Fire Safety Compliance Code P607

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1. Introduction

Risks from fire need to be managed so that injury to staff, pupils and visitors and damage to schools and school property is avoided. Key to this is identifying the fire hazards, assessing the risk presented by these hazards and ensuring the risk is being adequately controlled.

A fire risk assessment is an organised and methodical appraisal of the premises and the activities carried out, it identifies possible sources of fire, how the chances of fire starting may be reduced and safe ways of protecting and evacuating people from the premises if a fire were to occur.

This document sets out the requirements for undertaking a fire risk assessment (FRA) it contains detailed guidance on fire risk controls including the maintenance of equipment and systems, staff training and evacuation drills etc. *A Fire Risk Assessment Form F607a* is an assessment template which is provided for use alongside this document.

2. Responsibilities

2.1 Head teachers

Headteachers are ultimately responsible for fire safety management in their school, in line with legal requirements. They can delegate duties to staff with premises management responsibility. Where duties are delegated, the Headteacher must ensure that:

- The premises manager has the competency to undertake the role as outlined in this document.
- Required resources are made available, including time and available budget to implement identified control measures.
- The premises manager has access to appropriate competent advice where it is needed to assist (e.g. the Health, Safety and Well-being Team, external experts).
- The actions for improvement identified in the fire risk assessment are implemented.
- Adequate fire records are being kept including fire instruction/training provided to staff and maintenance/inspection of fire safety equipment
- Ensure that fire plans are updated where there are structural changes to the premises or other features that impact on the existing plan.
- Ensure that the fire risk assessment is reviewed as a result of physical and usage changes.

2.2 Premises Managers

Where delegated the responsibility for fire safety management premises managers are responsible for:

- Attending required training.
- Carrying out the fire risk assessment using the fire plan, their knowledge of the building(s), obtaining input from other members of staff about their activities, use the findings to develop and implement the required action plan.

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- Reporting significant findings to the Headteacher and ensuring the action plan is implemented.
- Developing an evacuation plan and take account of personal emergency evacuation arrangements during planning.
- Ensuring that employees are trained in evacuation processes.
- Ensuring that fire related equipment is maintained and tested.
- Changes to activities or the building considers the impact on fire risk and management.
- Ensure that Secondary Curriculum risks are included in the assessment (working with the relevant Heads of Department).

2.3 Heads of Department (Secondary curriculum)

- Work with the premises manager to ensure that fire related risks associate with the Secondary Curriculum are identified and assessed.
- Notify the premises manager of any change that may impact on the fire risk assessment.

2.4 Teachers and other staff with evacuation responsibility

- Follow evacuation arrangements to ensure that all pupils and staff leave the premises safely.
- Communicate concerns identified as a result of evacuation to the premises manager.
- Notify the premises manager of any change that may impact on the fire risk assessment.
- Notify the premises manager of any relevant information in relation to personal emergency evacuation planning.

3. Fire plans

Three things need to be brought together by the person carrying out the fire risk assessment:

i. an understanding of how the premises is used and activities that take place there
ii. the fire plan for the premises
iii. Competency to undertake the fire risk assessment - an understanding of arrangements for the management of fire safety gained from fire safety risk assessment training – Premises Management 3 Fire Risk Assessment and the assessment guidance detailed in this document.

NPS have provided fire plans to all Norfolk schools. Fire plans detail the following as a minimum:

- Fire detection and alarm systems
- Emergency lighting
- Escape routes and compartmentation
- Breach or lack of fire stoppage
- Fire doors, final exit doors and doors forming part of accepted escape routes
- Fire signage

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- Areas that were not accessed

The premises manager must use this information in order to complete the fire risk assessment form. Where the fire plan makes recommendations for additional fire precautions, such as emergency lighting, the premises manager must review these requirements in their overall assessment of the premise and how it is used and implement them where they are needed; for example, the plan may recommend emergency lighting is needed, but this may not be required where there is adequate borrowed light at all times that the site is in use.

For premises with a simple construction and layout such as those with high number of fire escape routes or single storey buildings using modern construction techniques, premises managers can complete the FRA as soon as they have attended the training. More complex premises or those with specific risks associated with them may need additional technical input to complete the assessment - please see Section 4.

Where changes are made to the building since the development of the fire plan, Headteachers and premises managers must ensure that the plans are updated covering all of the areas as identified above through NPS or another competent organisation (see 4 below). Changes to the building may also impact on the fire risk assessment and evacuation plan.

4. When to use a consultant to carry out a fire risk assessment

Completing the fire risk assessment form yourself ensures that you own and understand the precautions that need to be put in place for your premises. This is likely to be suitable where the layout of the building is not complicated, the person carrying out the FRA has a good understanding of the premises, has attended fire risk assessment training and has the competency to carry this out. A specialist should carry out a fire risk assessment at the schools cost where:

- Where schools are not confident that they would be able to carry out the FRA themselves, or
- There are high risk issues on the site (see risk levels in section 15.3), or
- The Health, Safety and Well-Being Team have advised a FRA should be undertaken by a specialist.

Headteachers must ensure that the persons they contract to undertake the FRA are competent to do so. As part of this you must ensure that:

- The consultant works with the premises manager to ensure the document truly reflects the use and occupation of the building and that the premises manager understands the findings of the assessment
- The resulting fire risk assessment covers all of the areas discussed in this compliance code.
- They use the *Fire Risk Assessment Form F607a* available or other accepted formats such as PAS 79:2012

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A Fire Risk Assessment Provider Competency Questionnaire F607d is provided to assist with competency evaluation. This should also be used when selecting an external contractor to update or create fire plans.

5. How to carry out a fire risk assessment

This section provides an overview of the fire risk assessment process. Like all risk assessments a FRA should follow 5 key steps:

- Identify hazards
- Identify the people at risk, and specifically those with any special risk attached or needs
- Evaluate the risks and identify controls
- Record the findings and actions
- Keep the assessment under review and up to date

Any fire needs 3 things to establish itself: a source of ignition, oxygen and fuel. So, when considering the hazards in your building you should be thinking about these three things. Removing or reducing any one of these will reduce the risk of a fire starting. Detailed guidance on each of these factors is provided in this document.

5.1. Identify who could be harmed

You need to consider who could be at risk from a fire and where they may be when a fire starts. You need to ensure the safety of staff, contractors, clients, customers, service users and anyone else that may be in the premises if a fire breaks out. The risk assessment form takes you areas to help you to identify this.

5.2. Evaluate the risks and identify control measures

There are a range of control measures which can be implemented on the basis of the risk assessment and fire plan, for example:

- Emergency exit routes
- Reasonable distance of travel (the time it takes to get out the building)
- Fire resistant constructions, compartments and doors
- Emergency lighting
- Means of raising alarm
- Firefighting equipment
- Emergency signage
- Emergency evacuation management
- Adequate staffing levels
- Housekeeping systems to control and manage ignition and fuel sources
- Systems to control and manage site e.g. maintenance of fire protection devices, control of smoking on site, control of hot works
- Systems to manage the safety of people who need assistance
- Systems to detect the breakout of fire

You also need to consider:

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- If you need to set a maximum occupancy number for the building, parts of the building or specific activities, this is detailed in Section 15.
- The controls available at different times of the day. Are any controls compromised or different at different times? Are the risks different?

Again, the form takes you through a number of questions to help you evaluate the risks and identify additional control measures

5.3. Record, develop an action plan and review findings

Fire risk assessment findings must be recorded. Where you have identified actions as a result of (a) referring to fire plan recommendations and (b) completing the Fire Risk Assessment Form F607a, these actions should be detailed in the action plan section of the form. The action plan is used to record, implement and monitor progress on a prioritised basis.

Where you already have an adequate FRA in place, i.e. one that covers all of the areas outlined in this document, you do not need to redo the assessment. However, when reviewing your assessment, if changes are needed you should transfer the relevant information into this document and complete the remainder as necessary.

Reviews of risk assessments are needed on a regular basis to check that they are still valid - at least every year or earlier if there is a significant change. Changes may impact on the adequacy of the existing arrangements. Changes include:

- Changes to the layout of premises or if new buildings or extensions are added, including increasing the number of pupils in one area of the building such as lunchtimes and assemblies.
- Areas of the building are ‘mothballed’ due to reducing pupil numbers
- Pupils move to different bedrooms or new pupils move in
- Significant staff changes
- Changes to the way the building is used e.g. hiring out for community groups in the evening, overnight use such as scout or brownie camps, having a drama production with a significantly increased number of visitors.
- New materials, stock or equipment are introduced
- Changes in legislation or NCC procedures and documents relating to fire safety

6. Evacuation plans

Once the fire risk assessment is used to identify the potential fire safety issues for your premises, you need to produce an evacuation plan that reflects the people and use of the building, section 19 provides information about action plan development.

