NHS National Services Scotland

NHSScotland Firecode Fire Risk Assessment

Scottish Health Technical Memorandum 86

SHTM 86

Version 6.0 – August 2023

Contents

1. Introduction

About this publication

1.1. This Scottish Health Technical Memorandum (SHTM) provides guidance on fire risk assessments in healthcare premises and other buildings occupied by NHS staff.

1.2. It recognises the interaction between physical fire precautions, the dependency of patients, the potential fire hazards within healthcare premises, management policies and procedures, and the availability of adequately trained staff to carry out evacuation procedures.

1.3. Additional guidance on the application of fire safety standards, referred to in this document, is contained in the complete suite of SHTM Firecode, and where applicable, this will be signposted.

Note 1.1: SHTM 86: Fire Risk Assessment version 6 replaces previous versions.

1.4. Fire risk assessments carried out in accordance with previous versions of SHTM 86 will remain adequate for the purpose of statutory compliance.

Overview

1.5. This SHTM recognises the requirement for an enhanced level of fire safety in healthcare premises for the protection of patients and other occupants.

1.6. Whilst the incidence of fire in hospitals and other healthcare premises is low, the consequences may be serious because of the difficulties and dangers associated with the emergency evacuation of ‘very high dependency’ and ‘dependant patients’ who will require staff assistance in the event of a fire evacuation.

1.7. The guidance in this document is consistent with the statutory compliance requirements of the Fire (Scotland) Act 2005 and The Fire Safety (Scotland) Regulations 2006.

1.8. The term ‘healthcare premises’ is used in this guidance document to cover the broad spectrum of premises used to treat NHSScotland patients. However, where appropriate, the term ‘hospital’ is used to identify specific requirements and recommendations for that occupancy.

1.9. NHSScotland Firecode defines a hospital as; a healthcare premises with bed-patient facilities.

1.10. References throughout this document to British and other technical standards do not include publication date and the current edition should be used.

Status

1.11. The Fire Safety Policy for NHSScotland mandates that NHSScotland bodies give regard to SHTM Firecode guidance for proposed and existing healthcare premises.

1.12. NHSScotland bodies must comply with the statutory and mandatory fire safety requirements in relation to fire risk assessments and use the NHSScotland 'Fire Safety Management System' as the primary means of recording fire risk assessments.

Legislation

1.13. Relevant legislation appertaining to fire risk assessments in healthcare premises includes:

- The Fire (Scotland) Act and Regulations
- The Building (Scotland) Act and Regulations
- The Health and Safety at Work Act and Regulations
- The Construction (Design and Management) Regulations
- Dangerous Substances and Explosive Atmospheres Regulations
- The Gas Safety (Management) Regulations
- The Equality Act
- Electricity at work regulations

2. Scope of SHTM 86

2.1. The Scottish Health Technical Memorandum (SHTM) 86 is compatible with the methodologies outlined in Health and Safety Guidance (HSG) series and Publicly Available Specification (PAS) 79-1: Fire risk assessment.

2.2. Fire risk assessment in healthcare premises must take account of progressive horizontal evacuation procedures for bed patients and delayed safe evacuation procedures for patients who are undergoing medical treatment that must be continued in a fire situation.

2.3. The assessment should consider factors that impact on the fire evacuation strategy such as the level of staffing required, patients and visitors who will be unfamiliar with the building, persons with mobility, hearing, visual, mental health or cognitive impairments, elderly and young persons.

2.4. The assessment should also consider the wide range of services that take place within hospitals, such as laboratories, pharmacies and retail units.

Use by competent person

2.5. The guidance in this document has been prepared on the understanding that it can be interpreted and utilised by ‘competent persons’, who are appropriately qualified with sufficient technical knowledge relevant to the healthcare environment.

2.6. There may be circumstances where the subject matter is beyond the scope of a fire risk assessors’ technical knowledge. In such cases, the NHSScotland Board should seek the advice of a suitably competent specialist.

Maintenance

2.7. An important factor in reducing risk is ensuring that all passive and active fire precautions are maintained to the appropriate standards. NHSScotland Health Boards should ensure that standard operating procedures for the testing and maintenance of fire safety structures and systems adhere to the relevant British Standard (BS) and the manufacturer’s instructions. The relevant testing and maintenance standards are quoted throughout this document.

Jointly occupied premises

2.8. In premises where NHSScotland have joint occupancy with one or more separate organisations, there is a legal duty for the different occupiers to cooperate with each other to ensure that they each, and collectively, comply with the requirements of the Fire Safety Scotland Act and Regulations.

This cooperation includes the fire risk assessment process where there is a legal duty to notify other occupants of any identified risks that could impact upon them.

