

# **Strengthening Fire Safety for High Rise Domestic Buildings Consultation**

**on**

**Guidance for those responsible for  
Fire Safety in High Rise Domestic Buildings**

**and**

**Information for people who live  
in High Rise Domestic Buildings**

**April 2019**



**Scottish Government**  
Riaghaltas na h-Alba  
gov.scot

# Ministerial Foreword

The fire safety of our buildings is crucial, especially when they are people's homes.

We can all play a role by our behaviour, in contributing to preventing fires alongside the Scottish Fire and Rescue Service and others. This consultation is on proposed actions to strengthen fire safety of high rise domestic buildings, including making it straightforward for people living in, and those responsible for high rise domestic buildings, to keep them safe.



I encourage you to take this opportunity to give us your views and ensure that information and guidance is relevant, accessible and will work in practice.

This is part of the Scottish Government response following the tragic fire at Grenfell Tower in June 2017. Our Ministerial Working Group was swiftly established and it has agreed number of actions for improving building and fire safety in Scotland's high rise domestic buildings. You can find more information on the work of the Ministerial Working Group [here](#).

A core part of the work of the Ministerial Working Group was a Review of the Fire Safety Regime in Scotland for High Rise Domestic Buildings. A report was published following this review which can be accessed [here](#).

The Review focused on ensuring the fire safety regime and regulatory framework provides effective, comprehensive protection. It identified that there are no major gaps in Scottish legislation, but made recommendations where improvements could be made to support and clarify existing guidance and legislation. The Ministerial Working Group agreed the Review Recommendations that involve: producing straightforward Fire Safety information for people living in high rise buildings; Fire Safety guidance and Fire Risk Assessments for those responsible for buildings; and improving fire safety in common areas. A further Recommendation is for the introduction of fire safety guidance in specialised housing and we expect to consult on this later in the year.

I encourage you to get involved and welcome your views, thoughts and ideas.

**Ash Denham MSP**  
**Minister for Community Safety**

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# Introduction

## What is this consultation about?

The Scottish Government is gathering information and views on proposed actions to strengthen **fire safety for people who live in high rise domestic buildings**. We will use the responses to improve and refine the proposed actions on strengthening fire safety in high rise domestic buildings. The responses will also inform how these actions should best be implemented to ensure their effectiveness.

The proposed actions are aimed at delivering the five recommendations from the ***Review of the Fire Safety Regime for High Rise Domestic Buildings in Scotland***. These were agreed by the Scottish Government Ministerial Working Group on Building and Fire Safety that was set up following the tragic fire at Grenfell Tower. There is separate work underway regarding the sixth recommendation to produce fire safety guidance for specialised housing.

## Why High Rise Domestic Buildings?

The Ministerial Working Group on Building and Fire Safety focused on high rise domestic buildings following the Grenfell Tower fire in London.

## What is a High Rise Domestic Building?

A high rise domestic building is a domestic building with any storey at a height of more than 18 metres above the ground – generally more than 6 storeys.

The Guidance in Part 3 of this consultation is not applicable to buildings above 60 m – roughly 20 floors. Specialist advice should be sought for buildings of this height. We are still interested in hearing views from people who live in, or are responsible for, buildings of this size.

## Who is this consultation for?

Everyone who lives in, or is responsible for fire safety in high rise domestic buildings is encouraged to respond to the consultation. This includes:

- Those who live in high rise domestic buildings.
- Building Owners.
- Managers.
- Property Factors.
- Property Advisors.
- People with responsibility for Fire Safety.
- Anyone else with views and ideas.

Not everything in the consultation will be relevant to you – please feel free to skip sections or questions that you do not want to answer.

## What is in this consultation?

This consultation has three parts. The findings will be used to inform the proposed actions to strengthen fire safety in high rise domestic buildings and their implementation.

### **Part 1 - Fire Safety Information for People Who Live in High Rise Domestic Buildings**

We will develop fire safety information for people who live in high rise domestic buildings. This clarifies and refreshes existing guidance. An example of the type of information is in the Introduction to this part of the consultation. We want to know what information and the best ways to get it to people who live in high rise domestic buildings. Questions on this are in Part 1 of the consultation.

### **Part 2 - Fire Safety Campaign relative to Common Areas**

Items left in common areas can be a fire risk and may block escape from, and access to, a high rise domestic building. A campaign will raise awareness of these issues and encourage people to adopt responsible behaviours to reduce risks. We are gathering views on approaches for this campaign. Questions on this are in Part 2 of the consultation.

### **Part 3 - Fire Safety in Existing High Rise Domestic Buildings Guidance, including Fire Risk Assessment**

This Guidance is aimed at those with formal responsibilities for fire safety in high rise domestic buildings - people that own, factor, manage, give advice on and enforce standards. It provides advice on how to prevent fires and limit the effects of fires that do happen. It includes information on why and how to do a fire risk assessment and includes a model template. Questions on this are in Part 3 of the consultation.

## Background Information

The Scottish Government established the Ministerial Working Group on Building and Fire Safety following the tragic fire at Grenfell Tower in June 2017. This set up the Review of the Fire Safety Regime in Scotland for High Rise Domestic Buildings (the Review) to focus on the fire safety regime and regulatory framework. The Review report can be found at: <https://www.gov.scot/publications/scottish-fire-safety-regime-final-review/>.

The Review identified that there are no major gaps in Scottish legislation. It did highlight some areas where improvements could be made to support and clarify existing guidance and legislation and made the following six Recommendations. These are short term actions to be taken to improve fire safety. Consideration of longer term solutions will continue as these short term actions are implemented and monitored:

Review of the Fire Safety Regime in Scotland for High Rise Domestic Buildings  
Recommendations:

- 1. Specific Fire Safety Guidance aimed at all residents of high rise domestic buildings.*
- 2. Introduction of Scottish Guidance concerning "Fire Safety in purpose-built block of flats".*

3. *Introduction of Scottish Guidance concerning Fire Risk Assessments.*
4. *A consistent position regarding the storage, removal and enforced prohibition of combustible materials in common areas to be devised and agreed by all relevant stakeholders.*
5. *A Fire Safety campaign relative to common areas.*
6. *Introduction of Scottish guidance concerning “Fire Safety in specialised housing”.*

In this consultation we are seeking views on the proposed actions to implement Recommendations 1, 2, 3, 4 and 5. A Short Life Working Group has also been established for Recommendation 4, *a consistent approach to dealing with combustibles in common areas*. There is separate work on Recommendation 6 to produce guidance concerning Fire Safety in Specialised Housing.

### How do I get involved?

To give us your views, please click here ([‘Begin Consultation’](#) Link will be in on-line version). This consultation closes 17 July 2019. You can submit a response any time before the closing date.

We would like to hear experiences and views, both positive and negative, so that we can ensure that the actions we take are as effective as possible.

### Am I restricted to answering the questions in the consultation?

No, there are free text boxes in the consultation document which allow you to tell us anything that you believe is important.

### What is meant by “Stay put” and Common Areas

<b>Stay Put</b>	The “Stay Put” strategy is normally used in high rise domestic buildings. It means when a fire occurs inside a flat, the occupants of that flat need to escape. People can safely remain in other flats unless directly affected by heat and smoke or directed to leave by the Scottish Fire and Rescue Service. This does not prevent occupiers, who are aware of a fire in the building but not affected directly by it, from deciding to evacuate.
<b>Common Areas</b>	Those parts of a high rise domestic building generally used by occupants of more than one flat for entry and exit.

# Part 1: Fire Safety Information for People who live in High Rise Domestic Buildings

In this section we are looking to gather views on the main fire safety messages and ways to communicate fire safety information to people living in high rise domestic buildings. Our aim is to provide fire safety information that is easy to understand and get hold of. Information can be in leaflets, on a website or in short videos or other useful places.

Please read the **example** of Fire Safety Information for people who live in domestic high buildings below and then answer the questions

In addition to the consultation, we plan to hold engagement events with some people that live in high rise domestic buildings to develop effective, accessible advice and information. You can register your interest in taking part in an event by emailing: [FireSafetyConsultation2019@gov.scot](mailto:FireSafetyConsultation2019@gov.scot) or calling: 0131 24 40896

## **Fire Safety Information for people who live in domestic high rise buildings – Example**

*Working smoke and heat alarms will protect your home and family from fire. These alarms can provide an early warning of a fire and allow you to make your escape – but only if they are working. You are more likely to die in a fire if you do not have working smoke and heat alarms.*

*Under new guidance from the Scottish Government (amendment to the Housing (Scotland) Act 1987), by February 2021 your property is required to have the following level of detection:*

- *at least one smoke alarm installed in the room most frequently used for general daytime living purposes,*
- *at least one smoke alarm in every circulation space on each storey, such as hallways and landings,*
- *at least one heat alarm installed in every kitchen,*
- *all alarms should be ceiling mounted, and all alarms should be interlinked.*

*You can prevent fire from happening by taking a few simple steps:*

- *don't leave cooking unattended, and avoid leaving children in the kitchen alone with cooking on the hob*
- *be vigilant when cooking with oil -don't overfill chip pans and never throw water on a chip pan fire*

- *take extra care when drinking alcohol -don't cook, and if you feel sleepy don't smoke in your chair, go outside*
- *make sure cigarettes are put out properly - use an ashtray - don't smoke in bed*
- *don't overload electrical sockets*
- *turn off appliances when not in use - don't leave them on standby*
- *keep matches and lighters out of reach and sight of children*
- *avoid the use of candles - if you must use them, make sure candles are secured in a holder and away from materials that may catch fire, like curtains - children must never be left alone with lit candles*

*Keep safe and plan your escape*

*Your flat is in a building designed to be fire-resisting, the flat entry door has fire-resistance and is fitted with a self-closing device. It is important that the self-closer works correctly. A fire should not spread from one flat to another.*

*You need not leave your home if there is a fire elsewhere in the building. Though, if in doubt, get out.*

*Always leave your flat if it is affected by smoke or heat or if told to by the Fire Service. Your stairway is designed to be safe for escape throughout the course of a fire. Always use the stairway to descend to ground level if escaping, do not use the lift.*

*If you are in a corridor, lift lobby or stairway and you notice a fire, leave the building immediately and, if safe to do so, alert other residents in the immediate vicinity on your way out (knock on their doors). And call the Fire Service on 999.*

*Do not put yourself at risk - do not return to your flat until it is safe to do so*

*Do not leave your belongings or rubbish in corridors, the lift lobby or the stairway  
This could affect you and your neighbours if there was a fire.*

*Remember:*

- *test your smoke alarms and heat alarms once a week*
- *keep the exit route from your flat clear so you can escape in an emergency*
- *close doors at night, especially the doors to the lounge and kitchen to prevent fire spreading*
- *Plan your escape now - be prepared and don't wait until it happens.*

## Part 1 Consultation Questions

### Fire Safety Information for people who Live in High rise domestic buildings

#### Communication of Advice and Information

We are keen to ensure that people that live in high rise domestic buildings know that there is fire safety information available to them and can easily find it when they want it.

- Please indicate from 1 to 5 what would be your most and least preferred way to get fire safety information.

1 Most Preferred – 5 Least Preferred	1	2	3	4	5
Printed Leaflet 					
Written Information on a Website 					
Video/Animation on a website 					
Notice Board/Poster in the building 					
Mobile device app 					

Other / please provide any comments in the box below.

The following questions are about the **example** of Fire Safety Information given earlier.

- Does the fire safety information provide good advice on how to stop fires from happening?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

3. Does the fire safety information provide good advice on what to do if a fire starts?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

4. Does the fire safety information help you to understand the reasons behind fire safety advice?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

5. Is the fire safety information easy to understand?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

6. Does your high rise domestic building have a way people can raise concerns about fire safety?

Yes  (if yes go to **Question 7**) No  Don't know

Please select only one answer and provide any comments in the box below.

If you answered **No** or **Don't Know** to **Question 6**, please go to **Question 8**.

7. If you answered yes to **Question 6**; does the process work?

Yes  No  Don't know

Please select only one answer and provide any comments in the box below.

8. Please let us know if you think there is any other useful fire safety advice and information that could be included for people who live in high rise domestic buildings.

9. Do you think more information on the 'stay put' policy (this is explained on page 5) would be helpful?

Yes       No       In part

Please select only one answer and provide any comments in the box below.

10. Please provide any further comments on the information and advice in this section of the consultation in the box below.

## Part 2 Fire safety campaign regarding common areas

In this section of the consultation we are looking to gather information to help develop a fire safety campaign about common areas in high rise domestic buildings. This campaign will seek to raise awareness on the fire risks associated with any items that might be left in common areas; this includes items that may block your access to and exit from the building, not just those items that will burn.

Common areas are generally areas of a building that are not only for use by individual residents (e.g. common corridors, stairways, plant rooms, other ancillary areas, bin stores).

11. Would having clearer information on the dangers of leaving items that will burn in common areas, encourage people not to do this?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

12. Would images to highlight the damage caused by fires started in common areas be helpful to encourage people not to leave items that will burn in those areas?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

13. Please let us know if you have any further comments about the fire safety campaign regarding common areas in high rise domestic buildings.

14. If you live in a high rise domestic building, is there a process in place for the assessment and removal of items left in common areas?

Yes  (if yes go to **Question 15**) No  Don't know

Please select only one answer and provide any comments in the box below.

If you answered **No** or **Don't Know** to **Question 14**, please go to **Question 16**.

15.If you answered yes to question 14; does the process work?

Yes  No  Don't know

Please select only one answer and provide any comments in the box below.

### Communication of campaign

16.What is the best way to get information on keeping common areas safe from fire?

Please indicate from 1 to 5 what would be your most and least preferred.

1 Most Preferred – 5 Least Preferred	1	2	3	4	5
Email					
Printed Leaflet by post 					
SFRS home fire safety visits 					
Video/Animation on a website 					
Notice Board/Poster in the Building 					
Printed information from owner/landlord when first moving in 					
Via local residents group meetings 					

Other / please provide and comments on how you prefer to get information below.

# Part 3 Fire Safety in Existing High Rise Domestic Buildings

We would very much like your thoughts and comments on the draft **Fire Safety in Existing High Rise Domestic Buildings Guidance** (the Guidance) which can be found at Annex 1. The Guidance is intended to provide consistent, easily accessible fire safety guidance for high rise domestic buildings. At present, the Guidance is 'good practice' advice and not a legal requirement. However, we will consider making it a legal requirement if further support is needed. This will be done in part by monitoring and evaluating the implementation and effectiveness of the Guidance.

## Who is this for?

The Guidance can help everyone to be clear on what is needed for fire safety in high rise domestic buildings in Scotland. This includes high rise buildings that are council, housing association or privately owned. It is primarily to be used by people that own, factor, manage, give advice on and enforce standards in high rise domestic buildings.

Please read the Fire Safety Guidance (Annex 1) before answering the questions in this section. They ask about the Purpose, Clarity and Implementation of the Guidance. The findings will improve the Guidance and inform implementation.

## Chapter 1: Guidance on Fire Safety in High Rise Domestic Buildings

### Please answer for Chapter 1 in the Guidance

17. Is it clear that the Guidance is aimed at those that own, factor, manage, give advice on and enforce standards in high rise domestic buildings?

Yes       No       In part

Please select only one answer and provide any comments in the box below.

18. Is the purpose of the Guidance clear for those expected to use it?

Yes       No       In part

Please select only one answer and provide any comments in the box below.

19. Is it clear how the Guidance should be used in practice?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

20. Is there further information that should be included?

Yes  No

Please select only one answer and let us know of any further information that should be included and why in the below box.

21. Please provide any further comments on this chapter in the box below.

## Chapter 2: Fire safety design in high rise domestic buildings

### Please answer for Chapter 2 in the Guidance

22. Do you think the Fire Safety measures are clearly explained in the Guidance to those that own, factor, manage, give advice on and enforce standards in high rise domestic buildings?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

23. Do you think there is further information that should be included?

Yes  No

Please select only one answer and let us know of any further information that should be included and why in the below box.

24. Please provide any further comments on this chapter in the box below.

### Chapter 3: Risk management – assessing the risk to persons

Please answer for Chapter 3 in the Guidance

25. Do you think the **reasons** for carrying out a Fire Risk Assessment in high rise domestic buildings are clearly explained?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

26. Do you think **how to** carry out a Fire Risk Assessment in high rise domestic buildings is clearly explained in the 7 step methodology for assessing fire risk in the Guidance?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

27. Do you think there is other information that should be included?

Yes  No

Please select only one answer and let us know of any further information that should be included and why in the below box.

28. If you own, factor, manage, give advice on and enforce standards in high rise domestic buildings: is there a process in place for the assessment and removal of items left in common areas?

Yes  (if yes please answer **Question 29**) No  Don't know

Not relevant to me

Please select only one answer and provide any comments in the box below.

If you answered **no**, **Don't Know** or **Not relevant** to **Question 28**, please go to **Question 30**.