7. Fire risk assessment guidance

The remainder of this document provides detailed information to refer to and apply as appropriate when carrying out the fire risk assessment using *the Fire Risk Assessment Form F607a.*

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8. Sources of ignition

Nearly all premises will accommodate equipment or processes which at some point could provide a source of ignition for a fire to begin. This source might be present permanently e.g. fixed electrical equipment or on a temporary basis e.g. equipment brought onto site by contractors. A key part of fire risk assessment is to identify potential sources of heat that might ignite flammable materials present in your premises. Broad categories of ignition sources (and some examples of these) include:

- Hot surfaces – Heater surfaces, hot plates, toasters etc
- Naked flames – Gas cookers, matches (e.g. arson) open fires, Bunsen burners, hot works (e.g. blow torches) etc
- Electrical fires – Faulty and overheating electrical equipment
- Mechanically generated sparks – Grinding wheels, welding, cutting processes

8.1 Hot surfaces and naked flames

Portable heaters

Some portable heaters present a much greater risk than others, for example: where they produce a naked flame; radiate heat at high temperatures such as radiant bar heaters; are powered by LPG. These types of heaters should be replaced by a safer alternative such as:

- Use a safer type of portable heater such as a fan or convection heater.
- An appropriately installed central heating system or otherwise;

The risk from portable heaters can be reduced by ensuring:

- They are not put in very close proximity to combustible materials (aim to keep combustibles one metre clear of portable heaters)
- Loose materials are not stored above that could fall down on to them
- They are not misused e.g. handling items to dry over a convection heater
- (Where electrically powered) they undergo portable appliance testing and visual checks. Separate guidance is available on Portable Electrical Equipment P606
- They are not left operating unattended and are switched off as part of the closing up procedure
- They are not used to dry clothing
- Supplier/manufacturer safety instructions are followed
- Cables are not left trailing across the floor
- They are not used in a highly flammable atmosphere

Faulty heaters should be labelled as such and taken out of use prior to repair by an appropriate engineer or disposal where more cost effective to do so.

Machinery and equipment operating at high temperatures

Some machinery operates at - or generates - sufficient temperature that nearby combustible materials may be ignited. This might be due to moving or internal parts of the

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machinery getting hot or the process itself e.g. heat being generated through friction. Controls may include allowing adequate ventilation around machinery/equipment, keeping it clear of combustible materials, ensuring it is adequately lubricated and maintained.

Toasters

Toasters are the cause of many fires and present a particular risk when their condition is allowed to deteriorate or when they are positioned and used inappropriately. Much of the guidance given in the 'portable heaters' and 'portable electrical equipment' sections of this document will also apply to the use of toasters.

Where toasters are used, a fire blanket must be made available and staff instructed in how to use this because they have an exposed element.

Gas cookers and hobs

- Care must be taken to ensure that combustible materials, such as cloths are kept clear of sources of naked flames.
- Once lit, these items must not be left unattended and ensure that suitable checks are made to switch off items after use.
- Make sure electrical leads do not run anywhere where they could be exposed to heat from naked flames.
- Staff must be trained appropriately on fire risk within kitchens and must ensure that pupils are aware of how to reduce the risk when cooking.
- Gas equipment must be tested on an annual basis

Arson

Many fires are started deliberately through arson. It is difficult to remove all potential for arson as many buildings, particularly out of hours, are vulnerable to unauthorised access. However, there are many sensible steps which can be taken to reduce the risk. These include:

- Reducing the supply of combustible materials stored in close proximity to the building
- Where waste is stored externally in a wheelie bin, ensure this is kept secured (e.g. chained to a fence) away from the building and not underneath external stairways, fire exits and vulnerable parts of the building e.g. windows. Where this is not possible, you may need to have your waste collected more regularly to prevent it accumulating or consider other methods such as using wheelie bins with lids that can be kept tightly locked shut
- Do not have skips positioned next to your building (these should usually be located at least 6m away)
- Fire proof letter boxes to reduce the risk from burning materials being placed through your letter box
- Improving site security through lighting, fencing and CCTV (Risk and Insurance provide a site security checklist that can be used in helping identify vulnerable parts of your site)
- Ensuring closing up procedures include closing windows

Smoking

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Smoking inside premises is prohibited and any smoking outside the building should be in line with the smoking policy. In the unlikely event that smoking is allowed on school premises this must take place in a designated smoking area away from combustible materials and an appropriate receptacle provided for cigarette butts e.g. a butt bin. No smoking should be allowed in areas where flammable atmospheres may occur i.e. near LPG cylinders or highly flammable liquids.

Open fires
Most buildings will have an appropriate central heating system though there may be instances where open fires are used. Open fires should be properly guarded so that embers cannot escape and catch light to combustibles. Fires should also be properly put out when no longer required.

Chimneys should be kept maintained and swept regularly. When burning bituminous coal or wood this should be quarterly when in use. When burning smokeless fuel this should be at least once a year. More information is available on the Guild of Master Chimney Sweeps website.

Other sources
Consideration must also be given to other sources of ignition such as candles, matches, lighters, Bunsen burners and barbeques. Each of these should be reviewed and control measures put in place to reduce the risk of unplanned spread of fire from the use of these items.

Hot work
Hot work refers to **contractor** activities that produce heat, sparks or flame. It is most commonly associated with:

- Cutting and welding
- Brazing and soldering
- Use of blow lamps and torches
- Use of bitumen/tar boilers
- Use of grinding wheels

Such tasks commonly form part of construction or refurbishment works, but may also be employed in small works carried out as part of repairs, maintenance or redecoration.

Schools are required to operate a **NO HOT WORKS** policy. No hot works are permitted to be carried out by contractors unless there are exceptional circumstances or cold working methods are not available. Full information on hot work is provided here.

8.2 Electrical equipment

Fixed electrical equipment
Anything which does not have a plug (i.e. does not plug into a socket) forms part of the fixed electrical mains installation e.g. sockets, lighting, fuse boxes etc.

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There are many reasons why electrical installations may become hazardous such as breakdown of cabling and damage to sockets. Some of these you will be able to identify (such as obvious signs of damage to sockets) but others may only be identified by a competent electrical engineer through electrical testing/inspection. Therefore, fixed electrical installations should be inspected by a competent electrical engineer on a five yearly basis (alternatively, 20% of the installation may be inspected on an annual basis). Where your premises are covered by the Building Maintenance Partnership Scheme (BMP), NPS will arrange for these works to be carried out on your behalf. If not, a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

Portable electrical equipment

Portable electrical appliances are anything with a plug. Faulty portable electrical equipment (including its lead) can result in electrical fires. An important part of controlling this risk is ensuring that the equipment is used in suitable and safe environments. For example, cables/leads dragged across rough surfaces can cause deterioration in its condition, as can equipment that is not waterproof being used in wet conditions.

Similarly cables may be subject to mechanical damage (wheeled over, trapped in doors etc) allowed to rest in substances (such as oils) or next to hot processes that can cause its sheathing to become brittle or degrade.

The fire risk assessment should consider how any equipment might act as a source of ignition and how this might be controlled. Practical steps to take would include:

- Ensuring there is sufficient ventilation around any equipment so that any heat (including hot air exhausted from the machine itself) can dissipate
- Ensure equipment is used in appropriate environmental conditions
- Ensure cables are not left trailing across the floor where it can be damaged or tripped on (which could also lead to damage to the plug/socket)
- Not using equipment where there are obvious signs of damage (either to it, or its lead). In these instances, the equipment should be taken out of service and labelled as faulty until repair is made; or the equipment is otherwise disposed of

Further guidance on the use and testing of portable electrical equipment is available in P606

You can reduce the risk of electrical fires by:

- Ensuring flammable/combustible materials are not stored in close proximity to fixed electrical equipment, a fault causing overheating, arcing or sparking could cause combustible materials to catch light.
- Not overloading sockets. This can happen when an appliance (or a number of appliances) is plugged into a socket and exceeds the capacity of the socket. The total load on a socket should not be greater than 13 Amps.

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Important: Double sockets should still only have a maximum 13 Amps of equipment plugged into them (not 13 Amps in each socket)

Electrical adapter blocks and leads
Multi-plug adapters – Where an inadequate number of sockets are available, this may lead to adapter devices being used to accommodate multiple appliances so that they can be powered by a single socket. These devices might be:

- **Adapter blocks** – These plug directly into a socket with multiple plugs in turn being plugged into the block. They do not have a connecting cable as multiple plug adapter leads do. Blocks should not be used due to the risk from:
  - Overheating - due to their compact nature heat may build up in the block (which is often also of poor quality)
  - Damage to the block and socket from cables being tugged accidentally or the weight of the cables pulling on the block
- **Adapter leads –** These accommodate multiple appliances and as they have a cord, they can also be used to provide greater flexibility in the positioning of equipment. However, they can present trip hazards if the cable is allowed to trail. There is also a risk of them being overloaded if not used correctly. Therefore the amount of equipment plugged into an adapter lead should not exceed 13 Amps.
- **Extension reels -** Extension reels should be unwound fully so that heat generated in the cable is able to dissipate. An extension reel which can accommodate multiple electrical devices plugged into it must not be overloaded overloaded (see guidance below on use of adapter leads).

The installation of a sufficient number of appropriately placed sockets should be the goal. However, if adapters do need to be used these are safer than blocks. Adapter leads should not be plugged into other adapter leads

Leads should not be run under carpets due to the risk they can wear through without you noticing.

If through your fire risk assessment you have identified additional sockets are needed, these would need to be installed by an appropriately qualified electrician. Where covered by the BMP, this can be arranged through your NPS area surveyor. In all other cases a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

8.3 Mechanically generated sparks

Some processes generate sparks which may travel through the air ignite:

- Any combustible materials that they land on
- A flammable atmosphere present e.g. due to a build up of vapour being given off during the use of highly flammable liquids

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Examples of spark generating machinery include angle grinders and welding equipment. Arrangements must be in place to ensure that areas are kept clear of items that may ignite. The construction of the area must be a suitable material and cracks must be repaired. Work must be carried out so that sparks to not fall onto electrical cabling. Additional measures include the use of industrial spark guards and curtains.

