these ground floor doors should be provided with self-closing devices[13].

19. Occupiers should be advised of the benefit of keeping doors closed at night to hold back fire and smoke.

20. Doors will only be effective at holding back fire and smoke if the corridor or hall structure also has the ability to hold back fire.

Exit door locks

21. Although there may be a key operated lock on the door, to facilitate escape from fire the final exit door should be capable of being easily opened from the inside without the use of a key, although it remains the personal choice of the occupiers how to secure the door.

Lighting

22. If a fire disrupts the normal lighting there should be sufficient illumination for occupants to find their way out of the property. Where an escape route does not receive adequate illumination from a street light or other external source, alternative lighting should be provided. This could be through ensuring that the hall and landing (if applicable) have one or more automatic plug-in night lights of a type which continue to operate if the mains electricity fails.

23. Where additional lighting is provided, you should establish a system which ensures that the plug-in light or other lighting is present and in working order at the commencement of each let.

Fire-fighting equipment

24. A fire blanket should be provided in the kitchen for the occupants to use.

[12] A fire door is a door assembly which is rated by its fire-resistance performance under test conditions.

[13] There are various types of self-closing device available, including concealed, which may be suitable.

Emergency fire action plan

25. You should prepare a plan of what action any occupier should take in the event of fire. This would include the route of escape, how to raise the alarm and how to call the Fire Service. This should be available for each party arriving at the premises. A simple notice could be fixed in an easily visible place such as the hall, and/or be provided within a welcome pack. You should also ensure that the occupier is advised of basic precautions such as closing doors at night to inhibit the spread of smoke, and the need to inform the owner or agent if any equipment develops a fault (such as electrical or smoke alarm defects).

Benchmarks for Small Bed and Breakfast Property

Fire detection and warning

26. For a single storey property, a smoke alarm(s) should be installed in the hall or corridor, sited so that no part of a hall or corridor is further than 7.5 m from a smoke alarm and no bedroom door is further than 3 m from a smoke alarm. A smoke alarm should also be installed in all living rooms and separate dining rooms and a heat alarm should be installed in the kitchen.

27. For a two-storey property, a smoke alarm(s) should be installed in both the ground floor hall and first floor landing sited so that no part of a hall or corridor is further than 7.5 m from a smoke alarm and no bedroom door is further than 3 m from a smoke alarm. A smoke alarm should also be installed in all living rooms and separate dining rooms and in any ground floor bedroom which has a door to the hall, corridor or stair. A heat alarm should be installed in the kitchen.

28. In all cases where there are more than three guest bedrooms, smoke alarms should also be installed in each bedroom. (In such cases, the smoke alarm(s) in the hall or corridor need not meet the 3 m requirement).

29. Alarms should be installed in accordance with the manufacturer's instructions.

30. Smoke alarms installed in halls and landings should be of the optical type[14] (although there is no need to replace existing non-optical alarms during their lifetime).

31. Alarms should be powered by either:

- a long-life tamper-proof lithium battery or equivalent; or
- mains electricity (with an additional stand-by supply in the form of a battery or capacitor).

32. The smoke alarms should be capable of rousing sleeping occupants (including the proprietor) therefore alarms should be interlinked so that actuation of one causes actuation of the others. Interlinking may be by wiring or radio signal.

33. You should establish a system which ensures regular testing and maintenance of the alarms.

[14] An optical smoke alarm is a conventional smoke alarm which utilises a light obscuration principle to detect smoke and is responsive to the type of smoke particles which could enter circulation areas during a fire.

34. If long-life battery powered systems are used you should consider installing mains-powered alarms permanently wired to a circuit when the lifetime of the battery is ended or when repair or redecoration work is being carried out to the property.

Doors

35. A door between a room (other than a bathroom or toilet) and a corridor, hall or stair which would be the route out in the case of a fire need not be a fire door[15] but should be capable of holding back smoke and fire for sufficient time to allow the occupants to escape.