29. If you answered yes to question 28: do you have confidence that the process works in practice?

Yes  No  Don't know

Please select only one answer and provide any comments in the box below.

30. Please provide any further comments on this chapter in the box below.

### **Chapter 4: Risk management – preventing fires**

**Please answer for Chapter 4 in the Guidance**

31. Do you think it is clearly explained how to prevent the impact of fires in high rise domestic buildings?

Yes       No       In part

Please select only one answer and provide any comments in the box below.

32. Do you think it is clearly explained how to reduce the impact of fires in high rise domestic buildings?

Yes       No       In part

Please select only one answer and provide any comments in the box below.

33. Do you think there is further information that should be included?

Yes       No

Please select only one answer and let us know of any further information that should be included and why in the below box.

34. Please provide any further comments on this chapter in the box below.

### **Chapter 5: Risk management – physical fire safety measures**

**Please answer for Chapter 5 in the Guidance**

35. Do you think the physical fire safety measures in high rise domestic buildings are clearly explained?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

36. Do you think there is further information that should be included?

Yes  No

Please select only one answer and let us know of any further information that should be included and why in the below box.

37. Please provide any further comments on this chapter in the box below.

## Chapter 6: Risk management – ongoing control

**Please answer for Chapter 6 in the Guidance**

38. Do you think there is further information that should be included?

Yes  No

Please select only one answer and let us know of any further information that should be included and why in the below box.

39. Please provide any further comments on this chapter in the box below.

## Chapter 7: The law on fire

This chapter gives an overview of the current law and refers to the Fire (Scotland) Act 2005, the Housing (Scotland) Act 2006, the Housing (Scotland) Act 2010 and the Civic Government (Scotland) Act 1982.

40. Do you think this is useful information to have in the Guidance?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

41. Is the information on legislation in this section of the guidance clear?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

### Appendix 3: Fire Risk Assessment Template

There is a suggested Fire Risk template included with the Guidance. The aim is to provide a straightforward template that works with the Guidance. Other templates can be used, including those already developed by you or your organisation. As noted in the 'Fire Safety in High Rise Domestic Buildings' Guidance, fire risk assessments should be completed by someone with the appropriate capability to carry one out. This should be kept in mind when answering the following questions.

42. Do you think that those responsible for carrying out a fire risk assessment will find the included Fire Risk Assessment template easy to use to carry out an effective assessment?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

### General questions on the Guidance

*Please keep in mind when answering, that this guidance is intended for **those that own, factor, manage, give advice on and enforce standards in high rise domestic buildings.***

43. Can you suggest ways to let people know this Guidance is available once it is published?

44. Will this Guidance be straightforward to use by those that own, factor, manage, give advice on and enforce standards in high rise domestic buildings?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

45. Do you think the content is clear and easy to understand?

Yes  No  In part

Please select only one answer and provide any comments in the box below.

## **Business and Regulatory Impact Assessment (BRIA)**

We will publish a Business and Regulatory Impact Assessment (BRIA) with the Guidance that will set out any expected impact that implementation of the guidance might have on business.

46. Please give information and views on any business impacts you consider the Fire Safety in Existing High Rise Domestic Buildings guidance might have.

## **Equality Impact Assessment (EQIA)**

We will publish an Equality Impact Assessment (EQIA) that involves assessing the impact of policies, practices or services against the requirements of the public sector equality duty. The duty requires all Scottish public authorities to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. It covers people with protected characteristics in respect of all aspects of equality (age, disability, sex, race, religion or belief, sexual orientation, gender reassignment and pregnancy and maternity).

47. Please give information and your views on impacts on groups with protected characteristics as noted above, that implementation of the Fire Safety in High Rise Domestic Buildings guidance might have.

48. Please provide any further comments you have on the Guidance below.

## Responding to this Consultation

Please respond to this consultation using the Scottish Government's consultation hub, Citizen Space (<http://consult.gov.scot>). Access and respond to this consultation online at <https://consult.gov.scot/fire-and-rescue/fire-safety-consultation-2019>. You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date of 17 July.

If you are unable to respond using our consultation hub we will send you a paper copy. To request one please you can contact us:

By post:

Fire and Rescue Unit  
Scottish Government  
1 West  
St Andrew's House  
Edinburgh, EH1 3DG

By phone

0131 244 0896

By email

[FireSafetyConsultation2019@gov.scot](mailto:FireSafetyConsultation2019@gov.scot)

### Handling your response

If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to be published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document.

To find out how we handle your personal data, please see our privacy policy: <https://beta.gov.scot/privacy/>

## Next Steps in the Process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.gov.scot>. If you use the consultation hub to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. A report of the analysis of the responses will also be made available (individuals will not be identified in that report).

## Comments and Complaints

If you have any comments about how this consultation exercise has been conducted, please send them to the contact addresses noted above.

## Scottish Government Consultation Process

Consultation is an essential part of the policy making process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: <http://consult.gov.scot>. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

## STRENGTHENING FIRE SAFETY FOR HIGH RISE DOMESTIC BUILDINGS CONSULTATION

### RESPONDENT INFORMATION FORM

**Please Note** this form **must** be completed and returned with your response.

To find out how we handle your personal data, please see our privacy policy:  
<https://beta.gov.scot/privacy/>

Are you responding as an individual or an organisation?

- Individual  
 Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

- Publish response with name  
 Publish response only (without name)  
 Do not publish response

#### Information for organisations:

The option 'Publish response only (without name)' is available for individual respondents only. If this option is selected, the organisation name will still be published.

If you choose the option 'Do not publish response', your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

Yes

No

## Fire safety in existing high rise domestic buildings

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#### Chapter 3 Risk management – assessing the risk to persons (Page. 10)

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- Key points
- Responsibility for fire safety in the building
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Appendix 2 Example of fire action notice (Page. 48)

Appendix 3 Fire Risk Assessment Template (Page. 49)

## Acknowledgement

This Guidance is for fire safety in high rise blocks in specifically for Scotland. It draws on the content of the guidance issued for England, 'Fire safety in purpose-built blocks of flats' (Local Government Association (LGA)). We wish to thanks the Local Government Association for permitting the use of text, diagrams and photographs from their guide.

**The Grenfell Tower Inquiry is an independent public inquiry, set up to examine the circumstances leading up to and surrounding the fire at Grenfell Tower on 14 June 2017. It is important to note that the inquiry is still ongoing and any Guidance included in this document is subject to change pending the outcome of said inquiry. More information can be found at the website**

**<https://www.grenfelltowerinquiry.org.uk/>**

# Chapter 1 purpose and scope of guidance

## Summary

What is this Guidance for?

This Guidance is designed to support effective fire safety in high rise domestic buildings – to prevent fires and limit the effects of fires that occur. It brings together in one place the existing advice and requirements –making this easier to access and use – but nothing new is introduced. This Guidance applies only to Scotland.

It has helpful advice on fire prevention and how to assess and reduce the risks from fire.

### Who is it for?

It will help landlords, managing agents, enforcing authorities and those assessing fire risk in high rise domestic buildings. This Guidance does not provide specific fire safety guidance for residents but rather focuses on communal areas of high rise domestic buildings which can be defined as (but not limited to) hallways, landings and building structure\design. The Guidance does however discuss engagement with residents in chapter 6. Guidance in relation to fire safety for residents can be found on the Scottish Fire Rescue Service (SFRS) website (<https://www.firescotland.gov.uk/your-safety/for-householders/home-fire-safety-visit.aspx>).

### What buildings are included?

This Guidance applies to buildings with a storey in excess of 18 m above the ground – roughly more than 6 floors – but no storey above 60 m - roughly 20 floors. Buildings above 60 meters are so few in Scotland that specialist advice should be sought for buildings of this height. General advice for high rise property can be found on the SFRS website (<https://www.firescotland.gov.uk/your-safety/for-householders/multi-storey-flats.aspx>). It covers existing purpose built, high rise domestic buildings containing domestic flats.

### What is the Fire risk in high rise domestic buildings?

It is important to keep in context that in high rise blocks of flats, the vast majority of fires are contained within the flat (and, in the majority of cases, the room) of origin. According to SFRS data, there have been no fire deaths beyond the dwelling of fire origin since 2009. Furthermore SFRS have confirmed that there have been no fatalities at all as a result of any fire originating within a common area since 2009.

Most often the fire does not spread because each individual flat is totally enclosed by fire resisting construction. So the main risk from the fire is to the residents in the flat where the fire originated.

There are cases where fire did spread and there can be significant loss of life in extreme cases as two tragic fires in England show. In 2017, 72 people died in Grenfell Tower, London and in 2009, 6 persons died in Lakanal House, London.

## Scope

This Guidance aims to provide guidance and recommendations for use when assessing the adequacy of existing fire safety measures. Building design varies and no guidance can provide specific solutions for all possible circumstances. This Guidance is concerned with fire-related, life safety issues. Fire safety design in new blocks of flats is governed by the Building (Scotland) Regulations 2004, but once constructed, this Guidance is applicable.

It applies to blocks of flats regardless of the tenure of the flats, whether owner-occupied, social housing or private rented sector.

The term 'flat' is used to describe a self-contained domestic dwelling in a high-rise building. It includes those arranged on more than one storey, such as maisonettes (duplex apartments).

'Residents' is used when referring to the occupants of the flats. This is intended to cover all those who live in the building, whether owner or tenant. The term 'tenant' is used when specifically referring to tenants, but not other forms of resident.

Premises put to specific uses which may be found in high rise domestic buildings and to which fire safety law applies, are not considered further in this guidance. Please refer to the relevant sector specific guidance for:

- any flat within a block that is a house in multiple occupation<sup>1</sup>
- any flat used as a holiday let
- any flat used for registered childminding
- offices and similar ancillary accommodation that form part of the building

## Purpose

This Guidance should assist building managers and those assessing fire risk in high rise domestic buildings, and all are encouraged to use it, although it is not mandatory. Generally Fire Safety law does not generally apply to individual dwellings.

There is separate fire safety advice for individual flats, so this Guidance only applies to communal areas (as defined above) and instances where fire safety measures in flats that may affect others' safety. It is also important that residents are able to have appropriate fire safety measures in place for their flats. A separate, single source of straightforward guidance is being produced to assist residents. Building managers work with residents on fire safety and influence behaviour but are not responsible for individual flats.

This Guidance applies to buildings that have a 'stay put' procedure in the event of fire. This is when a fire occurs within one flat (or, less likely, in the common areas), it is normally safe for other residents to remain within their own flat.

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<sup>1</sup> In general, a flat 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 will be a house in multiple occupation. HMOs require to be licensed under the Housing (Scotland) Act 2006

This Guidance does not apply to buildings in which, in the event of a fire in a flat, the routine procedure is for the entire building to be evacuated simultaneously. Guidance in respect of simultaneous evacuation situations<sup>2</sup> has been issued by the National Fire Chiefs Council.

This Guidance has been drafted while the inquiry into the Grenfell Tower fire is in progress, and may be reviewed once the inquiry has reported.

## Using this Guidance

Where possible, this Guidance tries to avoid setting prescriptive standards. It includes criteria for determining the level of safety that are intended to act as benchmarks against which comparisons can be made. Similarly, the methodology for assessing risk which is outlined is intended to assist in making comparisons. Alternative approaches to individual situations may be appropriate if an equivalent level of safety is achieved.

Assessing risk and determining an appropriate package of fire safety provisions in some buildings may require particular knowledge and skills. Users of this Guidance should consider whether they have the necessary competence before applying this Guidance to a particular building. In some cases, it may be necessary to seek specialist help.

## Chapter 2: Fire safety design in high rise flats

This Chapter explains the fire safety measures for high rise domestic property including fire prevention and response to a fire i.e. evacuation strategies; facilities specifically for use of the Scottish Fire and Rescue Service.

### Key points

- each flat is a fire-resisting ‘box’ designed on a ‘stay put’ evacuation principle
- fire resistance is also provided to stair enclosures, service risers, lobbies and ancillary areas
- fire resisting construction includes the provision of self-closing fire-resisting doors
- smoke control systems are used to protect communal means of escape
- flats are fitted with smoke alarms and heat alarms
- high rise blocks do not normally require a communal fire alarm system
- automatic fire suppression is installed in newer blocks
- facilities are provided to assist firefighters
- the surface of internal construction materials should restrict fire spread
- the nature and construction of external cladding systems and facades (including spandrel and window panels) should limit external fire-spread

## Fire Separation<sup>3</sup>

To restrict fire and smoke spread, each flat is a fire-resisting enclosure bounded by non-combustible separating walls and floors that will resist the passage of fire for a

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<sup>2</sup> National Fire Chiefs Council, Guidance to support a temporary change to a simultaneous evacuation strategy in purpose-built block of flats. May 2018

<sup>3</sup> Fire separation is a term used in Scottish building standards. In UK guides this is often included under the general concept of ‘fire compartmentation’

period of time. Separating walls and floors are also provided between flats and the common areas and to enclose stair and lift wells.

While there will be fire separation to each flat, when the fire and rescue service tackle a fire in a flat, its hose will prevent doors from fully closing and may result in smoke spread into common areas.

## Evacuation strategy

Fire separation provides a standard of fire resistance aimed at containing a fire within the flat of fire origin. Accordingly, those in flats remote from the fire are normally safe to stay where they are. Notwithstanding the experience in the tragic fires in England, in the majority of fires in blocks of flats, residents of other flats do not need to leave their flats. In some circumstances, residents might place themselves at greater risk if they do leave.

This is the essence of the 'stay put' principle. It has been used in guidance since the 1960s and is the basis upon which high rise blocks are designed today. It is an appropriate strategy in the majority of existing blocks.

A 'stay put' policy involves the following approach:

- when a fire occurs within a flat, the occupants alert others in the flat, make their way out of the building and summon the fire and rescue service
- if a fire starts in the common areas, anyone in these areas makes their way out of the building and summons the fire and rescue service
- all other residents not directly affected by the fire would be expected to 'stay put' and remain in their flat unless directed to leave by the fire and rescue service

Persons not directly involved who wish to leave the building, should not be prevented from doing so. Nor does this policy preclude those evacuating a flat that is on fire from alerting their neighbours so that they can also escape if they feel threatened.

The Scottish Fire and Rescue Service (SFRS) will take control of the incident on arrival and provide advice to residents as necessary. Inevitably, fires do occur in which, for operational reasons, the fire and rescue service decides to evacuate others in the building. In these cases, partial or total evacuation of a block is sometimes necessary. These uncommon situations may be where a fire spreads beyond the flat of origin to involve other flats as a result of fault or failings in the construction.

The alternative to a 'stay put' policy is one involving simultaneous evacuation where all, or a number of residents, evacuate together. It requires a system to alert all of these residents to the need to evacuate.

It is reasonable to expect that the occupants of blocks of flats may reflect the range of physical and mental capabilities of the general population as a whole and will include older people and people with certain disabilities. It may well be that simultaneous evacuation is impracticable for certain residents.

Some fire risk assessors might adopt a precautionary approach whereby, unless it can be proven that the standard of construction is adequate, then an assumption is made that it is not. As a consequence, simultaneous evacuation and a common fire alarm system could be proposed in blocks of flats designed to support a 'stay put' strategy. A precautionary approach is contrary to the principles of risk assessment (see chapter 4). Proposals to abandon a 'stay put' policy based on a precautionary approach should be challenged. Before committing resources, it would be appropriate to seek further opinion.

## Means of escape

It is a principle that escape from a fire should not rely on external rescue by the fire and rescue service. High rise blocks of flats are designed so that escape or rescue via windows should not be necessary. Above the third floor, rescue by fire and rescue service ladder is unlikely to be possible; and high reach appliances have their limits due to height and restricted access.

It is the norm for many high rise blocks to have a single stair escape route. Even in some blocks with two or more stairways, it is often necessary to travel along a single common corridor to reach either stairway.

Escape routes from a flat to ultimate safety outside the building rely on using the common areas, involving horizontal escape from the flat entrance door using a corridor, lobby, or an external balcony or deck – then vertical escape via a stairway to a final exit. Lifts should not be used unless they have been designed and constructed specifically for use as evacuation lifts and appropriate management procedures are in place.

Adequate levels of fire protection need to be provided to the communal escape routes so that smoke and heat from a fire in a flat or ancillary room will not prejudice use of the corridors, lobbies, external balconies or stairways.