2.9. Each of the occupiers are responsible for ensuring that a fire risk assessment is undertaken for the part of the premises they occupy including the means of escape routes from their occupancy.

2.10. A fire risk assessment should be undertaken that assesses the fire safety measures for the whole building such as fire warning system, compartmentation and shared means of escape routes. This overall assessment is the responsibility of the building owner or factor.

2.11. In shared premises, fire risk assessments may be undertaken jointly with responsible persons from partner organisations.

2.12. It is also acceptable for a single fire risk assessment to be undertaken by a competent person on behalf of all occupiers. An example of this would be an NHSScotland fire risk assessor carrying out a full building assessment on behalf of other occupiers. The responsibility for ensuring that the assessment is competent and that actions are addressed remains the responsibility of the individual occupiers and the building owner.

3. Assessment areas

Full building assessment

3.1. To ensure a fire risk assessment is comprehensive, a single fire risk assessment should be completed for an entire building.

However, some hospitals consist of a series of interconnected blocks spanning a large area and where this is the case, it may be practical to assess individual blocks, provided that the consequence of fire in the assessment block considers the impact on adjoining areas.

3.2. The full building assessment should take account of the passive and active fire precautions, management procedures, fire evacuation procedures, maintenance procedures and staff training.

If any aspect is not in accordance with Scottish Health Technical Memorandum (SHTM) Firecode, the fire risk assessment should consider any mitigating measures that are in place, and whether they have reduced the risk to as low as is reasonably practicable.

3.3. All the above factors should be considered individually and collectively, and an action plan put in place where there are any deficiencies that create a risk to occupants.

3.4. As part of a Health Boards quality assurance process, completed full building fire risk assessment documents should be peer reviewed by a competent fire safety risk assessor.

Area assessment

3.5. In addition to a full building assessment, it is recommended that an area assessment is carried out for an individual or group of wards/ departments. This assessment should consider factors that are within a local manager's control such as staff training, housekeeping and maintenance issues. Where items are noted that affect other parts of the building or similar deficiencies are found across a number of wards or departments, they should be included in the full building assessment.

Low-risk premises

3.6. It is acceptable for a local manager/ dutyholder to undertake a fire risk assessment in low-risk premises of limited size and layout, such as a small health centre or GP surgery.

3.7. The fire risk assessment should be limited to checking the following:

- means of escape is readily available
- fire exit doors are not locked
- escape routes are not obstructed by storage
- fire alarm system operates correctly and is tested weekly

- staff are trained and aware of the requirement for all occupants to leave the building by the nearest exit in the event of fire or fire alarm activation
- staff are trained and aware of the requirement to assist in the evacuation of patients and visitors
- portable firefighting equipment is maintained, unobstructed and ready for use
- staff fire action notices are in place and sited at exit doors and entrances to stair enclosures
- staff are aware of the procedures to report a fire, including phoning 999
- there is a procedure for fault reporting

3.8. The person undertaking the fire risk assessment should be confident in their ability, otherwise, they should contact the Health Board fire safety team for advice and support.

3.9. The completed fire risk assessment should be reviewed by a competent NHSScotland fire risk assessor.

4. The fire risk assessment process

4.1. NHSScotland fire risk assessment process adheres to the following principles:

1. identify fire hazards
2. evaluate whether existing control measures are adequate
3. assess the risk to occupants
4. record findings, mitigation measures and actions required
5. review and update the fire risk assessment

4.2. The fire risk assessor should carry out a comprehensive assessment of the following:

- premises plans, policies and procedures
- maintenance records
- fire safety training records
- previous fire incidents and unwanted fire alarm signals
- passive fire protection
- means of escape
- fire and smoke doors
- fire detection and alarm systems
- fire engineering
- automatic suppression systems
- electrical systems and equipment
- emergency escape lighting
- escape bed lifts and evacuation lifts
- portable firefighting equipment
- fire safety signs and notices
- fire service access and facilities
- ignition and fuel sources
- smoking materials
- electrical charging points
- photovoltaic panels

- any other factors that could impact on life safety in the event of fire

4.3. It is essential to include areas such as ceiling voids, roof voids, service ducts, plant rooms and areas that are normally locked shut.

4.4. Fire risk assessors should not enter voids or confined spaces unless fully trained, therefore, a visual inspection should be made from access hatches or from stepladders to view the area above removable ceiling tiles.

4.5. The assessment of structural elements should be limited to a visual inspection, as well as a determination based on records and plans. Where areas of the building are inaccessible, it may be necessary for an invasive survey to be carried out by a specialist contractor.