Some work processes generating sparks also come under 'Hot works' and separate guidance is available for these activities (see 8.1).

9. Oxygen

Oxygen is necessary for a fire to begin and be sustained. If oxygen is removed, a fire will cease to burn and so a key part of fire safety management is limiting the amount of oxygen available to a fire. The main sources of oxygen are:

- Air
- Oxidising substances
- Oxygen supplied in cylinders

Limiting the availability of oxygen can limit the extent to which a fire spreads. Practical steps you can take to reduce the quantity of oxygen available include:

Air

- Close windows and doors (as well as other openings); particularly outside of working hours. You could incorporate responsibility for this into the 'closing up' procedure for your building
- Shut down non-essential ventilation systems when not in use
- Ensure when new air handling installations are being considered, fire safety measures are incorporated into their design
- Where this doesn't happen automatically (on activation of the fire alarm) consider whether the shut down of air handling systems can be included as part of the emergency plan (i.e. switching these down when this can be done without risk)

Oxidising substances

These are substances which, though not necessarily combustible themselves, can provide additional oxygen that would aid in the combustion of other materials in the event of a fire.

Such substances are identifiable by the appearance of an oxidising symbol in their accompanying material safety data sheet or on the packet or box they are supplied in. Material safety data sheets are available and can be requested from the suppliers of your substances. Please note; the diamond shape symbol is the new symbol for oxidising substances and the orange square is the previous symbol.

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Control measures include:

- Keeping oxidising substances away from flammable materials and heat sources. Ensure all staff are aware of the need for this
- Replace oxidising substances with less hazardous alternatives where available
- Reduce the quantity of oxidising substances on site to the minimum needed
- Review the material safety data sheets for substances on your site to check whether any of these are oxidising substances

Oxygen cylinders

Oxygen is available in cylinders and may be used in many different applications such as welding, flame cutting and for assisting those with breathing difficulties. Pure oxygen at high pressure (as it would be supplied from a cylinder) can react violently with common materials such as oil and grease. It can cause others to catch fire spontaneously. Most materials will burn vigorously in a highly oxygenated atmosphere. Even small increases in oxygen levels can enable fires to start more easily and burn hotter. Control measures include:

- Ensure oxygen cylinders are appropriately maintained by a trained contractor. Many components may not be compatible with oxygen and so it is essential only competent persons are allowed to identify and fit replacement parts
- When not in use, ensure they are stored in a well ventilated area away from flammable gas and combustible materials
- Ensure staff using them are trained/instructed in the necessary safety precautions such as safe handling, use of valves etc
- Ensure oxygen and oxyacetylene cylinders are stored securely, fastened (i.e. chained or clamped to prevent them falling over) and kept upright
- Remove sources of ignition when oxygen is being used in a way that could lead to enrichment of the atmosphere e.g. when being used by patients for breathing assistance. Consider also the possibility of leaks and the need to ensure safe areas (i.e. where there are no sources of ignition) are left around cylinders
- Smoking should be forbidden where oxygen is being used
- Keep cylinders clean to ensure there is no build up of contaminant that might react with the oxygen
- Reduce the number of oxygen cylinders on site to the minimum needed
- Make the Fire and Rescue Service aware that oxygen cylinders are present on site

10. Sources of fuel

Anything that burns is a potential fuel for fire. A building's contents, the combustible materials used in its construction and the materials used in its decoration/finish, comprise its fire load and so an important aspect of fire management is minimising the fire load where possible and separating those remaining from any sources of ignition. In a typical fire, the majority of objects would begin burning at the 'right temperature' though some ignite and burn more easily than others. For example, highly flammable substances ignite at a low temperature, just as individual sheets of paper will in comparison to a block of

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wood. When making an appraisal of the fire loading, the different types of fuel and extent of these needs to be considered. Common sources of fuel include:

- Packaging and other waste materials e.g. cardboard boxes and polystyrene
- Display materials e.g. leaflets, posters, artwork
- Books, folders and paper records
- Textiles, furniture and furnishings e.g. chairs, carpets and curtains
- Ceiling tiles
- Flammable substances such as aerosols, paints, varnish, thinners and LPG cylinders (separate guidance is available on LPG in section 10.3)
- Wood and wood shavings
- Waste materials and rubbish

10.1 Kitchen oils, fats and grease deposits

- Hot oils and fats.
- Grease collected in ducting (cooking equipment is fitted with extraction equipment which usually consists of a hood and ductwork that channels the steam etc produced and exhausts it externally. As a result of this, grease carried in the steam can collect in the ducting)

Filters and ductwork should be subject to a scheme of maintenance and cleaning to ensure the fire risk is reduced and that a fire is not able to travel through the ducting threatening other parts of the building.

Where you are covered by the BMP this can be arranged through your NPS area surveyor. In all other cases a suitably competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

10.2 Flammable liquids

Flammable liquids (particularly highly and extremely flammable ones) present a particularly significant fire risk due to the low temperature at which they will give off vapour. When such substances are spilt or containers are left open, vapours can escape or be produced, resulting in a potentially flammable atmosphere that can be ignited.

Vapour produced is also heavier than air and can travel large distances, meaning that it may collect in hazardous quantities or otherwise travel to areas where an ignition source is present.

Reducing the risk from flammable liquids

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- **Storage** - A key aspect to this is ensuring that only the quantity absolutely necessary to carry out the work is kept on site. Up to 50 litres of highly flammable liquids can be stored in a fire resisting cabinet or bin.
- **Good housekeeping** – Contaminated rags (e.g. those used to clear up spills) should be properly disposed of in a fire resisting bin and not allowed to lay around due to the potential that they will still be producing vapour that could ignite.
- **Control ignition sources** – Flammable liquids should not be stored or used near to sources of ignition where there is the potential for a flammable atmosphere to exist e.g. electrical equipment, hot surfaces.

10.3 LPG

LPG is a flammable gas that is pressurised to keep it liquefied. However, when released it readily reverts to gas. Ordinarily, the gas is odourless which would be dangerous as if there was a leak then this could result in a flammable atmosphere. Therefore, gas is normally odorised to ensure that any leaks are detected.

LPG cylinders can be either fixed to provide gas to an installation (e.g. cooking equipment) or unfixed so that they can be transported/moved around. The amount of LPG kept on site should be kept to a minimum required for business needs. Cylinders should be stored in a safe and secure place where they:

- Are well ventilated and above ground level (i.e. not in cellars or basements)
- Cannot be tampered with
- Can be kept upright with valve protection fitted
- Are away from sources of ignition (electrical equipment, smoking areas etc)
- Are away from easily ignitable materials such as rubbish and vegetation
- Are away from corrosive, toxic or oxidant materials
- Are away from cylinders containing other gases or hazardous substances (unless specialist advice has been sought)
- Cannot compromise escape routes

Storage of LPG within buildings

Storage within buildings **should be avoided where possible**. However, where there is no other option and they need to be stored inside, this should be subject to a risk assessment and the following maximum limits applied:

Building type	Maximum quantity LPG cylinders or cartridges	Comments
Offices and small and medium places of assembly	15KG	In not more than two cylinders
Residential care buildings	15KG - **Butane only**	• In not more than two cylinders. • LPG should only be used in residential buildings in exceptional circumstances

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Educational premises and large places of assembly	LPG cylinders should be stored either in the open air away from the building or in a separate building dedicated for LPG storage

Note; you should aim to reduce the amounts shown above as low as possible.

External storage of LPG
In addition to the 'General comments on LPG storage', the following guidelines also apply:

- Storage areas should not be accessible to the general public
- Appropriate warning notices should be in place confirming LPG is stored in the area, the contents are highly flammable, smoking and other ignitions sources are prohibited and the actions to be taken in the event of a fire
- Minimum separation distances may also apply and further guidance should be sought from the Health, Safety and Well-being team

Bulk storage
Bulk storage tanks and fixed installations (e.g. where used for heating buildings and cooking) need to be installed by a competent engineer (certified by Gas Safe) in accordance with industry guidance.

11. Fire loading

As well as the volume of combustible/flammable materials, the ease at which they would become involved in a fire is an important consideration. Though all fuels will sustain a fire once they begin to burn, special care is needed to ensure readily combustible/flammable materials are kept away from obvious sources of ignition.

Products of combustion
Some materials e.g. plastics, rubber, paint etc contain substances which will give off dense smoke or toxic fumes when involved in a fire. As well as the potential health implications of exposure to smoke and any hazardous by products, smoke can reach high temperatures and travel fast, which can enable fire to spread quickly and threaten escape routes.

11.1 Reducing the risk

Reduce the sources of fuel

- Reduce stocks of flammable materials where possible, particularly in publicly accessed areas (where there may be a greater risk of arson)
- Determine whether remaining materials can be stored in appropriate storerooms, storage areas or in outside buildings (away from the main building)
- Formalise arrangements for removing waste and storing it safely until collected
- Where waste is stored externally in a wheelie bin, ensure this is stored and secured (e.g. chained to a fence/post or in a compound) away from the building
- Do not store waste materials underneath external stairways or outside of fire exits. Where this is not possible, you may need to make alternative arrangements such as arranging for your waste to be collected more regularly

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- Try to ensure skips are not positioned in close proximity to your building (these should be located at least 6m away)
- Consider whether electronic records can be kept instead of paper ones so that the fire loading is reduced

Replace easily combustible materials with safer varieties
- Reduce highly flammable substances with less flammable ones
- Ensure suppliers provide suitably fire resisting materials for displays and for furniture and furnishings – Ask the suppliers for confirmation of their fire resistance
- Swap mains powered Christmas lights for a battery or USB operated type to reduce the risk and eliminate the need to carrying out future testing.