Once out of the flat, escape for residents depends on the common areas being suitable for use in an emergency. Design of communal means of escape in high rise blocks of flats is based on the following:

- there is fire separation between flats, between flats and the common areas, and between common areas and ancillary accommodation - this provides a barrier to fire and smoke spread
- the materials used in the construction of the building or the protection afforded to them are such that fire is inhibited from spreading through the fabric of the building
- the materials and construction of the building envelope resist external fire spread
- common areas are constructed and used in a way that any fire originating in the common areas should not spread beyond the immediate vicinity
- corridors leading to stairways are enclosed in fire-resisting construction
- where there is only escape in one direction along a corridor, the extent of travel in such 'dead ends' is limited

- open decks and balconies are limited in extent if escape is only possible in one direction, with fire-resisting construction to protect people passing other flats to reach a stairway
- escape stairways are enclosed in fire-resisting construction
- if a single escape stairway, the stair has protected lobby approach (with automatic ventilation in the lobby)
- any areas, rooms or service riser openings onto communal escape corridors and stairways are fitted with fire-resisting doors that are self-closing or kept locked shut
- arrangements are provided for smoke control in stairways, protected corridors, and protected lobbies (often with control provision for fire and rescue service use)
- the building's elements of structure possess sufficient fire resistance to resist fire-spread, and to prevent structural collapse

The fire protection provided to the means of escape also provides protection and space for firefighters to set up a forward control point and a bridgehead from which to commence firefighting.

## Fire detection and alarm systems

Early warning of fire in a flat is essential to ensure that residents can evacuate safely from the flat in a fire. Provision of appropriate smoke alarms and heat alarms in individual flats is a basic component of fire safety design. Smoke alarms are successful in giving early warning of fire and reducing the number of casualties in dwelling fires.

Separate automatic fire detection is provided in the common areas in order to automatically open vents used to clear smoke. Such systems do not incorporate an audible warning.

In blocks designed to support a 'stay put' policy, it is undesirable for a communal fire detection and alarm system to be provided.

Only in unusual circumstances will a communal fire detection and alarm system be appropriate for a high rise block of flats. This could be where it is impossible to upgrade other measures to enable a 'stay put' policy to be adopted, and where the residents can respond to an alarm and can evacuate without assistance, and where the building has escape capacity for simultaneous evacuation. Though for most blocks of flats, this would be unrealistic.

However, there are circumstances when a fire alarm system could be provided in the communal areas but without a simultaneous evacuation procedure. This is where the objective of the system is to compensate for a particular shortcoming in an aspect of escape route design or fire separation. In such a case, system actuation would be notified automatically to a receiving centre and passed to the fire and rescue service but would not sound a general evacuation. Use of such systems will only be applicable in specific circumstances, and will require careful consideration.

## Life safety automatic fire suppression

Building regulations in Scotland have required life safety automatic fire suppression systems (principally sprinklers and water mist systems) in new build high rise blocks since May 2005. There are also a few blocks, built before that date, into which suppression systems have been retrofitted. Suppression systems are fitted in every flat and often in all ancillary rooms and spaces throughout the building to help contain a fire.

Automatic suppression systems are effective at controlling and extinguishing fires at the point of origin in the areas protected by the system.

## Other fire safety measures

High rise blocks are provided with emergency escape lighting to provide adequate illumination of escape routes for residents to be able to see the way out in an emergency.

In a single stairway building, there is rarely a need for fire exit signs. But they might need to be displayed to assist in the use of an escape route with which people are unfamiliar.

It is not normally necessary to provide fire extinguishers and other forms of fire-fighting equipment in common areas for use by residents. Such equipment should only be used by persons trained in its use - and it is not appropriate or practicable for residents in a block of flats to receive such training. The provision of fire extinguishers is therefore problematic. But this does not preclude residents from providing their own fire extinguishers and fire blankets in their flats if they wish.

In addition, if a fire occurs in a flat, the provision of fire extinguishing appliances in the common areas might encourage the occupants of the flat to enter the common area to obtain an appliance and return to their flat to fight the fire. Such a procedure is normally inappropriate.

Fire-fighting equipment may be required in plant rooms and other rooms, for use by staff or contractors.

## Fire and Rescue Service facilities

Facilities to enable the fire and rescue service to effect rescue and fight a fire are provided and normally comprise of protected stairways and lobbies, specially designed lifts for use by fire-fighters and fire mains by which the fire and rescue service can obtain water.

At the time of writing, the Scottish Government is considering a proposal to equip new high rise blocks of flats with a warning system that could be used to alert some or all residents that stay-put has been overruled and that evacuation is necessary. This would be under the exclusive control of the SFRS.

## Chapter 3: Risk management – assessing the risk to persons

The purpose and practicalities of fire risk assessments are covered in this chapter, including a proposed method for undertaking those assessments. This will assist those responsible for fire safety to establish whether existing fire safety measures are adequate or if improvements are required.

### Key points

- the purpose of assessing risk is to evaluate the risk to people from fire and determine what are appropriate fire safety measures
- the assessment of risk will normally only consider the common areas and fire spread potential, and specified parts of flats - it will not otherwise extend to inside the flats themselves
- where there is concern regarding risk to individual residents within their own flat, this should be referred to the SFRS for a home safety visit
- fire spread potential on the external facade and roof of the building should be considered.
- intrusive checks (involving exposure of construction) will only be necessary where there is justifiable concern regarding structural fire precautions
- assessing risk need not always be carried out by specialists, but where external specialists are used, care should be taken to ensure their competence
- the findings of risk assessments need to be actioned
- fire safety risk assessments should be reviewed regularly and when circumstances change or after a fire or near miss

### Scope of fire risk assessment

Fire risk is a combination of the likelihood of fire occurring and the consequences to the safety of people if it does occur. A fire safety risk assessment is a systematic and structured examination of the likelihood of fire and the likely consequences to residents and others who may be affected by a fire.

It involves an organised and methodical look at the premises, 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 that respect, fire safety measures include not just physical measures, but also standards of management.

Generally, a fire safety risk assessment is not legally required under Part 3 of the Fire (Scotland) Act 2005 for the common areas of domestic premises. Nevertheless, it is a strong recommendation that those persons or organisations responsible for the management of high rise blocks, carry out an assessment of fire risk in the building, as part of their corporate responsibility.

In that respect, fire risk assessment is concerned with the safety of the building and common areas, rather than an assessment within each individual flat. Accordingly, the fire safety risk assessment does not include an assessment to protect residents from a fire starting in their own flat. However, physical fire safety measures within flats can sometimes affect the safety of the rest of the building. Examples are:

- Flat front doors - these are normally important to the safety of the common areas in the event of a fire within a flat
- Flat internal doors - to protect the common areas from a fire within a flat, reliance was sometimes previously placed on internal fire doors within every flat
- Ventilation systems - common kitchen or bathroom extract arrangements can be a route for fire-spread between flats
- Suppression systems – these will normally contain a fire within a flat

It is a principle in fire safety risk assessment that measures to address shortcomings in fire safety should be proportionate to the risk. The cost, practicality and benefit gained are all taken into account.

## Extent of fire risk assessment

The assessment of risk should be specific to fire safety and to the specific premises concerned. A generic risk assessment will not be appropriate.

A fire safety risk assessment will normally be non-intrusive without any opening up of construction and will consider:

- the common area arrangements for means of escape and other fire safety measures
- an examination of a sample of flat entrance doors
- so far as reasonably practicable, the separating construction between the flats and the common area
- the potential for spread of fire on the external envelope of the building

Where there are demountable false ceilings in the common areas, it may be appropriate to lift a sample of ceiling tiles to check fire stopping. It will normally be appropriate to open a sample of service risers to check measures against vertical fire spread.

If serious issues in structural fire protection are suspected, such as inadequate fire separation or poor fire stopping, a degree of intrusive inspection might be carried out on a sampling basis. This will usually necessitate the presence of a contractor for the purpose of opening up construction and making good after the inspection.

Intrusive inspection is usually a one-off exercise, which is carried out only if there is good reason to suspect serious physical issues. The need for intrusive inspection

should not simply be recommended as a matter of course. The age of the block alone is not sufficient reason to warrant an intrusive inspection.

Intrusive inspection within flats should only be carried out in those that are vacant. Before intrusive inspection is to be carried out, the risk of disturbing asbestos should be considered.

## Competence of fire risk assessors

There is no requirement for a fire safety risk assessment to be carried out by a specialist. The decision as to whether to use outside specialists to carry out a risk assessment rests with the building owners or management. They will need to decide whether they, or their employees, have the capability to assess fire risk. If they do not have sufficient resources or skills, they can arrange for a suitably qualified person or company to carry out an assessment on their behalf.

If an external consultant (fire risk assessor) is used to carry out a fire safety risk assessment, it is important that the fire risk assessor is competent. 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.

The use of registered or third-party certificated persons or third-party certificated firms to carry out fire risk assessments is one way to establish due diligence. The Scottish Government and the SFRS recommend that those who wish to contract the services of external fire risk assessors, select an assessor who is third party certificated by a United Kingdom Accreditation Service (UKAS) accredited Certification Body or a similar Professional Registration Scheme. The SFRS maintains a list of UKAS and other recommended schemes on its website. 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.

High rise blocks of flats are different in nature from commercial premises, such as offices and shops. In selecting a fire risk assessor, the competence of the fire risk assessor should extend to the principles of fire safety in high rise blocks.

When commissioning a risk assessment from an external consultant the following should be specified:

- the extent of the fire safety risk assessment required
- the style and format required for the report
- that an improvement plan will show priorities and timescales
- that the report differentiates between recommendations that are important to safety and those that are not essential and are a matter of good practice

Conclusions from a risk assessment should be supported by reasoned judgement. Any of the following type of conclusion from a fire risk assessor should be challenged:

generic recommendations that are not specific to the premises

any conclusions that attempt to transfer risk away from the risk assessor  
decisions that appear to be precautionary and to be risk-averse

## A methodology for assessing fire risk

Guidance on one approach to fire safety risk assessment is set out below and shown in figure 1. There is no requirement to use any particular style or format for carrying out an assessment or recording the findings, other approaches and formats may be equally acceptable.



Figure 1 Fire safety risk assessment process

### Step 1: Obtain information

The following information will be relevant, as it has a bearing on fire risk and control measures

- the number of floors and the approximate area of each floor
- any ancillary uses to which the building is also put, such as commercial, community activities, etc.
- the number and nature of the residents - this includes any social and known lifestyle factors that affect the risk from fire
- the presence of staff such as a caretaker or concierge
- previous history of fires in the block
- the result of any previous examination of external cladding
- how fire safety in the building is managed
- the procedures for residents to follow in the event of fire
- testing and maintenance of fire safety systems and equipment
- arrangements for routine inspections of the building

## Step 2: Identify potential causes of fire

For a fire to start, three components are needed: a source of ignition; fuel; and oxygen. 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.

The premises should be examined to identify potential ignition sources and materials that might fuel a fire and the circumstances which might allow a fire to start.

The potential for a fire to occur within a flat is obviously considered, but the control of causes of fire within the flats is under the control of the residents and is outwith the scope of the assessment, other than where matters are under the control of the landlord.

Consideration should be given to the potential following causes of fire and to measures provided to eliminate or reduce the likelihood of each cause:

- fire raising
- electrical faults (in fixed wiring and any equipment provided)
- smoking
- use of portable heaters
- contractors' activities
- heating installations
- lightning
- housekeeping

## Step 3 Evaluate the risk

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.

Having considered the risk to people 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:

- the potential for fire to affect escape routes
- fire or smoke spread through a building via routes such as vertical shafts, service ducts, service penetrations, ventilation systems, cavities, voids and open doors
- fire and smoke affecting the behaviour of occupants
- fire and smoke spread into the premises from exterior fires

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

Principal fire safety measures to consider are.

- the means of escape from fire, with consideration given to:
- the fire resistance between flats and the common areas
- flat entrance doors, which should be fire-resisting and self-closing
- protection of stairways from fire in adjacent areas
- travel distance from flat entrance doors to the nearest stairway or final exit
- means for smoke control within the common areas
- emergency escape lighting
- fire escape route signs
- fire separation, particularly the enclosure of flats within fire-resisting construction
- any fire suppression installations provided
- fire mains and fire-fighting lifts

#### Step 4 Decide if existing Fire Safety Measures are adequate

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.

Measures to assist the fire and rescue service, such as fire mains and fire-fighting lifts will normally have been required under building regulations at the time of construction. Adequate maintenance of these measures should be verified. For discussion of fire safety measures, see chapter 7 of this Guidance.

#### Step 5: Formulate an improvement plan

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.

The outcome of the fire risk assessment should be an improvement plan where improvements to fire safety measures are considered necessary. The improvement plan should set out a list of any physical and managerial measures that are necessary to ensure that fire risk is maintained at, or reduced to, an acceptable level. The actions should be reasonably practicable, taking cost, effort and risk into account. The plan should have priorities and timescales for the completion of the action required.

The improvement plan should also include any specific measures and precautions that need to be taken during upgrade work.

The improvement plan should address both physical fire safety measures and managerial issues, and should normally prioritise measures (unless all required measures are relatively minor and can be implemented in a short time), so that the appropriate effort and urgency is clear.

If it is considered that the fire risk and existing fire safety measures are such that no improvements are necessary, this should be recorded within the findings of the fire risk assessment.

Where improvements involve building work, the work should be done in accordance with building regulation procedures.

#### Step 6 Record the findings

There is no unique way in which fire risk should be expressed, but it is innate to the process of carrying out the fire safety risk assessment that a record is kept of the significant findings from the fire safety risk assessment and any action taken, or to be taken as a result of the risk assessment.

A copy of any completed fire risk assessments should be available to those living in the building, on request.

#### Step 7: Review

Set a date for a review. A fire safety risk assessment should be reviewed regularly (see below). It should also be reviewed:

- when material alterations take place (where changes are proposed, the consequence to fire safety in the premises should be considered before the change is introduced)
- when there is a significant change in the matters that were taken into account in the risk assessment
- when there is a reason to suspect that the original assessment of risk is no longer valid
- after a fire or near miss

Review of a fire safety risk assessment is not necessarily the same as a repeat of the entire fire risk assessment process. If a thorough fire safety risk assessment has been carried out, a shorter review exercise might be carried out regularly, with a more fundamental new fire risk assessment completed at less regular intervals.

As a general guide an annual review might be appropriate, with a new fire safety risk assessment every three years.

There is benefit if reviews are carried out by in-house staff who have received suitable training, as the review concentrates primarily on progress with the previous improvement plan and identification of changes. This will reinforce ownership of fire safety management and assist in the development of relevant knowledge and of a fire safety culture.

## Chapter 4: Risk management – preventing fires

Chapter 4 focuses on preventing fires and their impact. It sets out the common causes and measures to control or eliminate them. It also considers different approaches to fire safety measures in communal areas, stairways and landings.

### Key points

- it is as important to prevent fires as it is to provide measures to protect people when fire occurs
- the most likely place for fire to start is within a flat – most flat fires are caused by cooking
- fires within common areas can be particularly dangerous
- good security can reduce the incidence of fire raising
- poor housekeeping in the common areas is a significant risk
- there should be a clear policy on whether common areas remain free from combustibles, 'zero tolerance' or are subject to 'managed use'

### Introduction

The prevention of fire is important and is fundamental to good fire safety management. This chapter is aimed primarily at giving guidance on fire prevention within the common areas of blocks of flats. However, the most likely place for a fire to start within a block of flats is in the flats themselves.

The scope for landlords or factors to take steps to prevent fires within flats will be limited. Nevertheless, there are opportunities in rented flats through, for example, regular gas safety checks and periodic inspections of electrical installations to impact on the potential for certain fires within flats.

Much can be done by landlords, other housing providers and the SFRS through its community safety engagement activities, to reduce the risk to residents.

Common causes of fire and possible measures to control or eliminate them are set out below. However, this Guidance is not exhaustive, and those managing fire safety should be vigilant for other hazards that might be present or new hazards that might materialise in the future.

### Smoking

Smoking in common areas presents a possible fire risk and should be avoided. With surreptitious smoking, people's efforts to conceal their actions can result in increased risk.

Providing suitable receptacles for smokers' materials outside entrances may encourage people to put out their cigarettes before entering.

## Fire raising

In 2017/18, deliberate ignition was the cause of some 21% of fires in high rise blocks (of 10 or more floors) attended by the SFRS.

Measures that can be used to address the potential for fire raising include:

- good physical security and access control
- effective lighting, both externally and internally in the common areas
- where appropriate, CCTV on entrances and external facades
- maintaining common areas free from combustible material
- where possible, having the presence of a caretaker or concierge



The possible conflict between security and fire safety should be taken into account. Any measures taken to restrict access must not prevent people from escaping easily in a fire or interfere with the operation of fire safety measures.



Residents should be encouraged to make their homes secure. Advice on crime prevention in the home is available from the police. However, care is needed to ensure that any measures taken do not conflict with the need to escape in the event of fire and do not prevent access by the fire and rescue service.

## Housekeeping

The ignition of combustible material within the common corridors, stairways and landings will give rise to the presence of smoke in escape routes and the possibility of fire-spread into flats.

Good housekeeping is fundamental to reducing risk in blocks of flats. Controlling the presence of combustible materials and ignition sources reduces the potential for accidental fires to start and develop in the common areas, significantly reduces the scope for deliberate fires, and ensures escape routes are free of obstructions that might hinder the evacuation of people from the building or the access for fire-fighters.

Ancillary rooms that adjoin escape routes should be kept free of combustible material as there is a risk that any resultant fire could eventually threaten the escape of occupants of flats.