36. The following check list will help you decide if you need to repair, adjust or replace any door:

- the door should be close fitting to its frame with gaps of no more than 4 mm
- the door should have no sizeable splits, gaps or cracks and should not be warped
- non-fire-rated glazing may fail early in a fire
- hollow type doors offer poor protection

37. For a two-storey property with sleeping accommodation on the upper floor, it is important that if a fire occurs in a ground floor room off the escape route while persons are asleep, the door of the room on fire remains closed. Such doors on the ground floor should therefore be provided with self-closing devices[16].

38. Doors will only be effective at holding back fire and smoke if the corridor or hall structure also has the ability to hold back fire.

Exit door locks

39. To facilitate escape from fire the exit door should only be secured with a lock or fastening which can be readily opened from the inside, without the use of a key, while the premises are occupied.

Lighting

40. If a fire disrupts the normal lighting there should be sufficient illumination for occupants to find their way out of the property. Where an escape route does not receive adequate illumination from a street light or other external source, alternative lighting should be provided. This could be through ensuring that in the hall and landing (if applicable) you have one or more automatic plug-in night lights of a type which continue to operate if the mains electricity fails.

41. Where additional lighting is provided, you should establish a system which ensures that the plug-in light or other lighting is present and in working order.

Fire-fighting equipment

42. A fire blanket should be provided in the kitchen for the operator to use. A dry powder fire extinguisher to the kitchen is also recommended.

Emergency fire action plan

[15] A fire door is a door assembly which is rated by its fire-resistance performance under test conditions.

[16] There are various types of self-closing device available, including concealed, which may be suitable.

43. You should prepare a plan of what action you will take in the event of fire including raising the alarm, ensuring all guests are evacuated and calling the Fire Service. A simple notice should be displayed in a prominent place in each bedroom, so that the guests know what to do in the event of fire. You may also wish to give them any further advice, such as the regular emptying of ash trays (if smoking is permitted) and the use of their own portable electrical equipment, when they arrive.

44. You should regularly carry out a rehearsal 'fire drill' when no guests are present to ensure that everyone is aware of their role in a fire.

How to carry out a Fire Safety Risk Assessment

45. The steps below are intended to help you through the process of carrying out an assessment of the fire risks in your property.

Step 1: Who is at risk?

Consider the numbers and capability of people who may occupy your property and who could be at a risk. This includes guests, owners, any other visitors including cleaners, tradespersons etc. Make a note if particularly vulnerable persons are likely such as children, elderly, or disabled persons (you will need to consider the fire safety of guests with any special needs or vulnerabilities).

Step 2: What potential causes of fire are there?

Think about how a fire could start on your premises and identify sources of ignition such as cooking, heaters, open fires and smoking. Do family members smoke? Are there designated bedrooms where guests are permitted to smoke? Where are electrical appliances such as tumble dryers and TVs? What is the likelihood of a deliberate fire?

Consider what could burn and act as fuel for a fire. This could include furniture, bedding, laundry, wood / kindling for open fires, rubbish, flammable liquids, solvents, chemicals or gases, cooking oil, paint, white spirit, cleaning products, aerosols, LPG, or fuels such as petrol.

Step 3 Evaluate the risk

Consider what could happen if a fire occurred and how quickly it could spread. The construction of the property can affect how fire can spread, it may spread faster if there are multiple layers of wallpaper, polystyrene ceiling tiles or interior wood paneling. If rubbish stored outside caught fire could it spread to inside the property or block an exit door?

Step 4: What can you do to reduce/remove risk, what fire safety measures should be put in place?

Now that you have considered the people at risk and the potential for a fire to occur, you can take steps as necessary to reduce the risk both of a fire occurring and of injury or loss of life should a fire occur. You may also wish to consider the risk of damage to your property, and any subsequent loss of business.