Reduce the risk of fuels coming into contact with sources of ignition
- Keep combustible materials away from sources of ignition such as electrical equipment and very hot surfaces – Section 8 covers sources of ignition
- Ensure highly flammable substances are appropriately stored in designated areas – Section 10 covers flammable substances
- Use appropriate fire resisting cabinets to store combustible materials in places where these are situated on escape routes
- Ensure smoking areas are not situated in close proximity to any storage areas

12. Using premises for sleeping

It is likely that you will need specialist input for premises used for sleeping accommodation, for example, residential schools, school hall hire to clubs for sleeping use. Even occasional use for sleeping needs to be considered in your assessment.

Virtually all school premises used as sleeping accommodation will need mains operated fire detection and warning system with automatic detection, sounders and manually operated call points. The control panel will need to be located near to the entrance of the premises which shows the location or zone where the alarm has been raised

In simple premises such as a small ground floor school, then a system of interconnected smoke alarms incorporating interconnected manual call points may be acceptable depending on the circumstances but you should seek advice form the Health, Safety and Well-being team on this point.

Adequate staff will need to be available to enable evacuation overnight e.g. assist with evacuation and ensure the building is empty.

13. Events and fire risk

For smaller events, e.g. those with a small additional number of low risk activities, it will normally be the case that existing measures are sufficient (perhaps with minor modification) to ensure that an existing fire risk assessment is suitable. Larger events are likely to see increased or new hazards which require assessing such as fire work displays. The Events Management Compliance Code P642 contains detailed information.

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14. Specific school's curriculum risks

Specific areas of risk are detailed in this compliance code such as welding, using flammable materials and cooking. Please note: consideration must be given to fire blanket provision where portable cooking equipment is being used. In addition to these where a school holds and uses radioactive substances it is expected that it will be part of the school's fire risk assessment to tell the Fire and Rescue Service where the radioactive substances are stored. This will usually be done by the school premises manager, who normally liaises with the Fire and Rescue Service on building-related fire safety matters, but you need to check it has been done. Ensure that they appreciate that these radioactive substances are low activity, roughly no more than one order of magnitude above a domestic smoke detector.

15. Means of escape and maximum occupancy numbers

Once the fire alarm has been raised it is essential those inside can get out within a reasonable time. Ensuring this happens depends on the adequacy of several factors including:

- The number and size of escape routes in place and their management
- The measures in place to detect and alert occupants to a fire i.e. fire warning systems
- The training received by staff on the emergency measures to take
- The number of people that can be accommodated in particular rooms/areas according to the floor factor

This section of the document concentrates on establishing maximum occupancy levels and ensuring there are an adequate number of well managed escape routes available to evacuate this number.

The maximum occupancy number will be different for different rooms and will also depend on the activity taking place. For example you may need to calculate the maximum occupancy for your hall for dining, assemblies and productions separately.

15.1 Establishing the maximum occupancy

If your building has been constructed recently, you should have been provided with a health and safety file following completion of the works. This may contain details of the intended maximum capacity. It is likely that this is not the figure for safe fire evacuation purposes, please therefore use this information as a starting point and follow the requirements of this section. If you do not have a health and safety file on your site but are in a recently constructed premises; your NPS area surveyor (if NPS were used) should be contacted for this information.

If there is no information available outlining the occupancy limit (e.g. for older buildings), this can be arrived by dividing the floor area in m^2 by a floor factor (which would depend upon how the building/space/room is being used). The table below provides information taken from the Building Regulations regarding appropriate floor factors.

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The floor area should exclude stair enclosures, corridors, lifts, sanitary accommodation and other fixed parts of the building structure **but** counters, display units, shelving and furniture etc should not be excluded.

If different areas of the building have different uses, different floor factors may need to be applied between areas. So, you will need to calculate the capacity of these areas individually and add them together to arrive at the overall occupancy limit.

Type of Accommodation	Floor factor
Standing spectator areas, bar areas (within 2m of serving point) similar refreshment areas	0.3
Assembly hall, general place of assembly, dance floor or hall, venue for concert and other similar events without fixed seating	0.5
Concourse, queuing area	0.7
Committee room, conference room, dining room, meeting room, lounge, staff room, restaurant, staff room or waiting room	1.0
Exhibition hall or broadcasting studio	1.5
Shop sales area	2.0
Art gallery, dormitory, factory production area, museum, workshop	5.0
Office	6.0
Kitchen or Library	7.0
Bedroom	8.0
Storage and warehousing	30.0

15.2 Ensuring there is adequate evacuation capacity to accommodate the maximum number of occupants

Once you have arrived at the initial maximum occupancy limit, you need to determine whether the escape routes available could adequately accommodate this number of people.

The capacity of an escape route is determined by the number of people that could pass through its narrowest point This will generally be the final exit through which occupants would leave a building although it could be that you have narrowing corridors or obstructions (such as fire resisting cabinets) that could cause a ‘bottle neck’. For example, if a hall has a set of double doors that lead to a corridor with the final exit door to the outside being a single door, it is the single door that is used to calculate the capacity of the escape route from the hall, not the double doors from the hall.

The table below outlines the general capacities of escape routes.

Premises risk level*	Escape route width 750mm	Escape route width 1050mm
High	80 people (in 2 minutes)	160 people (in 2 minutes)
Normal	100 people (in 2 ½ minutes)	200 people (in 2 ½ minutes)

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Low	120 people (in 3 minutes)	240 people (in 3 minutes)

An additional 75mm should be allowed for every additional 15 persons or part thereof.

Where an escape route is likely to be used by a wheelchair user, the minimum width of the escape route should not usually be less than 900mm.

When calculating the escape route capacity of a building or room please note:

- The largest fire exit should be discounted to determine whether – if this was compromised in a real fire scenario - those remaining would still provide adequate escape capacity.
- Where alternative exits from a space or room are necessary they should be wherever possible located at least 45° apart. Where this is not possible, please contact the Health, Safety and Well-Being Team for further advice.

If the escape route capacity is less than the maximum occupancy of a room such as a hall or classroom then the lower figure must be used. You may be able to accommodate a small increased percentage of the overall figure, on the basis that other management arrangements are in place to reduce the overall risk such as a high level of safety protection in place e.g. comprehensive detection to give early warning. **You should always contact the Health, Safety and Well-Being Team for advice on this if your calculation does not allow you to use a room for the intended number of people.**

When considering the maximum occupancy levels, you should also take into account the level of assistance persons will require in the event of an evacuation, the staffing levels available and other controls in place. These factors may lead you to reduce or increase the maximum number for your premise.

15.3 Premises risk levels

- **Higher** fire risk. Examples would include where one of more of the following apply:
    - There are particular fire risks making the premises – or an area within it – higher risk e.g. **significant** quantities of flammable substances are stored/used;
    - Sleeping accommodation is provided, either regularly or occasionally;
    - Significant numbers of people are present regularly (including those who may move slowly, or need assistance);
    - The layout or construction of the building would allow fire to spread quickly or remain undetected until it started to spread, e.g. there is a poor standard of fire resisting construction, there are unoccupied areas where a fire could develop undetected
    - The building is large or has multiple floors but limited means of escape
- **Normal** risk – This will be the risk level for most premises
- **Lower** fire risk area – Few premises fit within this category. Those that would include premises where **all** of the following apply:

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- The construction of the building prevents fire spread for a significant period of time and there is automatic fire detection in unoccupied areas;
- There are low occupancy levels, such as a small village school;
- Occupants are able bodied and don't need assistance;
- There is little chance of a fire;
- All occupants can leave the building within 3 minutes.

15.4 Established reasonable escape times

The established reasonable escape times based on the building risk levels are:

- Higher risk – 2 minutes
- Normal risk – 2.5 minutes
- Lower risk – 3 minutes

Using information on escape route capacities and established reasonable escape times, you can see that an escape route with a width of 750mm, can accommodate the passage of 80 people in a high risk setting in 2 minutes. As mentioned above; the largest escape route should be omitted (in order to simulate what would happen if this was compromised) when calculating escape route capacity.

15.5 Escape distances and time

Travel distances/time should not be excessive and the table that follows gives recommendations on maximum distances for premises based on their risk level. The distance should be measured from all areas of the building to the nearest place of reasonable safety which is:

- A protected stairway enclosure (a storey exit)
- A separate fire compartment from which there is a final exit to a place of total safety
- The nearest available final exit

Distances are intended to take into account the time taken for people to respond to a fire alarm and then evacuate within a reasonable time (as identified above).

The table below gives recommended travel distances based on the above risk definitions. You will notice travel distances are reduced for premises/areas which only have one escape route. If any parts of your building have only a single escape route (e.g. from upstairs or a dead end) then the single escape route distance should be used for that particular area.