Sometimes residents see the common areas as amenity areas, where, for example, they can store bicycles, dry clothes and place furniture. A further problem is dumping unwanted belongings and rubbish in the common areas.

The potential for significant smoke production and fire development when combustible materials are ignited varies enormously, depending on the inherent properties of the material. This includes its ease of ignition, the quantity present and its configuration. Not all of the items commonly found are either easily ignitable or likely to give rise to a serious risk if ignited in isolation.

This suggests that it might be possible to allow some items to be present without unduly exposing residents to risk. However, the difficulties landlords and others responsible for the common areas face is how to manage use of the building in this way. Unrestricted use of common areas is clearly not acceptable. It will, therefore, be necessary to adopt either 'zero tolerance' policy or a 'managed use' policy.

A 'zero tolerance' approach is one in which residents are not permitted to use the common areas. No exceptions apply. It would mean that the common areas are kept free of combustible material, ignition sources and obstructions. The benefits of a zero tolerance approach are:

- it is a simple policy to adopt
- it removes not only the risk from accidental fires, involving items in the common areas, but also denies fuel for fire raising
- there is no ambiguity regarding what is allowed and therefore residents know exactly where they stand
- it is easier to 'police' when carrying out inspections

There are, however, disadvantages including:

- by not taking into account the specific circumstances, this policy might not be risk proportionate
- it unduly penalises those who could manage their common areas effectively
- it denies residents an opportunity to personalise and improve their living environment

The alternative is 'managed use'. This approach allows strictly defined use of common areas and limits the items allowed, to control fire load and ease of ignition. It includes strict conditions on where such items can be kept. For example, a 'managed use' policy might permit residents to place pot plants and door mats outside their front doors or have framed pictures and notice boards on walls.

The 'managed use' approach benefits include:

- by making the common areas 'homely', it fosters a sense of pride and value in the block, which can impact positively on anti-social behaviour
- it might benefit older and disabled people if they are allowed to store mobility aids at the point of access
- it allows the specific risk factors in the building to be taken into account

The disadvantage is that it is more difficult to apply as it requires a clearly defined policy with a list of 'dos and don'ts'.

A 'zero tolerance' policy should:

- always apply when there is doubt about the ability of residents to apply a 'managed use' policy
- be adopted where flats open directly onto stairways
- be adopted where deliberate ignition is a significant concern

When adopting a 'managed use' policy:

ensure there are clearly defined 'do's and don'ts' that residents can follow

- there is more scope for misunderstanding, requiring more education of, and communication with residents
- it is likely to require more frequent inspections
- generally only apply it to buildings which have effective access control
- never allow items to be left awaiting disposal, not even in chute rooms – even short term presence poses a risk
- do not allow upholstered seating
- never allow motorcycles and other equipment containing petrol and other fuels
- never allow charging of mobility scooters, batteries or other electrical equipment in common areas – consider providing dedicated rooms for charging, suitably fire separated from the rest of the block
- only allow scooters, bicycles, prams and so forth, if there are suitable areas, that will not pose an obstruction, where they can be kept
- ensure that the legal requirement to keep common areas clear of combustibles and obstruction is achieved (see paragraph 63)

While it may be easier to take the 'zero tolerance' approach, residents may be put at significant inconvenience and resort to infringements of the policy through frustration. Consideration of the needs of residents in ways that encourage them to follow the constraints of such an approach can contribute significantly to fire safety.

Regular inspection is key to maintaining good housekeeping. Landlords should monitor the situation in a block and ensure that there is compliance with the policy adopted.

## Recycling

Recycling initiatives encourage residents to avoid waste and use resources sustainably. However, collection schemes might involve materials being set out in corridors, lobbies and stairways, giving rise to a potentially serious fire risk and being in contravention of the duty to keep common areas clear.

Bags of clothes for charity and boxes and bags of newspapers and plastic containers represent a significant fire load. The material is in a form in which it can be easily ignited and lead to fire-spread and smoke production.

While only transitory, such material is nevertheless wholly inappropriate. It cannot be considered acceptable even where 'managed use' policies apply. Landlords should put in place alternative arrangements for recycling that do not rely on collection from within the common areas.

## Electrical

Ignition of combustible materials through overheating or arcing can result when faults develop in wiring or in appliances. Such faults are often evident before a fire occurs.

Landlords should have the electrical installations in their flats inspected and tested regularly. An interval of 10 years between such inspections would be appropriate for flats where a long term tenancy agreement is in place. An interval of five years might be more appropriate for situations where the tenancy is shorter. For private rented sector houses, there is a requirement for electrical installations to be inspected and tested every five years.

Where tenant turnover is high, it is advisable to have a visual inspection of the accessible parts of the electrical installations after each tenancy.

The electrical installations supplying the flats and the common areas of the block should also be inspected and tested every five years.

Portable electrical appliances used in the areas under the control of the management should be subject to inspection and test on a regular basis. Guidance on the nature and frequency can be found in the IET Code of Practice for In-Service Inspection and Testing of Electrical Equipment.

Some measures to reduce the likelihood of an electrical fire are:

- electrical distribution boards are located in secure cupboards or rooms, within which there is no storage or rubbish
- prevent residents from connecting wiring from their flats to decorative lights or other equipment in the common areas
- look out for residents using sockets in the common areas to charge their appliances or power equipment within their flats

Photovoltaic (solar) panels may be in place above the roof covering or form part of the roof covering. An installation could be a source of fire. Panels which form part of the roof covering should be fire-stopped on the line of any separating wall or compartment wall.

## Heating systems

Residents should be encouraged to have their heating systems serviced regularly. Landlords are obliged to arrange annual gas safety checks for rented properties. Other residents should be encouraged to have their gas heating checked every year.

## Lightning

Lightning is a source of ignition in only a small proportion of fires. The risk depends on factors such as the location, size and construction of the building; the proximity of the building to other structures; and the local topography. A risk assessment tool for

determining the need for lightning protection on a block of flats can be found in BS EN 62305-2, but normally needs a specialist to apply it.

Retrospective installation of lightning protection is rarely likely to be essential. Any existing lightning protection systems should be subject to regular inspection and testing. Guidance on this is available in BS EN 62305-3.

## Other causes of fire

A fire external to the building could affect the external facade of the building. Therefore, vehicles, temporary structures, and materials should not be sited close to the exterior of the building.

Building works and contractors operations can be a source of fire. This is considered in chapter 7.

## Chapter 5: Risk management – physical fire safety measures

Benchmarks are useful for assessing whether existing fire safety measures are appropriate. This chapter discusses how these can be used and offers benchmarks in respect of measures such as fire separation, escape routes, smoke control, stairways and travel distance. Specifications for fire resisting doors can also be found in this chapter along with fire detection systems and facilities and assistance of firefighters.

### Key points

- benchmarks are used to assess the standard of fire safety measures - these are not prescriptive
- upgrading existing buildings to meet current benchmarks may sometimes be appropriate where the original standards are far removed from what is acceptable today, and, as a result, there is unacceptable risk
- when upgrading fire safety measures, fire protection products and services should be fit for purpose and properly installed - third party certification schemes are available for many products and services

### Methodology for using benchmarks

This chapter of the Guidance is concerned with the physical fire safety measures necessary to ensure a satisfactory standard of fire safety. The principles behind these measures are discussed in chapter 2 of this Guidance. The aim of these measures is to ensure the safety of those escaping a fire and for those remote from the fire while they remain in their flats.

The Guidance in this chapter is set out in such a way as to show:

- the standards recommended by design codes and guides for the design of modern high rise blocks

- some commonly found differences between newly built blocks and those designed to previous standards
- possible solutions that might be suitable where the standard found in an existing building has not been maintained in line with the original design intent, or falls far short of the standard considered acceptable today

When carrying out a fire risk assessment, or otherwise reviewing fire safety design in a block of flats, it is important to compare the standard found in a particular block against appropriate benchmarks, before making judgements about the adequacy of the fire safety measures.

Benchmarks allow the standard of safety in a particular block to be assessed, but these should not be seen as prescriptive standards. Benchmarks are intended to allow comparisons. Fire risk assessors and others, need to make judgements when assessing fire safety.

When assessing the adequacy of fire safety measures in existing blocks of flats, the standards that applied when the block was built should be established to determine how far removed the original standards are to what is acceptable today, and whether that gives rise to an unacceptable level of risk.

While many of the principles have not changed, there have been variations in the design of blocks over the years and also changes to some of the approaches to applying these principles. For example, since May 2005, automatic fire suppression systems, 60-minute fire resisting self-closing flat entrance doors and non-combustible external wall cladding systems have been introduced through building regulations. With older blocks, it may be difficult to discern what the original design intent was, and whether it has been preserved or altered subsequently. Similarly, it can be difficult to determine what standard has been achieved in relation to fire separation, given that elements of structure are often hidden and inaccessible.

It is inappropriate to retrospectively upgrade existing blocks to meet current benchmarks without justification on the basis of fire risk. Requirements for upgrading fire safety measures should be based on identification of material risk, and not prescriptive application of guidance.

The objective is to establish whether the departures from benchmarks create significant risk and, if they do, to determine a realistic solution that can be implemented within the constraints of an existing building.

There may be situations in which the original standards of the day are far removed from what is acceptable today and, as a result, there may be an unacceptable risk.

## Third-party certification

Fire safety measures, fire protection products and related services should be fit for purpose and properly installed and maintained in accordance with the manufacturer's instructions or a relevant standard.

Third-party certification schemes for fire protection products and related services are an effective means of providing assurance of quality, reliability and safety. This does not mean goods and services that are not third-party approved are less reliable, but there is no obvious way in which this can be demonstrated.

## Fire separation

Fire separation provides fire resistance between individual flats and between flats and the common areas, and to enclose lift wells. Design guidance recommends the following:

- separating floors and separating walls to be non-combustible
- separating floor to have a minimum fire resistance of 120-minutes
- separating wall between a flat and any other part of the building to have a minimum fire resistance of 60-minutes
- separating wall enclosing a lift well to have a minimum fire resistance of 60-minutes
- self-closing fire doors in separating walls to have a minimum fire resistance of 60-minutes

The standard of fire separation recommended in design for blocks of flats has changed over the years. This has led to variations in the nature of the construction and in the periods of fire resistance that can be found in existing blocks. Previous design standards permitted a lower level of fire resistance.

Separating floors and walls need to be in good condition and have no openings, whether intentional or unintentional, that would permit the uncontrolled spread of fire and smoke.

The fire-resisting enclosure of flats should include flat entrance and other doors, any internal windows into an access corridor, or any glazing above or around the flat entrance door doorways or hatches in walls for access to read meters or for deliveries.

Obvious openings between floors, and in walls between flats and other ancillary accommodation and the common areas, should be considered. Particular attention should be paid to service ducts or service risers and any common heating or ventilation systems.

Where balconies have been infilled and incorporated into flats, the adequacy of fire separation and fire stopping between flats should be considered.

Ducted heating, ventilation or air conditioning systems that serve dwellings, should be arranged so that they do not transfer fire and smoke. This may involve fire resisting construction and fire dampers.

Consideration should be given to the adequacy of fire stopping around any openings in walls and floors for services such as gas, water, electricity, telecommunications and drainage. These may be present where such services enter from the common areas or pass between flats. In some cases, the extent of any openings and the extent of fire stopping can only be ascertained through intrusive inspections and by opening up panels in kitchens, bathrooms and other areas.

Small bore pipes, typically less than 40 mm in diameter, are not normally considered to be of concern. Larger pipes, especially if made of a combustible material, could allow significant fire and smoke-spread. Proprietary fire seals, including externally mounted collars, or fire-resisting enclosures, are used in new buildings and could be used to address this issue in older blocks. However, the difficulties of retrofitting such seals in an occupied block of flats may mean that it will only be practicable to undertake this on a long-term basis as and when flats become vacant.

In some blocks of flats, use will be made of common ventilation ducts to provide extract from bathrooms and, less commonly, kitchens. These ducts may well travel the full height of the building, serving a large number of flats and terminate at roof level.

It has been traditional for many years for the common extract from bathrooms to incorporate shunt ducts to link each flat to the common shaft, which reduce the likelihood of fire and smoke-spread between flats. This arrangement is shown in figure 2. Some early designs used the same arrangement for kitchen extract. However, there may be blocks of flats that do not incorporate shunt ducts and have no adequate means of preventing fire and smoke-spread between flats via ventilation ducts. The absence of measures to prevent fire and smoke-spread via common ventilation systems is far removed from what is acceptable today and action should be taken to reduce the risk it poses.

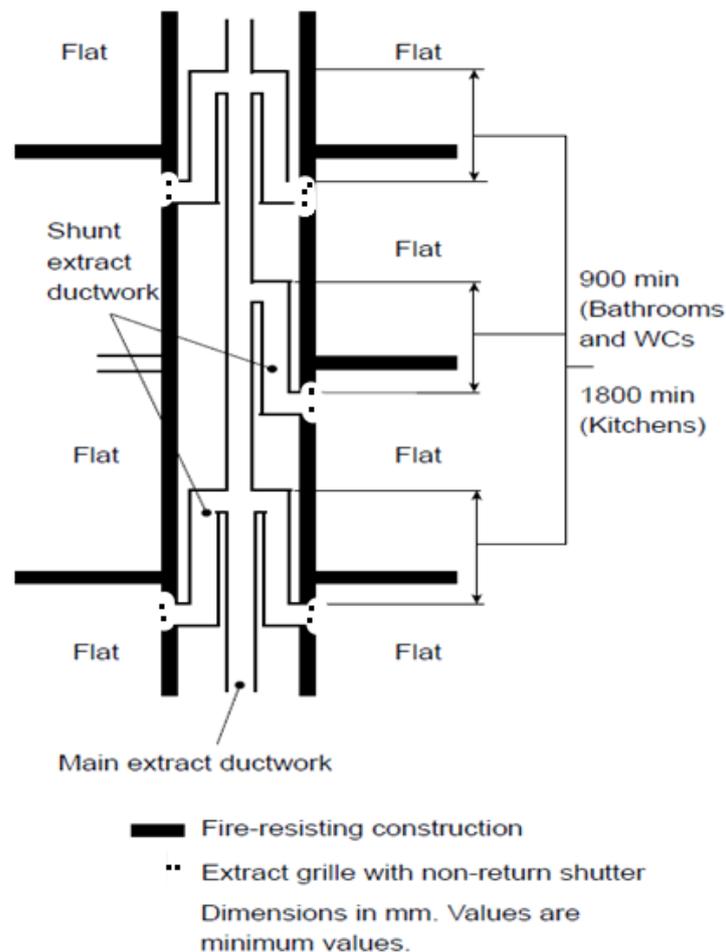


Figure 2 – Shunt duct arrangement

In flats, it will rarely be practicable to retrospectively introduce mechanical fire and smoke dampers into the ventilation ducts. However, one way of reducing the potential for fire spread between flats would be to retrofit intumescent fire dampers to the vents into the ducts. Although this would not restrict the spread of smoke in the early stages of a fire, it would prevent spread of flames and hot gases. This is a reasonable approach for bathrooms, but is less satisfactory for kitchens, where there is the potential for a serious fire in the room in which the vent is located. A solution would be to rearrange the ventilation to discharge directly to outside and not via a common duct.

## Escape routes within the common areas

Buildings where flats are served by a single escape stairway

Design guidance for flats with a single escape route from a flat entrance door to the stairway is as follows:

- every flat is separated from the common escape stairway by a protected corridor or protected lobby
- the distance of travel between the flat entrance door and the door to a lobby or stairway is limited to 10 m
- smoke control is provided by natural or mechanical ventilation in each lobby or corridor adjacent to the stairway
- the stair has a vent at the head

Buildings where flats are served by more than one escape stairway

Design guidance for blocks with more than one escape stairway and alternative routes from the flat entrance door to a stairway is as follows:

- every flat is separated from each escape stairway by a protected corridor or protected lobby
- the travel distance from a flat entrance door to the door to the nearest stairway or stair lobby is limited to 30 m
- any dead-end section of an access corridor is separated from the rest of the corridor by a self-closing fire-resisting door – the single direction of travel in the dead end section of corridor should be limited to 10 m
- smoke control by natural or mechanical ventilation is provided in each lobby or the corridor adjacent to the stairway to protect the stairway
- the stair has a vent at the head

Figures 3 and 4 show these arrangements.