4.6. Where an invasive survey is necessary to determine risk, the reason should be recorded in the action plan.

4.7. The assessment should also comprise of discussion with staff to ensure that they have received fire safety training, have knowledge of the emergency fire action plan, and where appropriate the procedure for patient evacuation.

4.8. Where a risk is identified, the assessor should evaluate whether existing control measures are adequate to reduce the risk to as low as is reasonably practicable.

4.9. If the existing control measures are insufficient and action is required to remove or reduce the risk to an acceptable level, the fire risk assessor should apply a risk rating that is justified with a written narrative, outlining the risk posed and the effect that it would have on occupant safety. It is not acceptable to apply risk ratings that do not have a full justification.

4.10. An action plan is a key component of the fire risk assessment process as it is a commitment by the NHSScotland Health Board to undertake steps to reduce the risk from fire.

4.11. An action plan should detail the measures required to eliminate or reduce the risk to an acceptable level. This should be recorded on the NHSScotland ‘Fire Safety Management System’.

4.12. Each action should have a ‘named person’ who is responsible for completion of the task. It is important that discussion takes place between the fire risk assessor and named person to agree on the method and timescales for implementation of a particular action.

4.13. The fire risk assessor should have ownership of the action plan insofar as they should monitor the progress of actions and liaise with the ‘named person’ to ensure that actions are completed within the designated timescale, adjust the action plan as steps are implemented and close off actions once they are completed.

4.14. A full building assessment should include a final report that summarises the identified risks and the potential collective impact they have on occupant safety.

5. Risk matrix

5.1. A risk assessment matrix is a useful tool to quantify risk, as it demonstrates to dutyholders how a risk rating was calculated and assists them in the prioritisation of risk reduction.

5.2. A fire risk assessment will take account of various factors to determine risk, therefore, a fire risk assessor should utilise their knowledge and experience to determine the risk rating based on their findings and should not rely solely on the risk matrix.

5.3. The following table gives a comparison between the likelihood of a fire occurring and the impact that it could have on life safety.

Table 5.1: Risk matrix

	Low impact on life safety	Moderate impact on life safety	High impact on life safety
Low likelihood of fire	Low Risk	Moderate Risk	Moderate Risk
Medium likelihood of fire	Low Risk	Moderate Risk	High Risk
High likelihood of fire	Low Risk	High Risk	High Risk

Review of fire risk assessments

5.4. The Fire Safety (Scotland) Regulations impose a duty to review fire risk assessments where there is reason to suspect it is no longer valid or where there have been significant changes to the building layout or work practices.

5.5. The regulations also state that a review of the fire risk assessment must be carried out regularly to keep it up to date.

5.6. Indicators as to when a review of a fire risk assessment should be carried out:

- fire or near miss
- change of use or patient occupancy profile
- a significant change in the number of occupiers
- changes to work processes
- changes to building or internal layout
- the introduction or increase in the storage of flammable/highly flammable materials
- notified of defects by staff or others
- persistent unwanted fire alarm signals
- failure of active fire safety systems

5.7. In addition to the criteria mentioned above, it is recommended that NHSScotland Boards have a system of routine reviews for healthcare premises dependent on the risk factor of the individual premises.

5.8. The following timescales are suggested as a benchmark for routine reviews.

5.9. The following table has a list of building classifications and a list of timescales for review.

Table 5.2: Review timescales

Building classification	Timescales for review
Hospitals and other healthcare premises with sleeping accommodation	Yearly
Large/ medium healthcare premises	Two/ three yearly dependent on risk.
Small healthcare premises	Three/ four yearly dependent on risk.
Non-patient care facilities that are not physically connected to patient care facilities	Two/ five yearly dependent on risk.

6. NHSScotland fire risk assessment

Overview

6.1. This chapter contains the NHSScotland fire risk assessment question set which should be used for full building and area assessments.

6.2. Each sub-section lists the subject to be assessed, a list of considerations to assist the fire risk assessor in their determination of risk, followed by a record of findings and actions required.

6.3. If a question is not applicable, the reason should be stated in the narrative to demonstrate that the issue has been considered as not relevant and it is not an unintended omission.

6.4. It is the responsibility of the assessor to ensure that all relevant factors are included in the fire risk assessment.