Escape routes	Suggested range of travel distance: areas with seating in rows	Suggested range of travel distance: other areas

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Where more than one route is provided	20m in higher fire risk area 32m in normal fire risk area 45m in lower fire risk area	25m in higher fire risk area 45m in normal fire risk area 60m in lower fire risk area
Where only a single escape route is provided	10m in higher fire risk area 15m in normal fire risk area 18m in lower fire risk area	12m in higher risk fire area 18m in normal fire risk area 25m in lower fire risk area

The travel distances detailed are a guide. It may be possible to extend these if you have a high level of safety protection in place e.g. comprehensive detection to give early warning. Similarly, there may be occasions when these distances need to be reduced. The distances should not be increased significantly without seeking further guidance.

If travel distances are excessive in comparison to the above table, additional measures may be needed to help safeguard these routes such as a more comprehensive fire detection system. Further advice can be sought from the Health, Safety and Well-being team.

15.6 Alternative escape routes

When a fire begins, occupants should be able to turn and move away from the fire towards a place of safety. This is best facilitated through the availability of alternative escape routes leading in different directions.

Where only a single escape route is available, as highlighted in the table above, travel distances need to be reduced. Depending on the level of risk e.g. premises size (including number of floors) and existing safety measures; additional measures may also be needed to safeguard a single escape route such as:

- A comprehensive fire alarm system covering the escape route and all rooms leading into it
- Additional fire doors or structural improvements to ensure fire/smoke cannot spread to the escape route
- Staff trained in the use of fire extinguishers to tackle a fire early

15.7 Seating and gangways

Rooms and structures such as assembly halls, large meeting rooms, function rooms and marquees may on occasion require the installation of temporary seating e.g. for an audience of a performance or attendees at a conference. These should be laid out so as to ensure safe evacuation is possible. General principles to apply are:

- Gangways should be greater than 1100mm wide unless they are being used by less than 50 persons. In such cases, the gangway should not be less than 900mm
- Where more than 50 seats are being laid out; they should be secured together in lengths of at least four seats and not more than twelve

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- Where seating is being provided for over 250 people; the rows of seats that flank the front and back rows (and the front and back rows of any cross cutting gangways) should be fixed to the floor (note; only the end seats of the row need to be fixed to the floor if all seats on the row are secured together)

Where seats are secured together, it should not be possible to separate them or for the row to be brought out of line by pushing one of the chairs in a row.

Where seats cannot be secured by screws, an alternative means of securing them to the floor should be utilised such as floor bars.

A minimum of a 300mm seat way width (the narrowest point between the back of a chair and the front of the seat behind it) should be provided. Ideally – and space permitting – though, the layout should be such that the gap significantly exceeds this and ensures that rows are served by more than one gangway. Where only the minimum gap is provided, the number of chairs should be limited, especially where the row is served by only one gangway. The table below shows the recommended maximum number of seats in a row based on the seat way widths and number of gangways.

Seat way width in mm	Maximum number of seats in a row	
	Gangway on one side	Gangway on two sides
300 to 324	7	14
325 to 349	8	16
350 to 374	9	18
375 to 399	10	20
400 to 424	11	22
425 to 449	12	24
450 to 474	12	26
475 to 499	12	28
500 or more	12	Limited by the escape travel distance

15.8 Inner rooms

In some instances, the only way out of a room might be through another room. This means that a fire starting in the inner room could threaten the escape of those needing to pass through it. Where inner rooms exist one of the following is required:

- A vision panel between the two rooms so that occupants of the inner room could see a fire beginning
- A large enough gap (at least 500mm) at ceiling height between the inner and dividing rooms (above the separating wall/partition) so that smoke would pass through and be seen
- An automatic smoke detector in the outer room that would be activated if a fire starts and so notify those in the inner room

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In addition:
- Numbers using the room should be restricted to 60
- No more than one inner room should need to be passed through
- The outer room should not be of high fire risk

15.9 Further considerations when assessing the adequacy of escape routes

Some further practical considerations in determining whether your building has adequate means of escape available include:

- If one of your escape routes became unavailable could everybody still get out i.e. are there a sufficient number of alternative escape routes?
- Are escape routes being used for storage which could become involved in a fire or otherwise hinder egress?
- Do occupants have to travel long distances to exit the building?
- Are escape routes protected by fire resisting structures?
- Are there alternative escape routes that would be used by those evacuating upper areas and are these protected?
- Are fire exits so close together that if one was compromised, then the other is likely to be also?

The answers to these questions will also be important when developing your evacuation plan as identification of suitable escape routes would need to form part of this process

15.10 Management of escape routes

Poor housekeeping can result in escape routes being used inappropriately as storage areas. As well as providing combustible materials that might become involved in a fire, storage on escape routes can also present obstructions that reduce the available escape route width and prevent safe and quick egress.

Therefore, escape routes need to be properly managed and regular checks made to ensure this is happening. This includes:

- Keeping escape routes clear of combustible materials and sources of ignition including areas under and around staircases leading from upper floors – consideration must be given to avoiding extensive combustible displays in escape routes.
- Not blocking fire doors and final exits
- Ensuring there are no trailing cables running across escape route floors

15.11 Assembly points

Assembly points should be safe areas in which occupants can gather (and for example, a roll call be carried out or further instructions issued etc) while a fire situation is investigated or controlled. Wherever possible these should be away from the building (in case of explosion, glass shattering etc) and traffic. Signage indicating assembly points may be needed where there may be staff and visitors unfamiliar with where this is.

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Assembly points should be large enough to accommodate all of the occupants of the building. You may wish to create more than one assembly point to achieve this. This may also be helpful where there are final exits at different sides of the building.

16. Fire resisting structure

Fire resisting structures are intended to help restrict the spread of fire and smoke through a building and would typically consist of fire resisting:

- Doors
- Walls
- Ceilings/floors

Examples of when a fire resisting structure might be needed include where:

- Significant areas of high fire risk need to be separated from the rest of the building
- Escape routes need protecting e.g. a corridor serving as the sole means of escape from the building (or part of it)
- The evacuation plan requires progressive horizontal evacuation to an area of relative safety i.e. to an area separated by fire resisting construction
- Needing to limit the extent of the damage caused to a building

Staircases and escape routes are often constructed within a fire resisting structure. This is so that a fire cannot spread quickly and threaten escape before evacuation is achieved. If refuges are used as part of an evacuation strategy for those with mobility issues from upper floors, it is also common to have this area protected by a fire resisting structure.

16.1 Identifying fire resisting structures

In many buildings, this may often require some level of further exploration. For example, where there are suspended ceilings it may not be possible to see whether the walls extend to the floor above without lifting a ceiling tile. Additionally, identifying the construction materials to determine whether a structure would be adequately fire resisting, can be difficult without a greater level of expertise.

It may be that you have plans for the construction of your building though care should be taken in relying on these, especially if they are old and changes have subsequently taken place since their preparation.

Reference should be made to your fire plans regarding fire resisting structures, although be aware that where access to voids and roof structures were not possible an assessment of the fire resisting capacity will not be in place. Additionally any building changes made since the creation of the fire plan will not be included in the fire plan unless you have commissioned its update.

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16.2 Factors that may impact on a structure's fire resisting capability

Maintaining a fire resisting compartment's structural integrity is key to ensuring it remains able to withstand/resist the spread of fire and smoke. Factors which would influence structural integrity include:

- **The materials used in its construction** – Some materials withstand fire better than others. For example, a solid wall constructed of concrete would better withstand a fire than a hardboard partition

  Where an area needs to be fire protected, it should be of appropriate construction, including any doors and glazing that are used within its construction. For example, glazing that is not of a fire resisting standard (the most common type of fire resisting glazing is 6mm Georgian wire) may fail quickly during a fire and let smoke into an escape route
- **Any defects** – Over time, deterioration (e.g. cracks and crumbling) may occur or work take place (e.g. holes drilled through walls to accommodate IT cables) to a fire resisting structure that may lessen its capacity to resist fire and smoke spread
- **Quality of construction/installation** – If the structure was not constructed to an appropriate standard it may not adequately serve its fire resisting role. For example, poorly installed fire doors may have large gaps through which smoke could spread. Similarly, walls supposed to be fire resisting may not have been constructed so that they extend fully to the next floor without a break
- **Misuse of fire doors** – Often these are propped open or may have been damaged/twisted e.g. by being kicked open or pushed open with trolleys. This means they may not provide an adequate seal within the door frame to prevent smoke/fire passing through.
- **Changes in use** – Over time, the use of different parts of a building may change or the layout of the building modified. For example, a suspended ceiling may have been added to a room designated as a fire resisting compartment. Electrical cabling may also have been run above the suspended ceiling to power the lighting units added. Therefore, what may originally have been a 'sterile' environment is subsequently fitted with a source of fuel (the ceiling tiles) and ignition (overheating or malfunctioning light units).

16.3 Reducing the risk of fire resisting structures being compromised

There are many actions that you can take to ensure the continued integrity of fire resisting structures. For example, when considering the doors, walls, floors and ceilings within your building, ensure that:

- Following work carried out by contractors, checks are made to ensure holes or other damage caused by them has been 'made good' with suitable material e.g. has been appropriately fire stopped to prevent the passage of smoke/fire
- Significant signs of damage or deterioration are reported to your property surveyor or repaired

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- The condition of fire doors is monitored during your premises inspections to ensure they close properly (e.g. they have not been damaged and are not being propped open). You should also look out for any signs of damage or deterioration to other fire resisting structures
- Ensuring readily combustible materials are not fixed to or used to decorate the surfaces of fire resisting structures

16.4 Arranging for the installation or repair of fire resisting structures

If, through your fire risk assessment or periodic inspections undertaken, you identify that improvement works are required to your building (either the installation of additional structural features or repairs to existing structures); this would work need to be undertaken by a competent engineer.