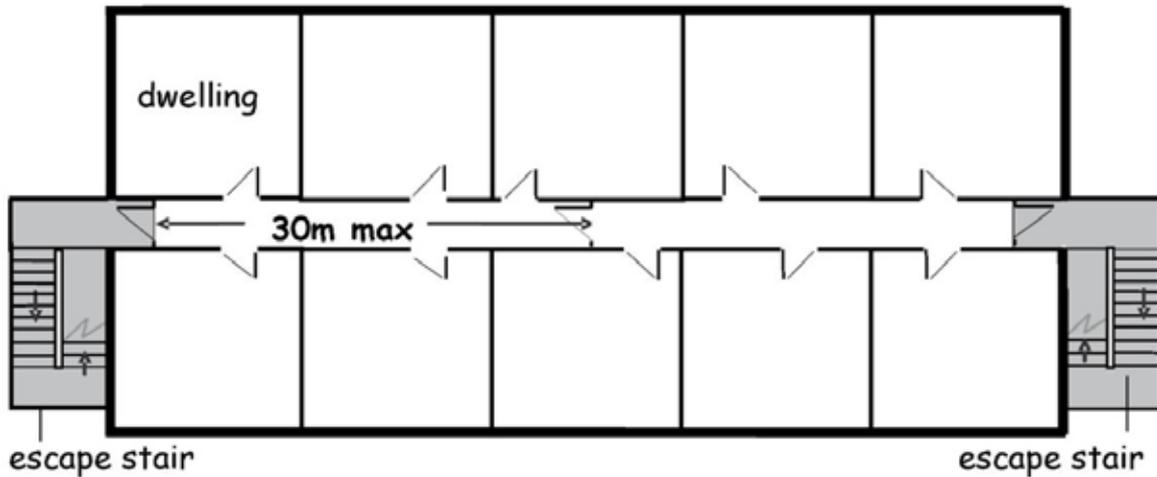


Figure 3 – Upper floor arrangement where flats are served by more than one escape stairway

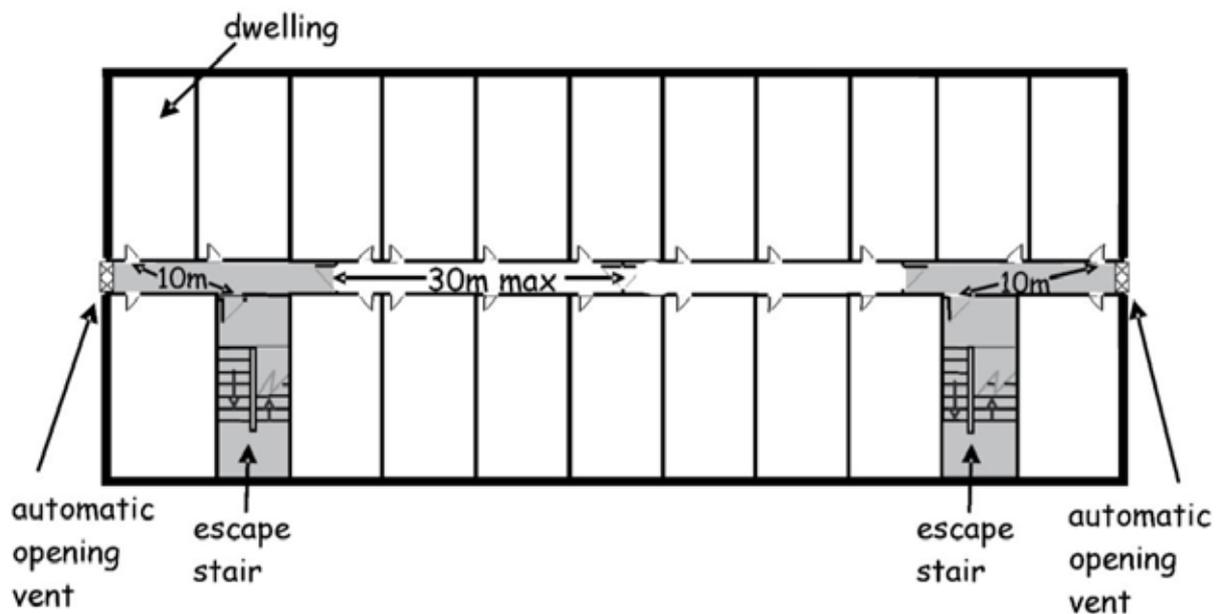


Figure 4 – Upper floor arrangement where flats are served by more than one escape stairway and there are dead ends

### Flats with external balcony or deck access approach

If the width of the access balconies or deck is less than 2m, it is assumed that there is little risk of horizontal smoke spread along the balcony or deck from a fire in a flat, which would prevent residents from using the escape route. There is, however, potential for smoke-spread along balconies or decks wider than 2 m. In these situations, downstands (minimum 300 mm deep) may restrict the lateral spread of smoke.

Ideally, there are no stores or other ancillary rooms, located off the balcony or deck.

The maximum travel distance for a common access balcony or deck is 40 m. There are no limitations on travel distance in the common escape routes for flats with external

balcony or deck approach where the balcony or deck provides two directions of escape. However, the distances specified for fire-fighting access will apply (see paragraph 253).

In flats with a single direction of escape to a single escape stairway, the separating walls between the flats and the balcony or deck are fire-resisting up to a height of 1.1 m from balcony or deck level. The flat entrance doors in these situations are self-closing fire-resisting doors (minimum 30-minutes). This will allow residents, if they need to pass a fire in an adjoining flat, to reach the stairway. In flats with alternative independent escape to another balcony or deck on the same level, which leads back to the single stairway, only one of the enclosures between the flats and the balcony needs to be fire-resisting.

Where there is alternative escape available from each flat entrance along the open balcony or deck to two or more escape stairways, the separating walls between the flats and access balcony or deck and the balcony flat entrance doors are not required to be fire-resisting.

#### Travel distance

Small increases in travel distance can be accepted in most situations without any additional measures. However, additional measures may need to be considered if there are significant increases in travel distance. These might include:

- additional cross-corridor doors to restrict smoke-spread
- improvements to the smoke control arrangements

#### Protected corridors or lobbies

The corridors and lobbies used for means of escape are protected routes enclosed in construction with at least 60-minutes fire resistance.

Ancillary rooms, risers and other areas opening onto corridors and lobbies also need to provide this protection. Doors from ancillary rooms should be fire-resisting. The benchmark for doors opening into corridors and lobbies is a minimum of 60-minutes fire resistance and – with the exception of risers and ancillary rooms – the doors should be self-closing.

#### Stairways

Stairways are enclosed in fire-resisting construction to protect the escape route from fire and smoke. The benchmark for stairs which also provide a fire-fighting shaft is a minimum fire resistance of 120-minutes. Self-closing fire doors in the structure are a minimum fire resistance of 60-minutes.

Stairways should lead directly to a final exit. The stairways should not contain any significant fire hazards and should, ideally, not contain anything other than lifts or protected electrical meter cupboards. Ideally, gas installations should not be located within protected stairways.

A stairway width of 1 metre would normally be considered adequate for means of escape. With a stay-put policy, the number of people expected to use a stairway at the same time in the event of a fire will be limited.

In single stairway buildings the stairway should not continue down to serve a basement or enclosed car park. In multiple stairway buildings, where the stairways serve basements and car parks, one of the stairways should terminate at ground level. Other stairways may extend to serve basements, providing they have lobby or corridor protection at basement level.

A single stairway should not serve a boiler room, fuel storage room or other similar high-risk ancillary rooms. In multiple stairway blocks of flats, the ancillary rooms should normally be separated from the stairways by a protected lobby or protected corridor.

### Smoke control

Measures are provided for smoke control in protected lobbies, protected corridors, fire-fighting lobbies (see paragraph 253) and escape stairs. Smoke control can be achieved by natural means (using the buoyancy of smoke) or mechanical means.

With natural ventilation, lobbies and corridors are ventilated where they adjoin a stairway, at a high level, by means of an automatically opening external wall ventilator (AOV) or a natural smoke shaft.

AOVs which discharge direct to the external air should have a minimum area of 1.5 m<sup>2</sup>.

A smoke shaft rises up through the building. It has an opening at roof level minimum 1.5 m<sup>2</sup>, and AOVs in each lobby into the shaft with minimum 1 m<sup>2</sup> area. Replacement air is supplied by an AOV in the adjacent stairway. The shaft should have a minimum fire resistance of 60-minutes and all ventilators have a minimum fire resistance of 30-minutes.

A mechanical smoke control system can be a mechanical ventilation system or a pressurisation system.

A mechanical ventilation system extracts from the lobby or corridor by creating a negative pressure in the space using fans. Most systems use a vertical shaft. The shaft contains an AOV of 1 m<sup>2</sup> at the top storey.

A pressurisation system works on the basis of forcing air into a space to create a positive pressure to prevent smoke from entering. Pressurisation systems are most commonly found protecting stairs.

Protected stairways have means to ventilate smoke that may enter the stairway. A vent of at least 1 m<sup>2</sup> is provided at the head of the stairway. In blocks of flats with more than one escape stairway, this vent can be opened manually. However, in blocks of flats with a single stairway, the vent is operated automatically. The system is configured to operate if smoke is detected in any protected corridor or protected lobby.

Ventilation systems are actuated automatically by automatic smoke detectors located in the common area and provided specifically for that purpose. On detection of smoke

in a protected lobby or corridor, there is simultaneous operation of the AOV on the floor of actuation, the replacement air AOV, the roof vent and the stair vent (see below). The lobby ventilators on all other floors remain closed.

Any system installed to maintain environmental conditions, should be arranged so that it does not compromise the function of the smoke control system. In the event of fire, the system should either automatically shut off or, if it is integrated with the smoke control system, should operate in fire mode.

Smoke ventilators should be capable of being opened, closed or shut off by the fire and rescue service as required to assist fire-fighting. However, the fire and rescue service control facility should not permit multiple lobby vents to be opened simultaneously.

Control equipment should be fitted with appropriate instruction for the fire and rescue service.

A further part of the containment principle is the subdivision of corridors linking stairways and the separation of any dead-end sections from the rest of the corridor (see paragraph 170). This is to ensure that smoke will not affect access to more than one stairway or, in the case of the dead ends, affect access to the nearest stairway.

It is appropriate, when assessing an existing building's smoke control, to review the arrangements in the light of the standards in place at the time the block was built, and to determine whether it functions as originally intended before considering whether there is a need to improve the arrangements.

It might be appropriate to leave in place existing arrangements, maintained as originally designed. However, it will be less appropriate to engage in capital expenditure to restore older non-functioning smoke control arrangements to their original design, if the expenditure could, instead, provide more effective smoke control in line with modern standards.

The philosophy behind corridor smoke control design has changed over the years. Previous design guidance included a smoke dispersal strategy, where reliance was placed on cross-ventilation of corridors, uninterrupted by cross-corridor doors. The cross-ventilation could be provided by manually opened vents, with either permanent vents or automatically opening vents operated by smoke detectors.

In particular, smoke dispersal using permanently open vents (PV) has been shown to be vulnerable to failure as a result of wind direction or being undermined by residents who block the permanent vents because of discomfort. It is no longer seen as an acceptable method of smoke control.

In blocks of flats designed with corridor smoke dispersal systems, consideration should be given to providing cross-corridor doors to change to a smoke containment approach, but maintain the OVs or PVs to ventilate the sections of corridor remaining. Advice from a specialist should be sought if smoke dispersal is present in a single stairway building.

Surface finishes in common escape routes

The surface finishes of walls and ceilings can significantly affect the rate of fire-spread and contribute to the development of a fire. It is important to control the fire performance of linings within the common areas. Combustible surface finishes should not be permitted in escape corridors, lobbies or stairways. Products and materials that will afford a 'Class 0' or European class B-s3, d2 performance are normally necessary for use in the common areas.

A wall or ceiling constructed of non-combustible materials, such as masonry, brick, concrete or has plaster finishes, will generally have an acceptable surface spread fire performance characteristic.

But it is often difficult to identify existing surface finishes.

Surface finishes normally considered acceptable may have been subject to many instances of over-painting and this can affect their performance when exposed to fire. Multiple layers of paint applied to walls and ceilings in the common areas over the years can give rise to rapid fire spread. In these situations, where the risk is considered significant, action should be taken to remove or treat the paint. Proprietary products are available that can be used to treat the surfaces to provide a protective outer coating that will reduce the extent of fire-spread.

Any false ceilings in common corridors and lobbies should preferably be non-combustible or, at least, Class 0.

## Fire-resisting doors

A Fire-resisting door assembly is one that has been independently certificated by a UKAS-accredited fire test laboratory as satisfying the test requirements for integrity and control of the passage of smoke at ambient temperature. Standards are contained in BS 476-22 and BS EN 1634 parts 1, 2 and 3. A modern fire-resisting door has intumescent strips and cold smoke seals fitted along its side and top edges or within the frame reveal. Any letterboxes are protected with intumescent material.

Doors protecting the common escape route between a flat and the escape stair, including flat entrance doors, are specified as minimum 60-minute fire-resisting self-closing doors (designated FD60S). Letter boxes would be of a type incorporating intumescent material which seals the opening when exposed to the heat from a fire.

Fire doors forming part of the stair enclosure should also be a minimum of 60-minute fire resisting and self-closing (designated FD60S).

Older doors would have complied with the test standard or specification of the day and may be 30-minute fire-resisting doors. They may lack intumescent strips and cold smoke seals, there may have been reliance on 25 mm door stops. Flat entrance doors may not have protected letterboxes. Where older doors were self-closing, this was sometimes achieved by using rising butt hinges.

Many of these older doors may have performed satisfactorily in a fire situation and are likely to continue to do so, providing they remain in good condition and are maintained as such.

Existing doors should not be replaced simply because they are not fitted with intumescent strips or smoke seals, or fail to meet some other requirement of current standards. It will normally be acceptable, taking into account the fire risk, to accept existing fire-resisting doors and not replace the doors as a matter of course. But it may be appropriate to consider the replacement of doors at the time of any refurbishment work.

Upgrading existing letterboxes in flat entrance doors to meet current standards is not always necessary and will depend on the location of the flat within the block, and the construction of the letterbox.



Fire-resisting flat entrance doors, and doors provided to protect common corridors, lobbies and stairways, should always be fitted with suitable positive action self-closing devices. The self-closing device should be capable of closing the door in its frame from any angle and overcoming the resistance of any latch. Rising butt hinges (see figure 5) are unreliable and should not be used. The fitting of suitable self-closing devices – whether to replace rising butt hinges or because the doors are not fitted with self-closing devices – should be a matter of priority.

Figure 5 Rising butt hinge

Three options exist in relation to original fire-resisting doors that do not meet current standards. These are:

- accept the door as it is, provided it is a good fit in its frame, is in good condition, and that it satisfied the standard applicable to fire-resisting doors at the time of construction of the building
- upgrade the door by fitting intumescent strips and smoke seals along the edges, and in the case of flat doors, fitting a protected letter box
- replace the door with a new FD60S door

However, any flat door that opens directly onto a single stairway should always be FD60S.

A flat entry door on an external balcony or deck access does not require a fire-resisting letterbox.

Where a fire-resisting flat entrance door has been inappropriately replaced with a non-fire-resisting type by a resident, the non-fire-resisting door should be replaced with a new FD60S door.

## Flat internal arrangements

In older blocks where flats open directly onto stairways, the protection of the internal hallway may have been a safeguard for the communal escape route. Living room and

kitchen doors may be solid fire doors, closing onto a 25 mm rebate and self-closing, while bedroom doors are often hollow core domestic doors, without any substantial doorstep.

It is not uncommon to find that some residents have either changed internal fire doors to non-fire-resisting doors or have removed doors or partitions altogether.

Where flats open directly onto stairways with no protected corridor or lobby, and where the provision of common lobbies is not a realistic proposition, the introduction of automatic suppression in these flats would be an appropriate approach.

## Fire safety signs

Blocks with a single staircase would not usually require any fire exit signage. In blocks, where there are alternative exit routes or where there is any potential for confusion, fire exit signage may be required.

In general, 'Fire Door Keep Locked Shut' signs should be provided on the following fire-resisting doors:

- the external face of doors to store rooms
- electrical equipment cupboards
- any ancillary rooms located within the common areas

'Fire Door Keep Shut' signs should be provided on both faces of fire-resisting doors forming part of the protection to the common escape routes and on cross-corridor fire doors, but not to flat entrance doors. In the case of fire doors that are held open, and release on operation of smoke detectors (unusual in high rise blocks), the signs should read 'Automatic Fire Door Keep Clear'.

New safety signs should comply with BS EN ISO 7010.

## Lighting on escape routes

Adequate artificial lighting and emergency escape lighting should be provided in common escape routes, such as corridors, lobbies and stairways, to enable safe use.

Emergency escape lighting should conform to the recommendations and requirements of the relevant parts of BS 5266. It should provide illumination for three hours in the event of power failure.

One or more test switches should be provided, so that the emergency escape lighting can be tested by simulating failure of the normal power supply to the luminaires without the need to isolate normal lighting circuits.

The likelihood of loss of normal lighting within escape routes, as a result of fire, at a time when residents may need to use the escape routes, is very low. Therefore, the provision of emergency escape lighting, might be a lower priority than other improvements, such as fitting self-closing devices on doors.

## Refuse and chute rooms

Chute room access should be directly from the open air or by way of a protected lobby with permanent ventilation, and should be separated from other parts of the building by at least 60-minute fire-resisting construction.