NHSScotland fire risk assessment question set

Description of building or designated assessment area

- name and address of building
- assessment type – full building assessment or area assessment
- area assessment - provide details of location within the building
- principal use of the building or assessment area such as hospital, health centre, office
- age of building
- approximate number of occupants in building

Premises plans, policies and procedures

1. **Considerations:**

- are there plans for the building detailing all active and passive fire safety measures such as compartment and sub-compartments, fire detection and alarm system alarm zones, voids and ventilation ductwork, fire and smoke dampers
- are there plans detailing external wall cladding and insulation materials, cavity barriers and fire stopping
- is there a fire engineering strategy applicable to the building and is it available to review
- are fire safety policies, procedures and plans routinely reviewed, revised and readily available to staff
- are local fire safety procedures consistent with the Health Boards fire safety policy

- are Emergency Fire Action Plans (EFAP) in place and readily available to staff
- are Personal Emergency Evacuation Plans (PEEPs), where applicable, in place

2. **Record of findings and action required**:
   - **i.** list missing or inadequate information
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of existing mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Maintenance records

1. **Considerations:**

- Is the fire detection and alarm system tested and maintained in accordance with Scottish Health Technical Memorandum (SHTM) 82 and BS 5839
- are fire and smoke dampers tested and maintained in accordance with the manufacturer's instructions as defined in BS EN 15650
- are all components of installed fire engineering systems tested and maintained in accordance with the manufacturer's instructions and relevant British Standards
- are smoke control systems tested and maintained in accordance with BS7346, BS-EN12101 and the manufacturer's instructions
- are fire curtains tested and maintained in accordance with the manufacturer's instructions and BS8524 part 2
- are fire shutters tested and maintained in accordance with the manufacturer's instructions and BS EN 16034
- Is emergency escape lighting, including illuminated fire safety signs, tested and maintained in accordance with BS 5266 part 1
- are fire door sets tested and maintained in accordance with BS 476 Part 22 or BS EN 1634-1 and BS 8214
- are electronic door lock manual override systems tested and maintained
- is portable firefighting equipment tested and maintained in accordance with BS EN 3 and BS 5306
- are fire sprinkler systems maintained in accordance with BS 9251
- are other fire suppression systems tested and maintained in accordance with the appropriate standard

- have room integrity tests been carried out where gaseous fire suppression systems are installed
- are dry and wet risers tested and maintained in accordance with BS 9990
- are fire hydrants (including flow and pressure) tested and maintained in accordance with BS 9990
- are 'refuge' communication systems tested and maintained in accordance with BS 5839
- is electrical wiring tested and maintained in accordance with BS 7671
- are there records of Portable Appliance Testing (PAT)
- is lightning protection tested and maintained in accordance with BS 62305-1
- are there standard operating procedures for hot works and other works that could constitute a fire hazard
- are ventilation systems tested and maintained in accordance with SHTM 03-01
- are kitchen extraction systems tested and maintained in accordance with the manufacturer's instructions
- is evacuation equipment tested and maintained as per the manufacturer's instructions
- are escape and evacuation lifts tested and maintained in accordance with Scottish Fire Practice Note (SFPN) 3: Escape bed lifts
- are gas boilers and appliances tested and maintained in accordance with the manufacturer's instructions
- are photovoltaic panels (PV) tested and maintained in accordance with BS EN 62446-1
- are all fixed electrical installations including charging points tested and maintained in accordance with the Electricity at Work Regulations

2. **Record of findings and action required:**

   i. list missing or inadequate information

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire

   iii. apply a risk rating

   iv. action required

Fire safety training records

1. **Considerations**:

- do records indicate that fire drills, fire safety induction and awareness training are being provided for all staff as detailed in SHTM 83 Part 2: - 'fire safety training
- do records indicate that role specific training is being provided as detailed in SHTM 83 Part 2: - 'fire safety training
- do records demonstrate that there are always an adequate number of fire response personnel available
- are there contractor familiarisation training records
- are there voluntary worker's familiarisation training records such as Women's Royal Voluntary Service (WRVS) and other charity workers
- are there Public Private Partnership (PPP) staff and other non-NHS Staff familiarisation training records

2. **Record of findings and action required:**

   i. list missing or inadequate information

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Previous fire incidents and unwanted fire alarm signals (UFAS)

1. **Considerations**:

- is there recorded evidence in the NHSScotland fire risk management system of all fire and UFAS incidents
- are there records of investigation and action plans for each fire and UFAS incident
- do records indicate an excessive volume of UFAS

2. **Record of findings and action required**:

   i. list missing or inadequate information

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire; taking account of mitigations

   iii. apply a risk rating

   iv. action required

Passive fire protection

1. **Considerations**:

- have there been any structural or material changes to the building layout
- is the integrity and fire resistance of walls, floors and ceilings of compartments, sub-compartments, fire hazard rooms and fire hazard departments maintained to the appropriate standard
- does compartmentation continue through roof spaces and above ceiling voids
- are there any issues arising from a visual inspection of columns, beams and other structural elements
- are there any issues arising from a visual inspection of service ducts and risers
- do openings in compartment and sub-compartment walls maintain the requisite fire resistance for example doors, hatches, vents, glazing, and service penetrations
- is there evidence of appropriate fire stopping
- are there adequate and appropriate fire and smoke dampers
- is access to the premises and restricted areas adequately secured, to minimise the risk of wilful fire raising
- are there any issues arising from a visual inspection of external walls

6.5. Guidance on assessing the risk of external wall is contained within: Scottish Advice Note: Determining the fire risk posed by external wall systems.