If ignition sources and fuel sources are reduced and these are kept apart, the chances of a fire starting are low. The following lists some of the actions that are advised for dwellings as part of normal community fire safety which you should consider to reduce the risk of a fire occurring:

- Ensure good housekeeping, so that storage is in designated areas only, is orderly, refuse and packaging is disposed of frequently and carefully, bins are secure
- Ensure flammable materials and liquids are stored properly, away from ignition sources, electrical fuse box and meter, boilers etc. Do not store aerosols in damp areas (such as under sinks)
- Avoid the use of portable gas heaters, use only in an emergency when only butane should be used
- Ensure that electrical and gas appliances and equipment are maintained, serviced and kept in good working order. Clean extract equipment to kitchens
- Replace any chip pan with a deep fat fryer with a thermostat
- Individual heating appliances should be fixed in position and guarded
- Ensure the electrical installation to the property is in good order, get it checked if in any doubt. Ensure correct wiring of plugs and correct fuse ratings
- If anyone smokes ensure ashtrays are provided, emptied regularly and safely. Inspect or advise your guests to inspect smoking areas before bedtime
- Keep halls, corridors and stairs which would be used to escape from a fire clear and hazard free and advise guests to do this also. In particular keep clear of items which can burn, or are a source of ignition such as electrical equipment, coat racks, refuse, laundry, upholstered furniture, portable heaters or gas cylinders
- If your property is in an area where vandalism or deliberate fires can be a problem, consider security measures to prevent entrance to the grounds of the property and access to refuse storage and storage of any flammable liquids/gases

You should then consider what further safety measures are necessary to reduce the risk of injury or loss of life should a fire occur in your premises, for example:

- means for detecting and effectively warning occupants of a fire which occurs in any part of the premises
- means to restrict the spread of fire and smoke from the source to other areas especially the escape route
- means of escape which are easy to use at any time by persons who are not familiar with the premises, for example guests who have recently arrived
- means for fighting a small fire such as a fire in a waste bin or in a cooking pan

Guidance on what is expected in these areas is provided in the section: 'Benchmarks for Fire Safety'

Step 5: Formulate a plan

You should draw up a plan for implementation of any improvements you need to make with your priorities and timescales.

Step 6: Record: It is a good idea to keep a written record of your fire safety risk assessment. This will make it easier for you to review your assessment and it will also be easier to demonstrate that you have carried out an assessment. You should also record the arrangements for reviewing your fire safety risk assessment, your emergency fire action plan and the maintenance arrangements for fire safety measures.

Step 7: Review: You need to regularly review your fire safety risk assessment. Is there anything that has altered the risk and means you need to consider again the fire safety measures you have in place? For example are you doing building work, maintenance or decorative work? Do you have a different range of guests such as elderly or disabled?

Holiday Camping and Caravan Sites

Spacing

1. Subject to the variations listed below, the distance between any two tents or caravans should generally be not less than 6 m.

2. A reduced distance between units may apply where caravan construction is inherently fire-resistant. Under such circumstances, the distance between caravans may be reduced to 5 m or, where the site is laid out in a “chessboard” pattern and the unit construction provides a degree of inherent fire-resistance, the distance may be reduced, from 4.5 m to 3.5 m between the closest corners of the units. Where there is a mix of fire-resistant and non fire-resistant construction, the larger separation distances apply.

3. The distance from any part of the tent or caravan to any site road should be not less than 2 m, and not less than 3 m from any site boundary.

4. Variations of spacing requirements (Measurement is taken from the exterior cladding, excluding any tow bar):

    - Porches may protrude 1 m into the 6 m and should be open type construction
    - Where awnings are used, the distance between any part of the awning and an adjoining caravan should be not less than 3 m. They should not incorporate sleeping accommodation and should not face each other or touch
    - Eaves, drainpipes and bay windows may extend into the 6 m space provided the total distance between the extremities of two adjacent units is not less than 5.25 m
    - If there are ramps for disabled persons, verandas or stairs extending from the unit, there should be 4.5 m clear space between them and two such items should not face each other in any space. If they are enclosed, they should normally be considered as part of the unit and, as such, should not intrude at all into the 6 m space
    - A garage, shed or covered space should be permitted between units only if of non-combustible construction and enough space is maintained around each unit so not to prejudice means of escape in case of fire. Any windows in such structures should not face towards the units on either side. Car ports and covered walkways should not be allowed within the 6 m space.