Where chute rooms are within stairways or corridors they should be enclosed in fire resisting construction and have permanent ventilation direct to open air, designed such that the ventilation will not prejudice any escape route in the event of fire.

Refuse chutes and access hatches which open directly onto protected corridors, lobbies and stairs provide the potential for the spread of fire and smoke to the common escape routes. In these situations, an automatic fire-resisting shutter should be fitted at the base of the refuse chute to restrict the spread of fire and smoke from a fire in the bin room. The shutter should be operated on a fixed temperature fusible link. The provision of a suppression system located over the bins should be considered where access hatches open into protected stairways or lobbies serving flat entrance doors.

## Fire detection and alarm systems

Within flats

Individual flats should have an early warning of fire provided by means of smoke and heat alarms.

The benchmarks in this part take account of the proposed introduction of a new tolerable standard, which will apply to all tenure of housing, and which is proposed for introduction in February 2021.

Smoke and heat alarms should be installed in accordance with BS 5839-6, and located in the following areas:

- one smoke alarm in the circulation space (on each storey in the case of maisonettes)
- one smoke alarm in the living room
- one heat alarm in the kitchen

Alarms should either be mains-powered and with an integral stand-by supply, or should be powered by tamper-proof long-life lithium battery. They should be ceiling mounted and interconnected to maximise the audibility of the fire alarm signal. As well as models that are interlinked by wiring, radio linked smoke alarms are available. It is preferable that smoke alarms incorporate an alarm silence control, so that false alarms do not cause unnecessary or prolonged disruption to residents.

Generally, any new smoke alarms installed within flats should be of the optical type. These are less prone to false alarms from kitchens, and they respond better to slow smouldering fires. If in a circulation area and close to a bathroom or shower room, a multi-sensor type should be used.

Where an occupant of a flat is deaf and is likely to be alone at any time within a flat, smoke alarm equipment complying with BS 5446-3 should be used. These incorporate

one or more flashing beacons, to alert when awake, and vibrating pads to wake when asleep. A vibrating pager can be incorporated in addition.

Existing smoke alarms may fail to meet benchmarks in a number of areas. They may be ionisation chamber type, removable-battery operated, mains only with no stand-by supply, and will often be only provided in circulation areas, and not be interconnected.

When any major electrical wiring takes place in flats, smoke alarms with accessible batteries (and mains-operated smoke alarms without a standby supply) should be replaced with alarms that meet current benchmarks. Notwithstanding this status as a recommendation, the proposed introduction of a new tolerable standard may make this provision mandatory.

Within the common areas

There is no requirement to install a communal fire alarm system in high rise flats under the Building Regulations. Fire detection and alarm systems are not normally provided in the common areas of high rise blocks. That has been the benchmark for many years.

It is undesirable to provide a communal fire alarm system. And domestic smoke alarms are not appropriate for the common areas of blocks of flats.

However, there may be circumstances in which it might be justified to consider the installation of a communal fire alarm system (see paragraphs 38 and 39).

While there is normally no need for a communal fire alarm system, smoke detectors may be installed to automatically operate smoke vents serving the common areas. No fire alarm sounders should be connected to these detectors.

## Portable fire extinguishing equipment

Any proposal for the unusual provision of fire extinguishing appliances, or continued presence of existing equipment, should be accompanied by a full justification to be included in a completed Fire Risk Assessment.

This does not preclude residents in any block of flats from providing their own equipment, such as fire blankets or fire extinguishers to tackle a fire in their own flat should they wish to do so.

## Locks and access systems

Ideally, any locks fitted to flat entrance doors and alternative exit doors from flats should be easily operable by the residents from the inside without the use of a removable key.

As flat entrance doors are required to be self-closing, there is a risk that any self-locking security devices fitted to the doors could accidentally lock residents outside their own flats. As well as being a general nuisance for residents who may leave their keys inside the flat, there is a risk during a fire if residents leave their flat and dependent

family members remain inside the flat. Therefore, flat entrance doors should, where possible, be fitted with a suitable lock that can only be locked on the outside by the use of a key operated deadlock, but can still be opened from the inside by a handle or lever without the use of a key.

Residents may fit additional locks, and, in some cases, security grilles and gates to entrance doors and secondary exits. Residents should be advised of the risks these may present to their safety in the event of a fire within their own flat. Any security locks, grilles or gates should be easily openable without the use of a key at all times. The fitting of these should not impair the effective self-closing of flat entrance doors.

External grilles or gates should not be used where they present a risk to the individual residents, impinge on the safety of others, or pose difficulty for the fire and rescue service.

All final exit doors from the building should be easily openable from the inside without the use of a key or code. A simple turn handle or lever is preferred. Any exits fitted with electronic locking mechanisms must fail-safe on power failure and have a standby power supply. In some situations, it might be necessary to consider the provision of override controls in accordance with BS 7273-4.

When void flats are secured, it is important that the flat entrance door remains of a type that is fire-resisting and self-closing.

## Facilities and assistance for firefighters

### Fire-fighting facilities

Fire-fighting facilities are provided in high rise blocks to assist the fire and rescue service. The current design guidance for fire-fighting facilities is:

- Provision of a fire-fighting shaft, consisting of a fire-fighting stairway (at least 1 m wide) with fire-fighting lobbies (at least 5 m<sup>2</sup>); a fire main; and a fire-fighting lift.
- The fire-fighting shaft should have an overall enclosing structure at least 120-minutes fire resistance. Self-closing fire doors in the enclosing structure should be at least 60-minutes fire resistance.
- A fire-fighting lobby is not needed where access to the flats is from an open access balcony.
- An escape stair can also be a fire-fighting stair if it meets the relevant criteria.
- A wall separating a fire-fighting stair from a fire-fighting lobby should have at least 60-minutes fire resistance and the self-closing fire door should have at least a 30-minutes fire resistance.
- The fire-fighting lift allows firefighters to take control. It should be located within a protected area and be constructed within its own compartment having at least 60-minutes fire resistance. The lift landing doors need only achieve 30-minutes fire resistance. The fire-fighting lift should only be entered from a fire-fighting lobby with not more than one door to the room or storey it serves, or an open access balcony.
- Ventilation should be provided to every escape stair, fire-fighting stair, fire-fighting lobby and to every protected lobby. A natural or mechanical smoke ventilation

system used to protect the means of escape may be used to satisfy the requirement for ventilation for fire-fighting.

- Ventilators should be fitted with a simple handle or lock that can be easily operated by firefighters including where automatic opening ventilators are provided. If ventilators are not easily accessible they should be operated by a mechanism positioned within the building at the fire and rescue service access point. In the case of an escape stair and fire-fighting stair, a local control should also be provided at the topmost storey.
- Ventilation to every escape stair and every fire-fighting stair should be by:
  - a ventilator of at least 1 m<sup>2</sup> at the top of the stair, or
  - a ventilator of at least 0.5 m<sup>2</sup> at each storey on an external wall, or
  - smoke shafts.
- Ventilation in protected lobbies, protected corridors and fire-fighting lobbies should be by:
  - a ventilator of at least 1.5 m<sup>2</sup> at each storey on an external wall, or
  - smoke shafts.
- Fire mains with outlets located in a protected lobby, protected corridor or open access balcony. If the block has a storey above 50 m height, the fire main should be a wet main (the threshold for a wet rising main in previous guidance was 60 m). No point on the storey should be more than 45 m from the fire main outlet. If the building is fitted with an automatic fire suppression system, no point on the storey should be more than 60 m from the outlet.
- A parking space for a fire appliance located no farther than 18 m from each fire main inlet.

Figures 6 and 7 show typical floor arrangements with firefighting facilities. Figure 8 shows fire resistance rating.

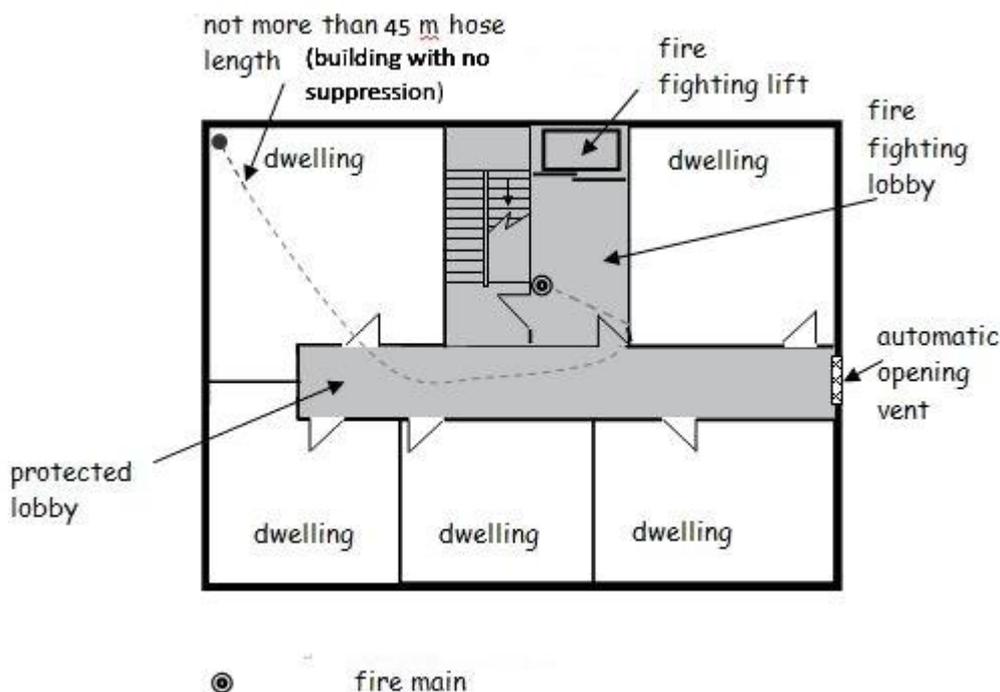


Figure 6 Ground floor arrangement showing firefighting facilities where single stair

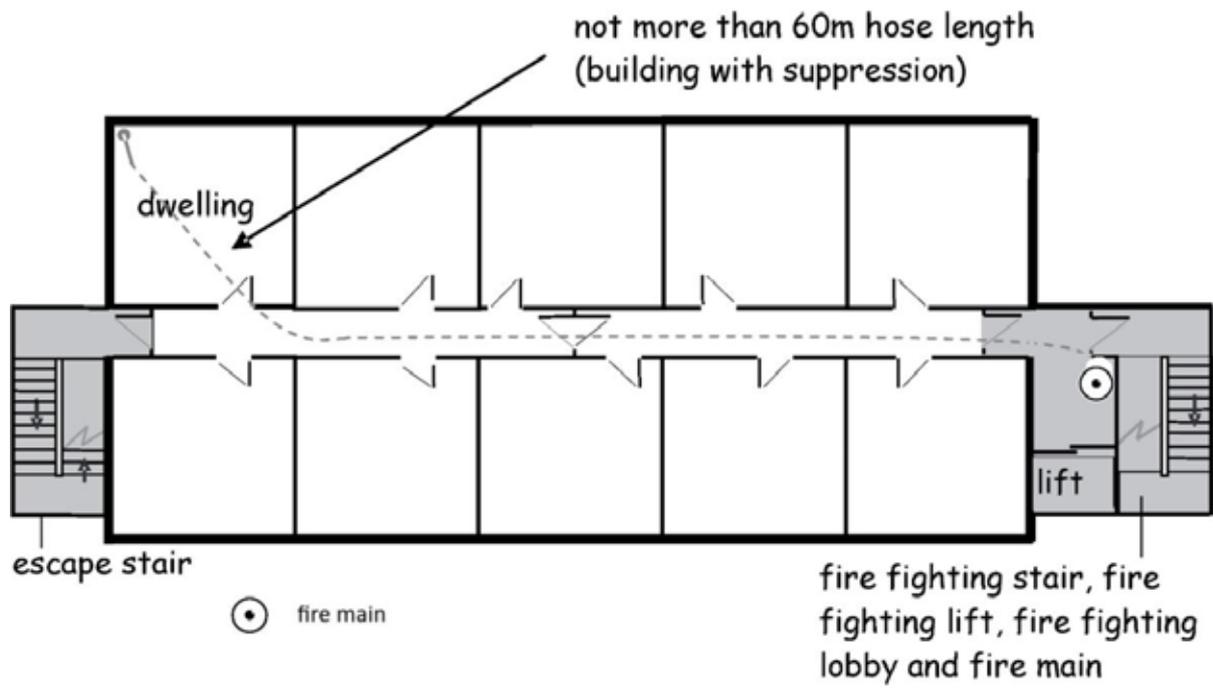


Figure 7 Upper floor arrangement showing firefighting facilities where two stairs

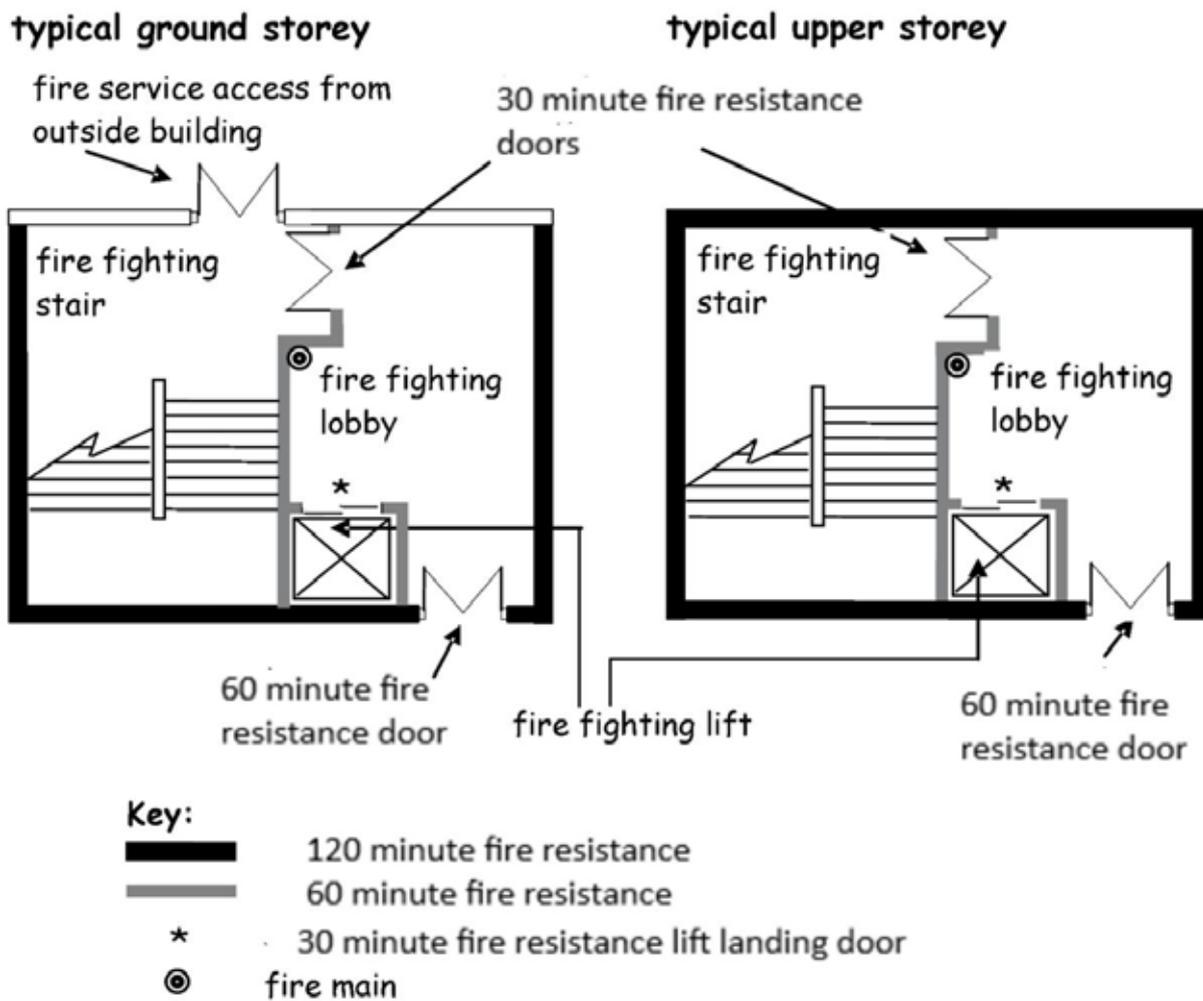


Figure 8 Fire-fighting shaft arrangement showing fire resistance ratings

The facilities provided to assist firefighters should, at least, meet the standard of the day when the block was built and should be maintained in efficient working order. Where the fire-fighting facilities are not in accordance with current standards, the advice of the fire and rescue service may be needed. It may not be possible, or even appropriate, to consider upgrades to meet current benchmarks.