Note 6.1: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Means of escape

1. **Considerations**:

- are there any structural changes or change of occupancy from the original design

- do all escape routes lead to a place of safety, Including, ensuring there are no locked doors where escape is through adjacent occupancies that may have different business hours to the area being assessed
- are there any excessive travel distances
- are escape routes and stairways wide enough for the occupancy and the use of mattress or other evacuation equipment
- are stairway handrails, posts, edge protection and treads in good condition
- are escape routes maintained free from trip hazards, obstructions and storage
- are exit doors readily available and openable by a single action without the use of a key
- do electronic door release mechanisms fail safe in event of a fire alarm actuation and in the event of power failure; and do manual door release units operate correctly
- do doors, where appropriate, open in the direction of escape
- are temporary waiting spaces/refuge areas maintained clear and with appropriate communication equipment
- is there sufficient, readily available and appropriate evacuation equipment; are staff trained in its use
- is there suitable means of escape arrangements in secure units
- is there adequate emergency escape lighting
- is the means of escape signage clearly visible; can it be followed by all occupants including members of the public who are not familiar with the building layout
- is there a defined unobstructed route from final exits to assembly points

Additional means of escape considerations - Progressive Horizontal Evacuation (PHE)

- are there adequate compartments and sub-compartments to facilitate PHE from all bed patient areas
- are the means of escape arrangements suitable for the classification of patient dependency
- is there sufficient staff to implement PHE at all times including nights and weekends
- are there any layout changes from the original design that affect PHE
- does the Emergency Fire Action Plan detail the PHE process
- are staff trained and have knowledge of PHE procedures

- is there a PHE process in place for areas that are not bed-patient areas, but where treatment, medication or anaesthetic are administered

Note 6.2: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Fire and smoke doors

1. **Considerations**:

- is the provision of fire and smoke doors adequate for the risk
- are the fire and smoke doors located in accordance with the buildings fire plans
- are all components of fire and smoke door sets, including frame, self-closers, hold open devices, ironmongery, signage, smoke seals and intumescent strips, appropriate and functioning correctly.
- do fire and smoke doors have the appropriate fire rating in relation to the surrounding structure
- do doors close fully to prevent the passage of fire and smoke
- have automatic hold open devices been considered for fire and smoke doors that are subject to operational damage
- are self-closing devices appropriate for the patient occupancy such as free swing arms on bedroom doors
- are there adequate means of escape procedures in areas where doors are kept locked shut for patient safety and security such as mental health facility, care of the elderly unit

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Fire detection and alarm systems

1. **Considerations**:

- is the fire detection and alarm system adequate for the healthcare premises and occupancy, including those with hearing impairments
- are zone plans correctly sited and display the correct information
- do fire alarm zones correspond with compartment/sub-compartment boundaries
- do staff have knowledge of how to interrogate and reset control panels
- does the control panel display fault signals or isolations
- are manual call points and detector heads free from obstruction

Note 6.3: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises and SHTM 82 Fire alarm and detection systems.

2. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Fire engineering

1. **Considerations**:

- have there been changes to the original design that impact upon the fire engineering strategy
- is there evidence that management procedures, relating to fire engineered solutions, are in place and being adhered to.
- is there a maintenance regime in place for all components of fire engineering installations

Note 6.4: Additional guidance is contained within SHTM 81 Parts 1, 2 and 3: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire; taking account of mitigations

iii. apply a risk rating

iv. action required

Automatic suppression systems

1. **Considerations**:

- is the suppression system appropriate for the healthcare premises and occupancy type
- have there been changes to the layout or use of the building that impacts on the operation of the suppression system
- is the area free from obstructions that could impede the operation of the system, for example high-level storage
- where gaseous suppression systems are installed is the room integrity of the walls, floor and ceiling maintained to the appropriate standard
- where automatic suppression system control panels are installed are indicators illuminated and visible
- does the automatic suppression system control panel indicate any system faults

Note 6.5: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:

i. list deficiencies

ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire; taking account of mitigations

iii. apply a risk rating

iv. action required

Electrical systems and equipment

1. **Considerations**:

- is the location and use of electrical equipment and charging points appropriate
- is all electrical equipment maintained in good condition
- are all electrical wires, plugs, sockets, fuses and electrical circuit boards maintained in good condition
- are the support fixings for electrical cables installed to prevent premature collapse in the event of fire, for example are electrical cables sited in cable trays or supported by metallic cable clips

- is there evidence of incorrect use of electrical equipment, including cookers and toasters
- is there evidence of incorrect use of electrical adaptors, portable chargers and extension leads
- are there standard operating procedures for the safe charging of portable electrical equipment
- where appropriate, is electrical equipment switched off when not in use
- are there sufficient electrical sockets to prevent overloading
- do portable electrical appliances have test certificate labels
- is there a procedure for reporting and repairing faults
- is there signage to indicate the location of electrical isolation switches
- are batteries, including lithium-ion, stored and used correctly

Note 6.6: Additional guidance is contained within SHTM 83 'General fire precautions in healthcare premises.

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire; taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Emergency escape lighting

1. **Considerations**:

- is the system appropriate and adequate for the healthcare premises and occupancy type
- are charge indicators illuminated and visible
- does the system reactivate within 0.5 seconds of a mains failure in stairways and patient care areas
- is testing and maintenance carried out in accordance with BS 5266

Note 6.7: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:
    i. list deficiencies
    ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
    iii. apply a risk rating
    iv. action required

Escape bed lifts and evacuation lifts

1. **Considerations**:

- are escape and evacuation lifts installed in accordance with SFPN 3: Escape bed lifts
- do operational and management procedures adhere to SFPN 3
- are the operational and management procedures included in the emergency fire evacuation plan
- is staff training sufficient and appropriate

Note 6.8: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises and SFPN 3: Escape bed lifts.

2. **Record of findings and action required**:
    i. list deficiencies
    ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
    iii. apply a risk rating
    iv. action required

Portable firefighting equipment

1. **Considerations**:

- is there sufficient portable firefighting equipment
- is the extinguishing medium appropriate for the risk
- is firefighting equipment unobstructed and ready for immediate use
- where firefighting equipment is not readily visible is there adequate signage to indicate its location
- is firefighting equipment appropriately sited

- is the firefighting equipment provided with the correct identification signage and anti-tamper tags
- where firefighting equipment Is stored in anti-tamper bags or boxes is there suitable instruction to enable the equipment to be available for immediate use

Note 6.9: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises and BS 5306.

2. **Record of findings and action required**:
    - **i.** list deficiencies
    - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
    - **iii.** apply a risk rating
    - **iv.** action required

Fire safety signs and notices

1. **Considerations**:

- are there adequate fire safety signs and notices and are they appropriately sited
- are fire safety signs clearly visible, both in normal and in mains failure conditions.
- do fire safety signs and notices display the correct information

Note 6.10: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises, SHTM 85: Fire precautions in existing healthcare premises and Health and Safety (Safety Signs and Signals) Regulations 1996 and BS 5499.

2. **Record of findings and action required**:
    - **i.** list deficiencies
    - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
    - **iii.** apply a risk rating
    - **iv.** action required

Fire service access and facilities

1. **Considerations**:

- have there been any changes to the site layout that impacts on fire appliance access or firefighter access to hydrants and rising mains

- are designated emergency access routes maintained free from vehicles and other obstructions
- is there clear signage to indicate the location of firefighting facilities

Note 6.11: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Ignition and fuel sources

1. **Considerations**:

- are ignition sources and combustible materials adequately controlled
- is there an acceptable level of housekeeping throughout the premises
- are there established waste management procedures and are they being adhered to
- are there adequate storage facilities
- are internal wall linings compliant with the technical handbook non- domestic, SHTM 81 and where appropriate the fire engineering strategy
- are textiles and furniture non-flammable
- do laundered materials maintain their non flammability properties
- are furnishings maintained in good condition
- is equipment and machinery used safely
- are gas appliances sited and used correctly
- is the area around gas boilers, appliances and system equipment maintained free from combustible materials
- are medical gases and other gas cylinders used and stored correctly
- are there standard operating procedures relating to dangerous substances and explosive atmospheres (DSEAR)
- are there suitable control procedures for highly flammable materials

- are there adequate containment measures for flammable liquids and procedures to minimise spillage
- are permit to work systems being adhered to

Note 6.12: Additional guidance is contained within SHTM 02-01 Part A & B: Medical gas pipeline systems.