Where you are covered by the BMP this can be arranged through your NPS area surveyor. In all other cases a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

17. Fire doors and final exits

17.1 Fire doors

How fire doors work

Fire doors provide a physical barrier to fire and the gases that they generate. New or recently purchased fire doors will incorporate intumescent strips (expanding seals) that are fitted either to the door frame or to the door itself. These expand when heated sufficiently so that they fill the gap between the door edges and frame.

Fire doors are also often fitted with cold smoke seals as a barrier to smoke produced at ambient temperatures (e.g. during smouldering fires) that would not be hot enough to heat and expand the intumescent seals. Therefore, smoke seals are especially important where smoke could threaten escape routes e.g. by reducing visibility.

When they might be needed

Fire doors serve two main functions:

- Maintaining the integrity of fire resisting compartments that have been constructed to protect the building and limit the size and spread of fire.
- Allowing access to protected escape routes without causing a loss in fire resistance

Identifying fire doors

This is often difficult to do as fire doors installed some time ago may not have been labelled. New fire doors should have information provided to confirm their specification.

Where fire doors have been installed recently, you may have copies of certificates or guarantees provided by the installer confirming their standard. Alternatively, if your building was recently constructed, this information may be available in your health and safety file for the building.

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On occasion, a non-certified door may be designated a nominal fire door by virtue of the fact that it could be expected to hold back a fire for a given period of time. This is not an easily made decision though and would require an informed judgement to be made by a sufficiently competent person. If you identify such doors you should seek advice from Health, Safety and Well-being.

Signs such as 'Fire door – keep shut' and automatic closers were also often fitted to doors which may not have been fire doors and therefore such badges/signs are not always a reliable indication of a door being a true fire door.

Opening direction
Fire doors should open in the direction of travel in most cases to aid smooth flow of pedestrian traffic. However, this is not always required where there are less than sixty people expected to use it or where doing so might lead to additional risk e.g. by opening into a busy escape route.

Fire door signage
Signage should be fitted to fire doors as detailed below:

'Fire door keep shut'	When fire doors have been fitted with self-closing devices
'Fire door – keep locked'	When fire resisting doors fitted to cupboards, doors and service ducts
'Fire exit – keep clear'	Where final exit doors may become blocked e.g. by cars parking outside of door

Signage should be obtained through your usual procurement means.

Factors that may lead to a fire door not working when needed
When called upon in a fire scenario, fire doors installed may not serve their intended role for many different reasons. Commonly, these would be due to fire doors being:

- Misused e.g. by being propped open where fitted with automatic closing devices
- Damaged
- Poorly installed

Misuse by propping open fire doors fitted with automatic closers
Fire doors needed to protect escape routes or which have been fitted to help form fire resisting compartments, should be fitted with automatic closers that are capable of closing the door from any angle.

However, this sometimes results in fire doors being propped open either when additional ventilation is required or when loads need to be regularly transported through otherwise closed fire doors. This has obvious implications for fire safety as a fire door propped open would allow the spread of fire and smoke; potentially threatening the ability of occupants to safely escape a burning building.

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Even temporary propping of fire doors should be discouraged as a temporarily propped door may end up becoming permanently propped if the person forgets to return and close it. Additionally, propping of doors may become seen as accepted practice.

If you have problems in your building with staff propping fire doors, measures that should be considered include:

- Ensuring staff feel confident asking colleagues to hold a door open for them
- Using a trolley to move lots of items in one go rather than one at a time; therefore reducing the burden of having to repeatedly open fire doors
- Reminding staff on the purpose of fire doors and the risks of propping them open

Alternatively, on the basis of the fire risk assessment, it might be determined that:

- The propped door doesn't need to be a fire door e.g. it is not being used to protect a single or downstairs escape route or to maintain a fire resisting compartment etc and so an automatic closer is not needed. **Important: Further guidance from Health, Safety and Well-being must be sought before making any decisions as to whether a fire door can be declassified.**
- 'Hold open devices' would be appropriate (see later 'Hold open devices' section)

Damage/deterioration and modifications

The effectiveness of fire doors can also deteriorate over time. Damage can be caused by trolleys being banged into them or by doors being kicked open/closed. Building movements can lead to doors becoming misaligned. They are also sometimes retrospectively fitted with accessories such as locking devices (requiring holes to be drilled) which can cause damage to the door or otherwise reduce its capabilities to withstand fire/smoke spread. Carpets or other floor surfaces may also have been fitted that do not allow the doors to close fully

It is important to note that fire doors usually come as an assembly with the combined parts designed and tested to meet a required standard. Any retrofitting of parts or modification can therefore result in the original standard not being achieved in a fire situation.

The condition of fire doors should be monitored during your premises inspections to ensure:

- They close properly (e.g. have not been damaged and are not being propped open)
- They remain in good condition and that the gap between the door and frame has not increased significantly (e.g. through any movement)
- Intumescent strips and – where fitted – smoke seals remain in good condition

Poor installation

Fire doors will not perform well if they have been poorly installed. Examples of poor installation might include:

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- Gaps being too big between the door edge and frame (3mm +/- 1mm is suggested as an acceptable gap, although this may need to be larger if smoke seals are fitted) or the gap sizes being uneven
- Excessive space beneath fire doors (the threshold). 8mm is the recommended threshold gap (though older doors may have a 10mm gap). Where the door is a fire and smoke door, the gap should not exceed 3mm
- Hinges being poorly fitted so that doors drop
- Doors not closing fully as the gap is too small between door and frame

Installing new fire doors or repairing/replacing existing doors
You may determine following your risk assessment that installation of a new fire door is needed where not currently in place e.g. because an escape route needs to be protected.

Similarly, during periodic checks, you might identify doors have been damaged or poorly fitted in the past and therefore a new door is needed.

This work should only be carried out by an appropriately qualified person. Where you are covered by the BMP this can be arranged through your NPS area surveyor. In all other cases a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

17.2 Hold open devices

Electromagnatic hold open devices
These devices hold open doors that have been fitted with self closers. Once the fire alarm has been activated the door is released and is allowed to close. They can only be fitted where an appropriate automatic fire alarm system (which incorporates smoke detectors on escape routes) has been installed within your premises. The circumstances in which their use may be considered appropriate include where self closing doors are used by significant numbers of people or people with impaired mobility.

The automatic device should release the door in the event that:
- Smoke is detected by a detector
- The fire alarm is operated manually (e.g. by pressing a call point)
- The fire alarm fails
- There is an electrical power failure

If hold open devices are needed, this should be identified through the fire risk assessment process and any systems should be designed and installed by a competent person.

Dorgard units
These are sometimes used as an alternative to ‘traditional’ hold open devices described above as they do not have to be wired into the main fire alarm system and tend to be cheaper. They are fitted to the bottom of a door and hold it open using a plunger that extends to the floor.

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Though not wired into a fire alarm system*, they do require one to be in place as the Dorgards are activated by sound emitted from fire alarm sounders. If the sounder activates, the plunger lifts, allowing the door to shut. Advice should be sought when installing these to ensure their appropriateness and necessity. As a general rule, they should not be fitted in higher risk situations such as on fire doors protecting:

- Single staircases
- Other critical means of escape e.g. fire doors leading from a dead end situation

A version of the Dorgard unit is available that utilises a device situated in close proximity to a fire alarm sounder and which – once activated by the sounder - broadcasts wirelessly to all linked Dorgard units, causing them to operate. This alleviates some of the problems associated with the standard Dorguard unit needing to be in sufficiently close proximity to an alarm sounder

*Another version operates on the basis of a broadcasting unit being hardwired into the alarm control panel and which activates upon the fire alarm being triggered; broadcasting a signal wirelessly to all Dorgard units and causing them to operate. This also offers additional safeguards by ensuring doors release upon a fault developing in the fire alarm system.

17.3 Security of doors on escape routes

Where some form of security device is needed, the type used needs to fail to safety i.e. where a failure of the electrical mains or activation of the fire alarm would result in the doors automatically becoming unlocked. Examples of locking devices that may be problematic in these cases include:

- Key and lock – Keys can go missing or locks be changed but old keys remain in place and keys can also be fumbled and dropped in a panic
- Mechanical key pad devices – These are not linked to the alarm or a power failure. They rely on remembering the code during an emergency (new staff and visitors may not know what this is)

Alternatives to these types of devices are electrically powered devices (with normal access being gained by swipe cards or key codes) that are linked to and release on activation of, the fire alarm, a power failure or when a manual override device is pressed (e.g. a green door release button). Another option that may be sufficient depending on your circumstances is to alarm a door into a restricted area.

If security devices are required this should be considered within your overall evacuation plan and an appropriate system discussed with and designed by a competent engineer so that escape is not restricted.

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17.4 Final exits

These are final doors on an escape route which open into a place of safety (i.e. outside the building) and as such **are not the same as fire doors used to protect compartments or escape routes**. They should be capable of being opened quickly in an emergency. This means that while the building is being occupied, final exits should be kept unlocked. If for reasons of security external access needs to be prevented fire exit doors can be fitted with a device to open them from the inside only.