#### Entrapment risk

The entrapment of firefighters in cabling that has fallen or become displaced due to exposure to heat is well documented and has been a contributory fact in firefighter injury and fatalities. Such entanglement is often the result of installation (securing) of cabling using plastic products or fastenings. The most common seen in high rise domestic buildings is plastic trunking or conduit and underslung cable trays secured with plastic cable ties.

Most common plastics will fail at an early stage in a fire and can leave what has been described as a 'spiders web' hanging to ensnare firefighters. Firefighters often work in a reduced or zero visibility and they wear complex and restrictive clothing and breathing apparatus that often compounds the problem.

Modern standards require cabling to be secured in a way that avoids premature collapse in a fire.

#### Information

A standard external plate should be displayed for the assistance of the SFRS. These plates display relevant information on the layout of the building and its services and firefighting facilities. This can be helpful to the service at the time of an incident.



Figure 9 High rise external information plates

Firefighters tackling a fire in a high rise block will access the fire via the stairs – even where part of the journey may be via the fire-fighting lift. To assist the SFRS, floor levels and flats should be clearly numbered so that firefighters can identify floor levels and flats in a fire situation.

While the SFRS may wish to hold relevant information in its own risk database on the provision and operation of smoke control systems, nevertheless there should be information displayed at the building control panel which explains system operation.

## External fire-spread

The external facades of high rise flats should not provide potential for fire spread. When assessing existing blocks of flats, particular attention should be given to any rain-screen or other external cladding system that has been applied, to facades that have been replaced, and to balcony infills.

The use of combustible cladding materials and extensive cavities can present a risk, in high-rise blocks. Restrictions are normally applied to the nature of such materials and in particular their fire propagation and surface spread of flame characteristics. Cavity barriers are also required. Since May 2005, building regulations have required external wall cladding to be non-combustible or meet the test performance specified in BR 135. Before May 2005, external cladding required to meet a class 0 surface spread of flame classification.

Assistance from specialists may be required to determine if the construction and materials used are satisfactory and whether there is adequate provision of cavity barriers. After the Grenfell Tower fire, information is being gathered on the rain screen cladding and insulation material used for external cladding of high rise blocks in Scotland and in some cases intrusive physical examination has taken place to determine the as-built construction.

## Chapter 6: Risk management – ongoing control

Chapter 6 covers the responsibility for fire safety within the building and proposes basic fire safety messages that can be delivered when engaging with residents. There are important reminders of controlling building work and alterations (including residents DIY) and ongoing inspection, testing and maintenance of fire safety systems and equipment.

### Key points

Arrangements for managing fire safety in a block of flats should include the following:

- developing a fire policy and appointing someone in the organisation to take overall responsibility for fire safety
- using residents' handbooks and other media to engage with residents and communicate fire safety information, and to have a channel for receiving concerns from residents
- providing generic training to ensure housing officers and others visiting blocks of flats have fire safety awareness
- preparing fire procedures and making everyone aware of them

- managing the risk from building works, including adopting a 'hot work' permit system
- putting in place programmes for routine inspection, testing, servicing and maintenance of fire safety measures and systems
- monitoring the internal common areas and external areas through formal inspections, and as part of day-to-day activities by staff
- carrying out fire risk assessment reviews
- liaising with the fire and rescue service and encouraging residents to take up the offer of home safety visits

## Responsibility for fire safety in the building

Those who manage fire safety in blocks of flats can include owners, housing providers and managing agents. This includes social landlords, such as local authorities and housing associations and factors operating on behalf of residents.

All organisations should formalise the roles and responsibilities of those contributing to the management of fire safety. This should form part of a fire safety policy.

Although there will not necessarily be anyone on site to manage fire safety on a day by- day basis, it is important that there is someone within the organisation who has overall responsibility for fire safety. It is common in larger organisations for this to be split. For example, estates maintenance teams may be responsible for repairs and routine testing and inspection of fire safety measures, with the letting department responsible for ensuring that residents understand the conditions applying to alterations to their flats and have received fire safety information on taking up occupation. Housing officers may be responsible for routine inspections of fire safety.

Where responsibility is shared, someone should have overall control and authority to ensure that activities are coordinated.

Where there are commercial occupiers in the building, there should be coordination and cooperation on fire safety issues, between all parties.

## Engaging with residents

Residents have their part to play in fire safety. In addition to communicating the fire prevention message (see chapter 4), it is important to engage with residents, to explain the fundamentals of fire safety in the building and how they can contribute to its effectiveness.

Those managing blocks of flats should seek to engage with residents and communicate basic fire safety messages, including:

- how residents can prevent fires in their own home and in the common areas
- the importance of maintaining their block secure (making sure doors close behind them when they enter or leave)

- that they should never store or use petrol, bottled gas, paraffin heaters or other flammable materials in their flats, on their balcony or in shared areas
- what action they should take if they discover a fire
- what 'stay put' means if there is a fire elsewhere in the building
- the importance of the self-closing and fire resistance functions of their flat entry door
- what they must do to safeguard communal escape routes, especially taking care to make sure fire doors self-close properly and are not wedged, tied or otherwise held open
- what the policy on the use of common areas requires of them
- how to test their smoke alarms and how often they should do it
- how to report repairs needed to fire safety measures and how to raise other safety concerns
- how to raise fire safety concerns

A residents' handbook is traditionally one way to communicate basic fire safety advice to new residents in rented accommodation. Specifically targeted campaigns of leafleting and other initiatives to promote fire safety may be necessary to keep messages fresh in people's minds. Appendix 1 contains basic advice to include when communicating with residents.

Basic fire action notices are usually the simplest means of conveying to residents the actions they should take in the event of a fire. Appendix 2 contains a simple fire action notice applicable where a 'stay put' policy applies. The needs of non-English-speaking residents should be taken into account.

## Instruction and information for non-residents

Caretakers, housing officers and others working in, or visiting, blocks of flats need to have awareness of the fire safety measures in the building and the procedures in the event of fire.

Additional training may be required where in-house staff monitor fire safety as part of routine visits and inspections. Those tasked with carrying out and/or reviewing fire risk assessments will need appropriate training.

## Preparing for emergencies

There should be a suitable emergency plan for the premises. Rarely, in high rise blocks of flats, will it be necessary to have a more elaborate emergency plan than a simple fire action notice (see Appendix 2 for example).

If a fire action notice is to be displayed, it would be good practice to place it in a location where it will be viewed routinely by people entering the building such as by the main entrance or by the controls inside a lift.

Fire action notices must be relevant to the building. Most commercially available fire action notices are likely to be totally inappropriate.

While fire drills and practice evacuations are used in many commercial buildings, it is neither practical nor necessary to carry them out in high rise flats. Even in blocks with communal fire alarm systems, it is unrealistic.

In blocks of flats, resident's physical and mental ability will vary. It is usually unrealistic to expect landlords and other agents to plan for this or to have in place special arrangements.

## Controlling building work and alterations

Processes should be in place to scrutinise alterations and building work within common areas that could have an effect on fire safety in the block. Building Regulation approval should be obtained where relevant.

During building and engineering works involving alterations or repairs, there is the potential, for fires to start or to impair fire safety measures. Examples of impairments to fire safety measures that can arise from building works include:

- making holes in separating walls and floors
- removing stairway doors to allow free access for delivering materials
- parking over fire hydrants
- placing site huts too close to the building
- leaving gas cylinders inside the building overnight to avoid having to store them properly away from the building
- blocking access to a fire main inlet
- leaving combustible building materials in common areas
- opening up parts of the structure without providing suitable fire-resisting hoarding to separate work areas from occupied areas

Landlords and other agents should place strict obligations on those undertaking works to implement appropriate precautions when carrying out works and to avoid issues arising. Incorporating conditions within contracts is one common means of achieving this, but this should be reinforced by scrutiny of method statements and by checks during the course of the works.

Control is often applied to major projects, but less so in the case of small works and maintenance. However, the latter may still involve the potential to create difficulties.

Control should be exercised over 'hot work'. Usually, this is achieved by adopting a 'permit to work' system. This places obligations on those carrying out the work to inspect the areas in which work is taking place – both before and after the work – and to take all necessary precautions, including the temporary provision of fire extinguishers.

Advice on fire safety during construction work is available from the Health and Safety Executive (HSE) and the Fire Protection Association (FPA).

Problems can also arise during minor work that residents themselves might undertake.

Examples of alterations which could be detrimental to fire safety:

- a resident changing their flat entrance door to one that is not fire-resisting and self-closing
- a resident installing a new bathroom suite, but not ensuring that breaches of riser walls created for new drains are fire-stopped afterwards to maintain fire separation to the common riser
- a utility company installing new gas supplies to flats and creating the necessary ventilation to gas meters by unprotected openings into common corridors and stairways (figure 10)
- a landlord replacing smoke vent windows with sealed units
- a contractor installing a new false ceiling without transfer grilles to allow smoke to reach existing permanent vents



Figure 10 breach of fire-resisting enclosure

## Inspection, testing and maintenance of fire safety systems and equipment

The physical fire safety measures provided in blocks of flats to ensure a suitable standard of safety, will only be as good as their management and maintenance. Fire safety systems and equipment need to be maintained in effective working order. It is therefore necessary to have in place arrangements for routine inspection, testing, servicing and maintenance.

Some of the inspection and testing can be carried out by in-house staff, provided they are competent to do so. Other work should be carried out by contractors. These contractors should be competent. Various third party certification and approval schemes are available that provide confidence that listed companies have been assessed in relation to their capability against a recognised standard.

Where systems are tested by in-house staff or other non-specialists, there should be access to a suitable contractor through a call-out arrangement in case deficiencies identified through the testing need to be repaired.

It is good practice to keep records that show that inspection, testing and maintenance has been carried out.

The following information details basic requirements for routine attention in relation to fire safety systems.

### Emergency escape lighting

Unless the emergency lighting is of the self-testing type, test each fitting periodically. In most cases, the testing comprises:

A monthly functional test using a suitable test facility to check that the fitting has not failed. This is a simple test that can easily be undertaken in-house.  
A full duration discharge test once a year to confirm that the batteries are still capable of supplying the fitting for its duration. (Care should be taken not to leave a building entirely without escape lighting while batteries recharge after a test).

Further guidance on testing and servicing emergency escape lighting systems can be found in BS 5266-8.

### Smoke ventilation

AOVs and electrically operated OVs should be tested once a month for correct operation using the manual controls provided. This is a simple test that can be undertaken by non-specialists.

Testing smoke detectors and controls associated with AOVs should take place at least once a year, and in accordance with the manufacturer's instructions.

Other systems of smoke control – including smoke extract systems and pressurisation systems – should be tested and serviced periodically in accordance with the manufacturer's instructions. This will normally be at least annually, but may involve monthly or more frequent functional tests where the systems are intended to protect the means of escape. It is important that those servicing such systems are familiar with the performance parameters used in the design of the system.

Further guidance on testing and servicing of smoke control systems can be found in BS 9999.

### Smoke and heat alarms in flats

Smoke alarms and other devices provided for early warning of fire within the flats themselves should be tested monthly. It is usually the responsibility of residents to test their smoke alarms.

Landlords should use opportunities that arise to check on the general condition of smoke alarms they have provided. For example, anyone needing to visit a flat can easily check for signs that a tenant has interfered with or disabled a smoke alarm. In addition, a test of a smoke alarm could be carried out by any contractor undertaking a routine visit to carry out a repair or, for example, during annual gas safety checks.

Further guidance on testing smoke alarms can be found in BS 5839-6.

#### Fire dampers

Fire dampers in communal ductwork or rubbish chutes, should be subject to inspection and test periodically to ensure that they are functioning. This should be undertaken at least once every two years for those operated by fusible links and every year for those that are spring operated. Guidance on testing of fire dampers can be found in BS 9999.

#### Automatic fire suppression systems

Sprinkler systems and water mist systems should be inspected annually. It is unlikely that a landlord will have staff with appropriate specialist knowledge in-house. Contractors may need to be employed. Guidance on maintenance of domestic sprinkler systems can be found in BS 9251.

#### Fire mains

Fire mains should be inspected every six months and tested every 12 months. Inspections largely involve checks to confirm that the outlets are not damaged and padlocks and straps on the landing valves are still in place. This could readily be carried out in-house. Testing involves pressurising the main, and will require a specialist contractor.

Guidance on testing and maintenance of fire mains can be found in BS 9990.

#### Fire-fighting lifts

Lifts used for fire-fighting need to be subject to tests and maintenance on a regular basis. This will involve weekly operation of override switches and monthly inspections and annual testing and maintenance of the lifts. Guidance on testing and servicing of fire-fighting lifts can be found in BS 9999.

#### Fire-resisting doors

Fire-resisting doorsets should be inspected every six months to identify defects such as:

- missing or ineffective self-closing devices
- damaged or missing intumescent strips and smoke seals
- damaged doors or frames
- poorly fitting doors caused by distortion, shrinkage, or wear and tear
- newly fitted, inappropriate, door furniture
- doors that have been replaced using non-fire-resisting types

Flat entrance doors should be included within this programme to the extent possible.

Further advice on routine inspection and maintenance of fire-resisting doors can be found in BS 8214.

## Fire-resisting construction

Damage to walls or signs of unauthorised work – including DIY by residents – are likely to be obvious if within the common corridors, lobbies and stairways. Fire safety checks offer opportunities to inspect other areas such as riser cupboards, plant rooms and so forth.

Other opportunities, such as when flats become vacant or change tenancy, should be used to inspect the condition of fire separation.

### smoke vents

Windows and other non-electrical means provided for venting smoke should be opened on a regular basis, perhaps at least once a year, to ensure they open freely.

## Checking fire safety standards

While as previously described, the fire risk assessment process involves a review process. It is good practice to additionally undertake regular inspections as part of demonstrating due diligence in the management of housing stock.

A fire safety inspection of a block of flats is a common means of identifying issues relating to fire prevention and maintenance of fire safety measures. The extent to which fire safety inspections need to be carried out will vary. It depends on how successfully standards are being maintained. Frequent inspections are likely to be necessary in blocks where there are particular concerns about anti-social behaviour and a consequent threat of fire raising, or where a 'managed use' policy applies to the common areas.

- monitor housekeeping in common areas and check for infringements of the policy on the use of the common areas
- doors to residents' store rooms, electrical cupboards, plant rooms, bin stores and other ancillary rooms are not being left or held open
- entrance and exit doors are closing properly
- there are no signs of damage to fire-resisting walls, doors and glazing
- smoke control vents have not been tampered with or obstructed
- fire exit signs (if fitted) or fire action notices are not missing or defaced
- fire detectors are still in place and have not been damaged, covered over or interfered with
- fire main outlets are not damaged or obstructed
- entrance doors are closing effectively and security lights are working
- plant rooms and electrical cupboards are locked shut and bin rooms are secure
- there are no materials sited or vehicles parked, close to the external facade

Table 2 Checklist - fire safety inspection

Day-to-day activities that take place in a block of flats also provide opportunity to monitor fire safety in the common areas. Ensuring that housing officers, repair teams,

cleaners and any other staff or regular contractors are aware of what to look out for can significantly impact on the standard in a particular building.

## Being alert to the possibility of improving fire safety standards

When alterations and improvements to a block of flats are planned this can provide an opportunity to upgrade the fire safety measures. For example, when lift replacement becomes necessary, specifying that a fireman's lift complying with an old standard, be upgraded to current fire-fighting lift standard, particularly in relation to power supplies, will improve the protection afforded to fire-fighters.

Where a block of flats is due for extensive refurbishment, careful consideration should be made when deciding what safety features should be upgraded.

## Liaising with the Scottish Fire and Rescue Service

The SFRS undertakes visits to high-rise blocks to obtain information so that operational crews can become familiar with the features of the building, including access, availability of water for fire-fighting, and fire-fighting facilities such as fire-fighting lifts and fire mains.

Whether a particular block of flats needs to be visited is a matter for the discretion of the SFRS. Landlords and others with responsibility for the blocks should welcome such visits, as pre-planning for an emergency in that way can be invaluable.

The SFRS may also carry out an enforcement visit to check on the obligations to maintain the property and maintain the facilities for firefighters.

Home safety visits are a key component of the SFRS's community safety engagement and are available to residents of any dwelling. Landlords and agents could draw this to the attention of residents, particularly those who are known to need specific assistance in respect of fire safety.

## Chapter 7: The law on fire safety

Chapter 7 gives an overview of the legislation in place in relation to Building Regulations, the Fire (Scotland) Act 2005 and the Civic Government (Scotland) Act 1982.

### Building Regulations

The Building Regulations apply to new building work, such as the erection of a new block of flats, extension of an existing block, buildings being converted to flats or alterations to the building. They impose requirements in respect of various fire safety measures including means of escape, structural fire precautions, smoke control, automatic fire suppression and facilities for the fire and rescue service.

It is important to understand the relevance of the Building Regulations to alterations. Inappropriate and unauthorised alterations can undermine the measures provided to ensure safety of occupants from fire.