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Smoking materials

1. **Considerations**:

- is there evidence of illicit smoking within the building
- is there evidence of smoking externally; close to the building, adjacent to waste containers, entrance or exit doors, openable window or ventilation grilles
- are there procedures to prevent oxygen-enriched atmospheres and oxygen saturation of materials
- are there suitable control measures for lighters and matches in wards or other areas where there is a potential for accidental or wilful fire raising
- is there appropriate signage, both inside and outside of the building, to indicate that smoking is not permitted
- are there regular patrols of the buildings perimeter to minimise the occurrence of illicit smoking and remove combustible materials

2. **Record of findings and action required**:
   - **i.** list deficiencies
   - **ii.** provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations
   - **iii.** apply a risk rating
   - **iv.** action required

Electrical charging points

1. **Considerations**:

- are charging points for electrical equipment and vehicles within the building, located in fire hazard rooms
- are external electric vehicle and other electrical equipment charging points at a safe distance from the building based on a risk assessment that considers the following factors:
  - type of external wall cladding
  - construction of any canopy to determine if it will contribute to fire spread if ignited
  - likelihood and effect of fire and smoke entering windows or other openings
  - the number of vehicles being charged and their proximity to each other with regard to fire spread from one vehicle to another
  - the means of identifying a fire in the charging location and the time it would take to give warning to building occupants
  - clear and prominent notices at each charging point to indicate what equipment or vehicle it is suitable for
  - instruction to demonstrate the means for isolating the power
  - suitable signage to show the action that should be taken to raise the alarm in the event of fire

Note 6.13: Additional guidance is contained within SHTM 81 Part 1: Fire safety in the design of healthcare premises.

2. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Photovoltaic panels (PV)

1. **Considerations**:

- are isolation controls readily accessible and have suitable signage indicating their location
- is there suitable automatic smoke detection for internal electrical control equipment

- is portable firefighting equipment appropriate for the risk and correctly sited adjacent to PV electrical control equipment

Note 6.14: Additional guidance is contained within BS EN 61215, BS EN 61646 in conjunction with BS EN 61730-1, Microgeneration certification scheme (MCS) 2012 – 'Guide to the Installation of Photovoltaic Systems and any specific guidance issued by manufacturer.

2. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Other factors that could impact on life safety in the event of fire

1. **Record of findings and action required**:

   i. list deficiencies

   ii. provide written narrative that details the potential impact that deficiencies will have on life safety in the event of fire, taking account of mitigations

   iii. apply a risk rating

   iv. action required

Appendix 1: SHTM Firecode glossary of terms

Active fire precautions: installed fire safety systems

Addressable fire alarm system: system in which signals from each fire detector and/or fire alarm manual call point are individually identified at the fire alarm control and indicating equipment

ARC (alarm receiving centre): centralised control room for the automatic receipt of a fire alarm signals, and the onward transmission of the received information to the Fire and Rescue Service

ASET (available safe egress time): calculated time available between ignition and the time at which tenability criteria are exceeded in a specified space in a building

CEL (Chief Executive Letter): letter circulated by the Scottish Government. Health Directorates to the Chief Executives of Health Boards, usually to introduce a policy directive or mandate specific course of action

DL: A letter circulated by the Scottish Government. Health Directorates to the Chief Executives of Health Boards

Cavity barrier: any construction provided to seal a cavity against the penetration of fire and smoke, or to restrict its movement within the cavity

Compartment floor: floor with the fire resistance required to ensure compartmentation. Defined in the 'Technical Handbook: Non-Domestic' annex 2D table 2.19

Compartment wall: wall with the fire resistance required to ensure compartmentation. Defined in the 'Technical Handbook: Non-Domestic' annex 2D table 2.19

Compartmentation: division of a building into fire compartments intended to contain a fire within the compartment of fire origin

Dependent: Patients whose clinical treatment or condition creates a dependency on staff to evacuate in the event of fire. Evacuation of this patient group is unlikely to prove life threatening although it will most likely be necessary to move them to an adjoining compartment or sub-compartment, where their care can be continued

Duct: the structure, trunking, or casing, with any apertures, enclosing a passage, other than a flue, used solely for conveying air, gases, or refuse

Emergency Fire Action Plan (EFAP): written document detailing the actions to be taken in the event of a fire

Escape route: means a route by which a person may reach a place of safety

Escape stair: means a stair forming part of an escape route

Exit: means a point of egress from a room, storey, protected zone, space, gallery, catwalk or openwork floor that forms part of, or gives access to, an escape route or place of safety

External wall: includes a part of a roof pitched at an angle of 70º or more to the horizontal

Firecode: Scottish Health Technical Memorandums relating to fire safety

Fire detection and alarm systems: alerts occupants of fire incident

Fire hazard: a set of conditions with the potential for initiating a fire

Fire hazard room: room enclosed with fire resistant construction

Fire hazard department: department enclosed with fire resistant construction

Fire precautions: measures to reduce the likelihood of a fire occurring and to mitigate the consequences should fire occur