Car parking

5. One car only should be permitted to park between adjoining units subject to the entrance to the unit not being obstructed. Plastic or wooden boats should not be kept between units.

6. A car parking area providing parking for more than 10 cars should be at least 18 m from any part of a unit. For a car parking area for 10 cars or fewer, this should be at least 10 m.

Fire prevention

7. To avoid the potential for a fire in combustible waste materials, purpose designed containers should be used and regular removal of waste should take place.

8. Grass and other vegetation should be cut at frequent intervals to prevent fire.

9. Spaces below caravans should not be used for combustible materials storage.

10. General guidance on the use and storage of liquefied petroleum gas (LPG) can be found in Chapter 5.

11. Open fires should be prohibited on site.

12. The use of barbecue facilities should be controlled and ideally restricted to purpose designed areas within the site, and remote from units.

Fire points

13. Fire points should be established so that no unit or site building is more than 30 m from a fire point. Fire points should be housed in a weather proof structure easily accessible, and conspicuously marked “FIRE POINT”.

14. If there is a water supply of sufficient pressure and flow to project a jet of water about 6 m from the nozzle, and with a flow of at least 30 litres/minute, water standpipes should be provided at each fire point along with a reel that complies with British Standard 5306: Part 1, with a hose not less than 30 m long, connected to the water standpipe and terminating in a small hand control nozzle. Hoses should be housed in a red box marked “HOSE REEL”.

15. If standpipes are not provided, or the water pressure or flow is not sufficient, each fire point should be provided with two 9 litre water extinguishers. It may also be appropriate for specialized extinguishers, such as carbon dioxide extinguishers, to be provided at appropriate locations.

Fire warning

16. A means of raising an alarm of fire on the site should be provided at each fire point. This could be a battery or mains powered alarm or a manually operated sounder such as a gong or siren. Smoke alarms should be installed in each unit. A means of calling the Fire and Rescue Service, should be available on the site.

Fire notices and fire procedures

17. A conspicuous notice should be provided at each fire point to indicate the action to be taken in the event of fire. Persons resident on the site, for whatever period, should be made aware of site fire procedure and the emergency action plan on first arrival at the site. Where necessary, residents should be provided with a reminder as considered necessary.

British Standards British Standards Institution (www.bsi-global.com)

EN 179 Building hardware. Emergency exit devices operated by a lever handle or push pad. Requirements and test methods

EN 1125: Building hardware. Panic exit devices operated by a horizontal bar. Requirements and test methods

EN 1154: Building hardware. Controlled door closing devices. Requirements and test methods

EN 1155: Building hardware. Electrically powered hold open devices for swing doors. Requirements and test methods

EN 1634: Part 1: Fire-resistance tests for door and shutter assemblies. Fire doors and shutters

EN ISO 7010 graphical symbols – safety colours and safety signs - registered safety signs

476: Part 22: Fire tests on building materials and structures. Methods for determination of the fire-resistance of non-loadbearing elements of construction

5266: Part 1: Emergency lighting. Code of practice

5266: Part 7: (BS EN 1838:) Lighting applications. Emergency lighting

5266: Part 8: Emergency escape lighting systems (BS EN 50172: 2004).

5306: Part 8: Fire extinguishing installations and equipment on premises. Selection and installation of portable fire extinguishers. Code of practice

5499: Part 4: Safety signs, including fire safety signs. Code of practice for escape route signing

5839: Part 1: Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises

5839: Part 3: Fire detection and alarm systems for buildings. Specification for automatic release mechanisms for certain fire protection equipment

5839: Part 8: Fire detection and fire alarm systems for buildings. Code of practice for the design, installation, commissioning, and maintenance of voice alarm systems

5852: Methods of test for assessment of ignitability of upholstered seating by smouldering and flaming ignition sources

7036: Code of practice for safety at powered doors for pedestrian use

7273: Part 4: Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors

7671: Requirements for Electrical Installations

9251: Sprinkler systems for residential and domestic occupancies

9999: Code of practice for fire safety in the design, management and use of buildings.

8458:2015 Fixed fire protection systems. Residential and domestic watermist systems. Code of practice for design and installation

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