Any proposal to carry out alterations – such as to means of escape, automatic suppression, smoke control arrangements, structural alterations or alterations to facilities for the fire and rescue service – should be submitted to building standards verifiers to determine if approval is necessary (and, if so, to obtain approval of the proposals) under the Building Regulations.

Unapproved minor alterations and building works can often result in a contravention of the Building Regulations, which is an offence. The replacement of a self-closing, fire-resisting flat entrance door by a non-fire-resisting door or by a door that is not self-closing is a common contravention. This may place other residents at risk if a fire occurs in the flat in question.

There is no requirement under the building regulations to upgrade existing fire safety measures to current standards. However, existing non-compliances with the current Building Regulations must not be made any worse in the course of alterations or building works.

Powers exist under the Building (Scotland) Act 2003 to require unauthorised alterations to be rectified if the work breaches the building regulations.

Anyone in doubt about the application of building regulations should contact the local authority building standards.

## Housing (Scotland) Acts

At the time of writing, the Housing (Scotland) Act 2006 requires that private rented housing must have satisfactory provision for detecting fires and for giving warning in the event of fire or suspected fire. That standard is satisfied if there are mains-wired and interlinked smoke alarms in halls, living room and a heat alarm in the kitchen. However, it is proposed to introduce a change in 2021 which will replace this requirement. The proposed change is taken into account in the benchmarks in chapter 6.

The Housing (Scotland) Act 2006 also requires inspection and testing of electrical installations in private rented housing.

The Housing (Scotland) Act 2010 makes provision for a Scottish Social Housing Charter which sets out standards and outcomes that social landlords should aim to achieve when performing housing activities. The Charter includes a duty to ensure compliance with the Scottish Housing Quality Standard. The quality standard includes requirement for at least one smoke alarm in any social rented property and for thumb-turn locks to allow escape in event of fire. The Scottish Housing Regulator has power to intervene in relation to the Scottish Social Housing Charter. Again, the proposed changes will supersede this alarm provision standard.

## Fire (Scotland) Act 2005

Part 3 of this Act is the legislation which applies to fire safety in non-domestic premises. However it does not generally apply to individual flats, or to the common areas of blocks of flats. However, the Act may apply to some parts of a high rise building, including those listed in paragraph 13.

The Fire Safety (Scotland) Regulations 2006 apply to non-domestic premises in tandem with Part 3 and also generally do not apply to individual flats, or to the common areas of blocks of flats. However one provision of the regulations does apply to the common areas of high rise blocks. This is the requirement to ensure that the common areas and any facilities, equipment and devices provided for the use by or protection of fire-fighters, are maintained in an efficient state. This provision is imposed on the persons who have control of the common areas (dutyholders).

The SFRS may inspect premises to audit compliance with the specific provision. If the SFRS identifies a breach, it may notify the dutyholder(s) of steps to be taken to remedy the breach. If not resolved it may issue an enforcement notice.

Any person who fails to comply with an enforcement notice from the SFRS is guilty of an offence. A person on whom an enforcement notice is served has the right of appeal to the Court for 21 days after service of the notice. Alternatively, if the dutyholder and the SFRS cannot agree on the measures necessary, either party may refer the matter for a determination by the Chief Inspector of the Fire Service Inspectorate.

## The Civic Government (Scotland) Act 1982

Section 93 of this Act requires occupiers to keep common property free of combustible substances and anything which might obstruct egress from and access to the property in the event of fire.

The SFRS has power to enter the common property to determine if the duty is being complied with, and if it is not and there is an immediate risk of fire likely to endanger life, to do anything necessary to remove that risk including seizing and retention of items. The SFRS can recover from occupiers the expense of removing items or substances from common property. The SFRS can issue notices requiring occupiers to remove or render safe items or substances in common property. Any person who fails to comply with a notice from the SFRS is guilty of an offence.

## Appendix 1

### Example of fire safety advice for residents

Fire Safety Advice to protect you and your household

Working smoke and heat alarms will protect your home and family from fire. These alarms can provide an early warning of a fire and allow you to make your escape – but only if they are working. You are more likely to die in a fire if you do not have a working smoke and heat alarms.

Under new guidance from the Scottish Government (amendment to *the Housing (Scotland) Act 1987*) your property is required to have the following level of detection:

- at least one smoke alarm installed in the room most frequently used for general daytime living purposes,
- at least one smoke alarm in every circulation space on each storey, such as hallways and landings,
- at least one heat alarm installed in every kitchen,
- all alarms should be ceiling mounted, and all alarms should be interlinked.

More information on the changes to legislation can be found at the following [link](#).

You can prevent fire from happening by taking a few simple steps:

- don't leave cooking unattended, and avoid leaving children in the kitchen alone with cooking on the hob
- be vigilant when cooking with oil - don't overfill chip pans and never throw water on a chip pan fire
- take extra care when drinking alcohol - don't cook, and if you feel sleepy don't smoke in your chair, go outside
- make sure cigarettes are put out properly - use an ashtray - don't smoke in bed
- don't overload electrical sockets
- turn off appliances when not in use - don't leave them on standby
- keep matches and lighters out of reach and sight of children
- avoid the use of candles - if you must use them, make sure candles are secured in a holder and away from materials that may catch fire, like curtains - children must never be left alone with lit candles

Keep safe and plan your escape

Your flat is in a building designed to be fire-resisting, the flat entry door has fire-resistance and is fitted with a self-closing device. It is important that the self-closer works correctly, a fire should not spread from one flat to another.

You need not leave your home if there is a fire elsewhere in the block. Though, if in doubt, get out.

Always leave your flat if it is affected by smoke or heat or if told to by the Fire Service. Your stairway is designed to be safe for escape throughout the course of a fire. Always use the stairway to descend to ground level if escaping, do not use the lift.

Do not leave your belongings or rubbish in corridors, the lift lobby or the stairway

This could affect you and your neighbours if there was a fire.

If you are in a corridor, lift lobby or stairway and you notice a fire, leave the building immediately and, if safe to do so, alert other residents in the immediate vicinity on your way out (knock on their doors). And call the Fire Service.

Do not put yourself at risk - do not return to your flat until it is safe to do so

Remember:

- test your smoke alarms and heat alarms once a week
- keep the exit route from your flat clear so you can escape in an emergency
- close doors at night, especially the doors to the lounge and kitchen to prevent fire spreading
- plan your escape now - be prepared and don't wait until it happens.

## Appendix 2

### Example of fire action notice

For use in blocks with a 'stay put' policy

#### Fire Action

##### If Fire Breaks Out In Your Home:

- Leave the room where the fire is straight away, then close the door
- Tell everyone in your home and get them to leave - close the front door of your flat behind you
- Call the Fire Service
- Alert neighbours on the same floor if safe to do so
- Do not use the lift
- Wait outside, away from the building

##### If You See Or Hear Of A Fire In Another Part Of The Building:

- The building is designed to contain a fire in the flat where it starts - this means it will usually be safe for you to stay in your own flat if the fire is elsewhere
- You must leave immediately if smoke or heat affects your home, or if you are told to by the Fire Service
- If you are in any doubt, get out

##### To Call The Fire Service:

- Dial 999 or 112
- When the operator answers, ask for FIRE
- When the Fire Service replies give the address, if available provide the floor and flat position of where the fire is
- Do not end the call until the Fire Service has repeated the address correctly

## Appendix 3 - Fire Safety Risk Assessment Template

# Record of Fire Safety Risk Assessment in High Rise Domestic Buildings

Print Form

Address			
Postcode			
Name of organisation			
Name and contact details of Assessor			
Assessor signature		Date of assessment	

### PART 1 Obtain Information

How many floors does the building have?

Number of residents in the building? Are any residents particularly at risk? If yes, please detail below.

Is there a staff presence, such as a caretaker or a concierge? If yes, please detail below.

Yes

No

Does the building have any ancillary uses such as commercial or community activities? If yes, please detail below.

Yes

No

Has the building any previous history of fire? If yes, please detail below.

Yes

No

Has there been any previous examination of the building's external cladding? If yes, please detail below.

Yes

No

Is there a current procedure for residents to follow in the event of fire? If yes please append a copy and explain below how it is communicated to residents.	Yes	No

**PART 2 Identify any potential causes of fire in the common areas**

Are there any sources of ignition present?			
	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>

Are there any sources of fuel present?			
	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>

Are there any sources of oxygen present e.g. ventilation			
	Action required (Please tick) If you answered yes, record action at PART 5	YES	NO

**PART 3 Evaluate the risk and adequacy of existing fire safety measures**

What is the likelihood of a fire starting?			
	Action required (Please tick) If you answered yes, record action at PART 5	YES	NO

What may be the consequences to people from a fire starting in the building?			
	Action required (Please tick) If you answered yes, record action at PART 5	YES	NO

Is there the potential for fire to spread and affect escape routes?

Action required (Please tick)  
If you answered yes, record action at PART 5

**YES**

**NO**

Is there potential for fire or smoke spread through routes such as vertical shafts, service ducts, service penetrations, ventilation systems, cavities, voids and open doors?

Action required (Please tick)  
If you answered yes, record action at PART 5

**YES**

**NO**

Is there potential for fire and smoke to spread into the premises from an external fire?

Action required (Please tick)  
If you answered yes, record action at PART 5

**YES**

**NO**

Are the flat entrance doors sufficiently fire resisting and self-closing?  
 Please see Chapter 5: Risk management – physical fire safety measures from Fire safety in existing high rise domestic buildings for guidance

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	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>
		<input type="checkbox"/>	<input type="checkbox"/>

Is there protection of the stairways from fire in adjacent areas? i.e. Provision of properly maintained self-closing fire doors on stair and lobby enclosures, fire resisting glazing etc.

--	--	--	--

	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>
		<input type="checkbox"/>	<input type="checkbox"/>

Is the travel distance from flat entrance doors to the nearest stairway or final exit acceptable?  
 Please see Chapter 5: Risk management – physical fire safety measures from Fire safety in existing high rise domestic buildings for guidance

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	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>
		<input type="checkbox"/>	<input type="checkbox"/>

Is there emergency escape lighting provided and maintained? Is it required if not?

Action required (Please tick)  
If you answered yes, record action at PART 5

YES

NO

Are there fire escape route signs? Are they required if not?

Action required (Please tick)  
If you answered yes, record action at PART 5

YES

NO

Is there adequate fire separation evident, particularly the enclosure of flats within fire resisting construction?  
Please see Chapter 2: Fire safety design in high rise flats from Fire safety in existing high rise domestic buildings for guidance

Action required (Please tick)  
If you answered yes, record action at PART 5

YES

NO

Where provided, are fire mains, fire-fighting lifts and smoke ventilation systems properly maintained?

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	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>

Are there any fire suppression installations provided?

--	--	--	--

	Action required (Please tick) If you answered yes, record action at PART 5	<b>YES</b>	<b>NO</b>

**PART 4**

**Improvement plan (where required)**

Detail any improvements to fire safety measures which are considered necessary. Please also detail if the outcome is that there are no improvements necessary



Review the fire risk assessment if there is a reason to suspect it is no longer valid or if there has been a significant change in the matters to which it relates.

**Part 6** Record and review

Review Date		Reviewed by	
-------------	--	-------------	--

Reason for review

Outcomes of review



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## Glossary

Definitions to assist readers in understanding some of the technical terms used in this guidance. In some cases, the definitions relate specifically to this Guidance and may therefore differ from other definitions.

AOV (automatically opening vent)	A vent provided for smoke control in common areas, which opens automatically when smoke is detected by smoke detectors
Cavity barrier	A construction provided to close a concealed space against penetration of smoke or flame, or provided to restrict the movement of smoke or flame within such a space
Common areas	Those parts of a block of flats used by occupants of more than one flat for access and egress.
Emergency escape lighting	Lighting that provides illumination for the safety of people leaving the building when the normal lighting fails
Escape route	Route forming part of the means of escape from any point in a building to the final exit
Fire damper	Mechanical or intumescent device within a duct or ventilation opening, which is operated automatically in the event of fire, to prevent the passage of fire. (Where there is a need to prevent the passage of smoke, the fire damper needs to satisfy additional criteria.)
Fire-fighting lift	A lift, designed to have additional protection, with controls that enable it to be used under the direct control of the fire and rescue service
Fire-fighting shaft	A fire-resisting enclosure containing a fire-fighting stair, fire mains, fire-fighting lobbies and a fire-fighting lift
Fire main	A water supply pipe installed for fire-fighting purposes, fitted with landing valves at specific points. The main may be 'dry', in which case it is fitted with inlet connections so that it can be charged with water from a fire service pumping appliance. In taller blocks, the main is 'wet' and is permanently charged with water from a pressurised supply.
Fire resistance	The ability of a component or construction of a building to satisfy, for a stated period of time, some or all of the appropriate criteria of relevant fire test standards
Fire stopping	A seal provided to close an imperfection of fit or design tolerance between elements or components, to restrict the passage of fire and smoke

Fire-resisting door	A door which, with its frame and furniture, and when closed, is intended to restrict the passage of fire and smoke to a specified level of performance
Means of escape	A route or routes provided to ensure safe egress from the premises to a place of total safety
OV (Openable vent)	A vent provided for smoke control in the common areas, that can be opened by the fire and rescue service by means of hardware or a control (which may be located remotely) provided for the purpose
Protected corridor or lobby	A corridor or lobby that is protected from fire in adjoining accommodation by fire-resisting construction
Protected route	An escape route that is protected from the rest of the building by fire-resisting construction
PV (Permanent vent)	A permanently open vent provided for smoke control in the common areas
Self-closing device	A device that is capable of closing a door from any angle and against any latch fitted to the door
SFRS	Scottish Fire and Rescue Service
Simultaneous evacuation	A procedure in which all parts of a block of flats are evacuated after the actuation of a common alarm of fire
Smoke containment	A method of smoke control involving physical barriers to the spread of smoke, usually in combination with vents, primarily to prevent the passage of smoke into escape stairways
Smoke dispersal	A method of smoke control used in older blocks of flats (now deprecated). Vents are sited to achieve uninterrupted natural cross-ventilation of corridors and lobbies in an endeavour to dilute and disperse smoke in these areas
Spandrel panel	An external wall panel between window openings
Stay put	An evacuation strategy based on the principle that only the residents of the flat of fire origin need to escape initially, while other residents may remain in their own flats.
Travel distance	The distance to be travelled by a person from any point within a specified area, to the nearest exit leading to a place of relative safety

## Guidance documents

CP3 Chapter IV-1:1962 Code of basic data for the design of buildings. Precautions against fire. Fire precautions in flats and maisonettes over 80 ft in height (superseded)

CP3 Chapter IV-1: 1971 Code of basic data for the design of buildings. Precautions against fire. Flats and maisonettes (in blocks over two storeys) (superseded)

BS 5588-1:1990 Fire precautions in the design, construction and use of buildings. Code of practice for residential buildings (superseded)

BS 9991:2011 Fire safety in the design, management and use of residential buildings. Code of practice (superseded)

BS 9991: 2015 Fire safety in the design, management and use of residential buildings. Code of practice

## Other British Standards referenced

BS 5266-1:2016 Emergency lighting. Code of practice for the emergency lighting of premises'

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

BS EN 1634-1:2014 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Fire resistance test for door and shutter assemblies and openable windows

BS EN 1634-2:2008 Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware. Fire resistance characterisation test for elements of building hardware

BS EN 1634-3:2004 Fire resistance and smoke control tests for door and shutter assemblies, openable window and elements of building hardware. Smoke control test for door and shutter assemblies

BS EN 62305-2:2012 Protection against lightning. Risk management

BS EN 62305-3:2011 Protection against lightning, physical damage to structures and life hazard

BS 476-22:1987 Fire tests on building materials and structures. Method for determination of the fire resistance of non-loadbearing elements of construction

BS 5446-3:2015 Detection and alarm devices for dwellings. Specification for fire alarm and carbon monoxide alarm systems for deaf and hard of hearing people

BS 5839-6:2013 Fire detection and fire alarm systems for buildings. Code of practice for the design, commissioning and maintenance of fire detection and fire alarm systems in domestic premises

BS EN ISO 7010:2017 Graphical symbols. Safety colours and safety signs. Registered safety signs

BS 7273-4:2015 Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors

BS 8214:2016 Timber-based fire door assemblies. Code of practice

BS 9251:2014 Fire sprinkler systems for domestic and residential occupancies. Code of practice

BS 9990:2015 Non-automatic fire-fighting systems in buildings. Code of practice

BS 9999:2017 Fire safety in the design, management and use of buildings. Code of practice

## Other guidance

'Code of practice for the in-service inspection and testing of electrical equipment', third edition, Institution of Engineering and Technology, 2008.

'Requirements for electrical installations: IEE wiring regulations', 17th edition (BS 7671: 2008). Institution of Engineering and Technology 2008

'BR 135 Fire performance of external thermal insulation for walls of multi-storey buildings'

'Code of practice: Refurbishment of communal buildings and the fire risk of multi-layer paints', Warringtonfire, 2005



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