Fire resistance duration: defined in the 'Technical Handbook: Non-Domestic' annex 2D table 2.19

Ground storey: means the storey of a building in which there is situated an entrance to the building from the level of the adjoining ground, or, if there is more than one such storey, the lower or lowest of these

Hospital: healthcare premises with bed – patient facilities

Hospital Street: protected zone in a hospital provided to assist in facilitating circulation and horizontal evacuation, and to provide a fire-fighting bridgehead

Independent: Patients are considered as independent if their mobility is such that they can evacuate a premises unaided or with minimal assistance from another person. This would include being sufficiently able to negotiate stairs as well as being able to comprehend the emergency wayfinding signage around the healthcare facility

Intumescent: material with the property of swelling or foaming when exposed to heat which is designed to maintain the integrity of a fire separating element at the position where services pass through

Long fire resistance duration: defined in the 'Technical Handbook: Non-Domestic' annex 2D table 2.19

Medium fire resistance duration: defined in the 'Technical Handbook: Non-Domestic' annex 2D table 2.19

Non-combustible: material that does not contribute to fire growth (European fire classification A1 and A2).

Passive fire precautions: the structural fire safety elements of a building

Peer review: in the context of this document means, an evaluation of the fire safety risk assessment. The peer review should be carried out by competent fire risk assessor;

Place of relative safety: place in which there is no immediate danger from fire, such as an adjacent compartment

Place of safety: place outside of the building at a safe distance from the effects of fire and smoke

Protected enclosure: enclosure separated from adjoining accommodation spaces by fire resistant construction

Protected lobby: lobby within a protected zone but separated from the remainder of the protected zone

Protected route: route designated for use as an escape route, which is separated from the remainder of the building by fire resistant construction

Protected shaft: shaft that is enclosed with fire resistant construction

Protected stairway: stairway that is enclosed with fire resistant construction

Protected zone: part of an escape route which is within a building, but not within a room, and to which access is only by way of a protected door and from which there is an exit directly to a place of safety

Progressive horizontal evacuation (PHE): a systematic process of moving patients away from the area affected by fire to an adjoining compartment or sub compartment on the same level, where the occupants are protected from the immediate dangers of fire and smoke

Refuge: are places of relative safety where persons with restricted mobility have access to a communication facility, whereby, they can call upon staff to assist them with their ongoing evacuation

Roof space: means any space in a building between a part of the roof and the ceiling below

Room: means any enclosed part of a storey intended for human occupation or, where no part of any such storey is so enclosed, the whole of that storey, but excepting in either case any part used solely as a bathroom, shower room, washroom, toilet, and stair or circulation area

Self-closing door: fire and smoke door that closes automatically from all angles of swing

SHTM: Scottish Health Technical Memorandum

Short fire resistance duration: defined in the ‘Technical Handbook: Non-Domestic’ annex 2D table 2.19

SFPN: Scottish Fire Practice Note

Separating floor and separating wall: floor or wall constructed to prevent the spread of fire between buildings or parts of a building

Service opening: means any opening to accommodate a duct, pipe, conduit or cable (including fibre optics or similar tubing)

Storey: part of a building which is situated between the top of any floor being the lowest floor level within the storey, and the top of the floor next above it being the highest floor level within the storey or, if there is no floor above it, between the top of the floor and the ceiling above it or, if there is no ceiling above it, the internal surface of the roof; and for this purpose a gallery or catwalk, or an openwork floor or storage racking, shall be considered to be part of the storey in which it is situated

Sub-compartment: part of a building (which may contain one or more rooms, and includes, where relevant, the space above the top storey of the sub-compartment) constructed to aid horizontal evacuation

Sub-compartment wall: a wall with the specified fire resistance, Defined in the Technical handbook non-domestic annex 2D table 2.19

Temporary waiting space/refuges: are places of relative safety where persons with restricted mobility have access to a communication facility, whereby, they can call upon staff to assist them with their ongoing evacuation

Technical Handbook: Non-Domestic: the Building Standards 'Technical Handbook: Non-Domestic' provides guidance on achieving standards set in the Building (Scotland) Regulations

Unprotected zone: any part of an escape route, which is separated by walls, glazed screens or any other permanent form of demarcation from any space intended for human occupation, including a protected zone

Upper storey: any storey that is above the level of the ground storey

Very high dependency: Patients for whom movement or evacuation would severely affect their medical care and may prove life threatening. This will include those in intensive care areas, operating theatres, coronary care, special care baby units