In buildings where members of the public or others who are not familiar with the building are present, panic exit bar devices should be fitted such as push or touch bars. Premises with limited numbers of staff or accessed by others familiar with the building, may use alternative devices such as push pads or lever handles.

Final exit doors also need to be kept clear either side so that they are available for use when needed. Commonly seen scenarios include equipment stored in corridors in front of doors and also cars parked outside doors preventing them from being opened.

18. Evacuation

18.1 Vertical Evacuation

This refers to the upwards or downwards evacuation of occupants from an upstairs or lower ground/basement area. Typically, this will be by way of stairs or lift.

The movement of those needing additional assistance (e.g. wheelchair users in evac chairs) in their vertical evacuation is covered in separate guidance, which also includes the use of refuges.

Stairs

This will be the most commonly used means of vertical evacuation. Normal measures taken to ensure the continued safety of stairs will also help ensure they're safe to use during a fire e.g. clearing up spills and ensuring handrails, stairs and nosings are in good condition.

Storage of items at the bottom of (or underneath) stairs can be an obstacle to quick egress. Where stairs are designated escape routes, combustible materials should not be stored on or under them unless accommodated within a suitably constructed fire resisting structure. It is common to see recycling bins, tables etc stored under staircases and this should be avoided.

Similarly, where external stairs have been identified as an escape route, wheelie bins, skips etc should not be stored in close vicinity as any fire beginning (e.g. through arson) would render the escape route unusable.

External escape staircases should be kept free of snow, ice, leaves and mud.

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18.2 Progressive horizontal evacuation

This method of evacuation is only to be adopted in specific settings such as schools with a high proportion of pupils need 121 assistance to evacuate. Evacuation is carried out by moving away from the affected area to a fire compartment until the fire is dealt with or by moving to another compartment or to total safety. **If you need to use progressive horizontal evacuation you must seek advice from Health, Safety and Well-being.**

18.3 Lifts

Ordinarily, lifts should not be used for fire evacuation unless they have been appropriately designed and installed for this purpose. Doing so may have serious consequences if the lift was to fail during a fire while occupants were inside. Specially designed fire evacuation and fire fighting lifts have additional features that normal lifts may not have such as a secondary power supply and fire resisting cab and shaft. Therefore, the use of non-fire safe passenger lifts should **not** be incorporated into your fire evacuation strategy. This should be highlighted by the use of signage (red prohibition sign) in the immediate vicinity of the lift saying “In the event of fire – Do not use this lift”.

In some instances, it may be possible that ‘normal’ passenger lifts for fire evacuation can be incorporated within a pre-planned evacuation strategy. However, due to the risks involved and technical information needed on the construction and operation of the lift; such a decision must only be implemented following advice from a competent person and the completion of a comprehensive fire risk assessment justifying their use.

Some lifts are designed to go to ground (or other safe floor) and their doors open should one of the following conditions occur:

- The fire alarm is activated
- The power supply is cut to the lift e.g. due to an electrical fault

The main reasons for this is to ensure any passengers already inside are not trapped during a fire and also to prevent the lift being available for anybody else to enter.

Managers, premises managers or people responsible for developing evacuation plans must ensure they understand the type of lifts that exist in their premises and how they will behave in emergency situations so that these details can be incorporated into the evacuation procedures. If the building was recently constructed, this information may be available in your health and safety file for the building. Additionally, you should contact your NPS area surveyor where you have one or the installer for further information on the operation of your lift.

If your lift is unsuitable for fire evacuation and does not ‘ground’/’fail’ to safety in the scenarios described above, a plan will need to be developed detailing how you will check for and assist anyone trapped inside in making a safe exit. This might involve training your own staff in how to affect a lift release or by using the services of a lift engineer. It is

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important to note though, a lift engineer may not be available to attend a site in an emergency and is unlikely to enter a building in a fire situation.

Lift considerations when moving into or designing new buildings
It is easier and more economical to incorporate suitable fire evacuation lifts (or lifts which go to ground) during a lift's design and installation stage than it is to try and modify unsuitable lifts retrospectively. Therefore, opportunities for installing lifts that enhance fire safety (by being available for evacuation) or at least do not hinder it (by trapping people inside), should always be considered when undertaking building refurbishments, moving into new accommodation or when designing new buildings. The installation of such lifts should be considered bearing in mind the current and potential future users of the building.

It is important to note that **the Fire Service must not be relied upon to rescue passengers from a lift**. Emergency release of passengers by the Fire Service may also in some instances result in damage being caused to the lift.

19. Fire evacuation/emergency plans

In the event of a fire, you need to have a plan in place detailing actions to be taken to ensure everybody (including visitors) is able to get out of the building safely. This plan should take into account the findings of your fire risk assessment. The nature of the building, the activities carried out and the numbers and needs of staff and visitors will determine the complexity of your plan and the resources required to implement it.

A fire evacuation plan is not the same as a fire action notice which is often present by fire exits and outline the key 'at a glance' instructions that a room or building's occupants might need in the event of discovering a fire or the alarm being raised e.g. call 999, leave the building, go to the assembly point etc. The evacuation plan will be more comprehensive and should form the basis of the training provided to staff. It will include areas such as those detailed below:

19.1 Key elements of a fire evacuation plan

- The specific roles and responsibilities of individuals or groups of employees in the event of an evacuation
- The means of raising the alarm and contacting the Fire Service
- How the evacuation should be carried out
- Identification of key escape routes
- Location of assembly points
- Procedures for checking the premises has been evacuated
- Where appropriate, the isolating of machinery, processes and energy sources
- The location of the gas and water services
- The fire fighting equipment available and the policy on its use
- Key safety information that needs to be given to the Fire Service such as the location of any gas cylinders as identified by your fire risk assessment

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- Responsibility for liaising with the Fire Service on their arrival.
- Any contingencies needed to ensure the evacuation plan can still be implemented e.g. during staff absence, special events etc

For lower risk, simple premises a template fire evacuation plan is available which can be used as the basis for development of your own fire evacuation plan. However, even higher risk buildings can use this as a starting point.

19.2 Fire evacuation roles and responsibilities

You may need to ensure there are staff available who have had additional training to perform a specific role in fire management including during an evacuation. These roles, including the names of those assigned to a role, should be identified within the evacuation plan so that it is clear about who is expected to do what. This could include:

- Premises/line managers – For overseeing daily fire management including ensuring fire risk assessments are undertaken and other staff are provided with appropriate training
- Fire wardens/marshals – For co-ordinating and implementing the evacuation plan in an emergency (including any personal emergency evacuation plans) and monitoring site conditions. Premises managers may perform this role in smaller buildings
- Fire extinguisher operators – For tackling (where safe to do so) fires at an early stage which, might otherwise threaten escape of those inside. Fire wardens often also perform this role though where sufficient staff resources permit, it is usually best to keep the two roles separate so that the warden can concentrate on evacuation
- Evacuation assistants (e.g. evac chairs) – For assisting those with mobility issues needing support. Fire wardens often also perform this role

If they discover anyone needing assistance, the pre-identified measures identified in the Personal Emergency Evacuation Plan (PEEP) or General Emergency Evacuation Plan (GEEP) would then need to be initiated (see P607a for more information).

19.3 Planning for/evacuating those with additional needs

Where staff and regular visitors are identified as having a specific need or require support during an evacuation, a Personal Emergency Evacuation Plan (PEEP) must be produced to identify the specific needs of the person, their location on the premises, the nature of the help they require, who is responsible for providing that help and the equipment that will be used to support them, along with its location. A standard format for a *PEEP* and *guidance* on producing one is available.

Where the premises is open to the public or casual users standard evacuation plans known as General Emergency Evacuation Plans (GEEP), should be developed for such visitors to choose from when entering the building. Standard plans should take account of: the types of escape that can be made available; building fire systems; operational procedures in the building; movements around the building and the existing fire plan. Further guidance on the development of standard evacuation plans is also available.

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Separate guidance is available regarding putting together evacuation plans for those requiring additional assistance. This is document P607a - 'Emergency Evacuation Arrangements (for people with disabilities or requiring additional support)' and covers 'Personal Emergency Evacuation Plans' and 'General Emergency Evacuation Plans'.

19.4 Staff resources

The number of trained personal available must be adequate at all times the building is operational. You will need to consider shift work, holiday cover and illness as part of your calculations.

Part time staff, seasonal staff, volunteers and shift workers

It is important to include these groups when putting together your emergency plan and when providing training to staff. In premises with a high staff turnover, there is the risk that staff employed at short notice (including temporary staff) may be made responsible for parts of the building – or even multiple buildings – without having been given the time or training needed to familiarise themselves with either their role or the building. This is particularly important in publicly accessed buildings where these staff would be expected to help and provide assistance to visitors. Therefore, it is essential to plan for new starters to receive this training at a very early stage so that they are provided with adequate training before being made responsible for part of an evacuation plan.

If shift work occurs within a building or you hire the building out in the evening the risks and procedures may differ due to the likelihood of lower staff levels.

19.5 Contractors

Contractors should be provided with details of escape routes and the sound of the alarm when beginning work on site. This is especially important where they are working in isolated parts of a site. Form F605a is a 'Contractor Site Information Sheet' which should be used to provide this information.

19.6 Reviewing evacuation plans

Fire evacuation plans should be reviewed annually and this is best done at the same time as you review your fire risk assessment. Any changes identified in your fire risk assessment can then, if necessary, be fed into your plan. This does not mean the whole plan needs to be re-written as it may be all that is needed is to read through it, check it is still appropriate/up to date and then sign it off to confirm.

A plan may also need to be reviewed following changes to the building and/or its use e.g. creation of new escape routes, addition of sleeping accommodation, use of flammable substances, substantial changes in occupancy levels etc. It may also be that as a result of a poorly executed fire drill or reaction to a false alarm, you determine adjustments are needed.

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19.7 Fire drills – testing the plan

Fire drills are your opportunity to test your evacuation plan and see whether staff adhere to the measures set out within it. As a result of a fire drill, you may identify additional measures are needed or that staff need additional training. Or you may decide everything is fine and no further improvements are necessary.

They should be undertaken at least yearly and details should be recorded in your fire log book to confirm they have taken place. A fire log book template is available for your use.

It is good practice to trial what would happen if an escape route became unavailable (e.g. due to smoke/fire compromising the favoured escape route) so that an alternative had to be used. This is particularly important in larger buildings to test occupants' knowledge of alternative escape routes and also to check the impact blocking an escape route would have on escape (time taken and ease of movement).

Following a fire drill you should speak to staff involved, particularly those with key roles and ask whether they have any concerns at the way the drill went or observations on how it could be improved.

20. Fire warning systems

Fire warning systems are required so that when a fire begins, occupants are alerted and able to commence the evacuation plan.

In simple premises, a bell, whistle, gong or shout might be all that is needed as a warning. In more complex buildings electronic sounders installed in different parts of the building so that the fire warning would be audible throughout; are likely to be needed.

In these instances the alarm system would be activated either manually or automatically

20.1 Manual system

Activation would be through an occupant of the building discovering a fire and pressing a manual 'call point' button.

For buildings where all rooms would be routinely occupied (i.e. where a fire could not begin undetected), a manual fire alarm system may be appropriate.

However these systems are unlikely to be adequate in buildings where there are unoccupied areas as a fire could begin and grow unnoticed; especially those with limited means of escape.

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20.2 Automatic system

Activation would be by smoke (or heat in some instances) detectors detecting a fire and triggering the alarm. Automatic systems will also have manual call points so that the alarm can still be triggered by somebody discovering a fire.

Automatic systems for the purposes of life protection
In most cases, during normal working hours, a fire is likely to be detected by the building's occupants who will raise the alarm. However, as described in 11.1, where there are unoccupied areas in the building or common corridors and circulation spaces that fire and/or smoke could develop in and so compromise escape; an automatic fire alarm system may be more appropriate.

It is also important to consider how the building is used and the levels of occupancy at different times of the day. For example, outside of core hours, lone workers may not have the benefit of colleagues present to detect a fire and raise the alarm. In such circumstances it might be that you identify on a risk basis, the need for localised automatic detection to serve the purposes of protecting the escape route for such staff;

For the purposes of property protection
Even if your risk assessment determines automatic fire detection is unnecessary from a life safety perspective; you might decide such a system is necessary to safeguard the property or contents. For example, though a fire beginning in a back area may not compromise escape, it may be that if undetected early, it could cause significant damage to the building (and/or its contents) and threaten business continuity.

20.3 Additional functions of some electronic fire alarm systems

Depending on how sophisticated the system is; activation of the fire alarm, as well as causing sounders to operate, may initiate further events. For example:

- A message being sent to the Fire Service* or alarm monitoring company, notifying them of an activation
- Doors held open by magnetic devices being released
- Doors kept closed with electronic security devices being released to allow egress
- Ventilation systems being shut down or ductwork being stopped (to restrict the supply of fresh air to the fire)
- Certain processes being shut down
- Activation of other evacuation aids e.g. flashing beacons for those with hearing difficulties or working in noisy environments

*Note though: From 1st June 2013, Norfolk Fire and Rescue Service has changed the way it responds to alarm call outs from certain premises including commercial premises, offices, shops and public buildings. Under the changes, fire crews will no longer automatically respond to calls originating from automatic fire alarms during the day within the working week unless there is a confirmed report of fire at the premises.

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During week day periods (Monday to Friday), between the hours of 0700 and 1900 hrs, calls from Automatic Fire Alarm systems from these premises will need to provide confirmation that a fire (or perception of fire i.e. a smell of smoke) is at the premises via a 999 call before an emergency response will be made by NF&RS.

Outside of these hours and during bank holidays an emergency response will remain regardless of premises type.

20.4 Determining whether a fire alarm system is needed

You will identify whether your building needs a fire alarm system through the risk assessment process. Factors to consider when determining if an automatic system is required include if:

- Parts of the building are often unoccupied
- Lone working takes place in isolated parts of the building
- The building is publicly accessed
- The building is accessed by persons who may need early warning and assistance to evacuate e.g. by people of different ages and levels of mobility
- There are large quantities of combustible materials that could facilitate the quick spread of fire
- There are escape routes that need to be protected (e.g. rooms leading from ‘dead end’ situations or single staircases leading from upstairs areas) for which early warning is crucial

20.5 Installing a fire alarm system

Fire alarms installed should conform to the appropriate standard for commercial premises. Therefore, if a fire alarm is required, an appropriate system would need to be designed and installed by a competent engineer.

Where you are covered by the BMP this can be organised through your NPS area surveyor. In all other cases a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

20.6 Testing of fire alarm systems and record keeping

Frequencies for testing the fire alarm systems, including call points, are included in the fire log book. You should identify the checks necessary for your site and ensure these are undertaken at the required frequencies. Details of tests need to be recorded in your fire log book.

21. Emergency lighting

In an emergency, those inside your building need to be able to escape safely. This means ensuring adequate lighting is available. When a building is used during the hours of darkness or there is no natural lighting; it will usually be necessary to ensure back up is

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available for normal lighting. This is generally achieved through the provision of emergency lighting.

21.1 Areas where emergency lighting is required

Emergency lighting systems usually cover:

- Escape routes
- Changes of level
- Fire exit doors and fire escape signage
- Stairways
- Other areas of importance including external escape routes where needed to exit the building or to see assembly points
- Fire fighting equipment and call points
- Lifts

21.2 Different types of emergency lighting

The main types of emergency lighting tend to be:

- Maintained – Where they are permanently on (i.e. producing light)
- Non-maintained – Operate (produce light) when the normal lighting fails

Both types upon failure of the normal lighting would operate using an alternative power supply. Depending on the system, power could come from a central bank of batteries, a generator or as is more common, a battery built into the emergency lighting unit itself.

21.3 Identifying whether there is emergency lighting in your building

This is not always easy to know though there are several ways in which you can find out. For example, if emergency lighting has been installed recently, you may have copies of certificates or plans provided by the installer or NPS outlining the work carried out and indicating their position. Alternatively, if your building was recently constructed, this information may be available in your health and safety file for the building.

Other ways of telling might be:

- The presence of a slot in which a ‘fish key’ is inserted to test the lighting
- During a power failure (or power being cut), emergency light units activating or staying on when the normal lighting has ceased to operate
- A small, green or red light visible in lighting units (indicating power is being supplied and is charging the unit’s battery)
- A contractor visiting to test the units and providing you with information on where the emergency lighting units are located

21.4 Arranging for the installation of an emergency lighting system

If through your fire risk assessment you have identified emergency lighting is needed because there is not adequate borrowed light in the event of a power failure, a suitable system would need to be provided by a competent engineer. Where you are covered by

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the BMP this can be arranged through your NPS area surveyor. In all other cases a suitably qualified and competent contractor would need to be appointed using the Procurement and Commissioning Compliance Code P605.

21.5 Testing emergency lighting

To ensure the emergency lighting works when needed it is important to ensure it is regularly tested. Requirements for this (including those that should be undertaken by a responsible person and those that should be undertaken by a competent contractor) are included within the fire log book. **It is important you ensure these schedules are adhered to and that details are being recorded in the fire log book.** All testing, including by contractors should be recorded in this log book.

Units are often tested by way of a test key being inserted into a narrow wall switch. If you are unsure how to test your units though, further information should be sought from the emergency lighting engineer on their visit or from your NPS area surveyor.

21.6 Other lighting that might be considered depending on your risk assessment findings

Borrowed lighting

Where a building has a reliable source of borrowed lighting nearby, this may be sufficient to illuminate escape routes inside your building. Reliable borrowed lighting includes for example, public street lighting. It should be adequate to illuminate those areas usually catered for by emergency lighting.

Torches

In certain circumstances, you may determine these to be suitable for your premises though careful consideration should be given to whether they would always be available in an emergency and be easy to locate once the building is already in the dark. If this method is used somebody must be responsible for keeping them charged and available in an emergency. A wind up torch is an alternative. Any torches selected must be adequate to illuminate changes in levels, stairs and other hazards in the building. Torches are not appropriate for buildings where there may be large numbers of staff, visitors, or others requiring additional assistance to evacuate.

22. Fire signs and notices

When signs are needed

Fire related signage must be used where necessary to help make those inside a building aware of the escape routes to follow, the actions to be taken in the event of a fire and the location of fire safety equipment e.g. extinguishers.

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Most premises will require some directional signage except in the cases of very small buildings that have fire exits in regular use and where trained staff are always available. However, the nature of the undertaking e.g. size and complexity of the building, number of escape routes, quantity of fire safety equipment etc; will determine the extent of the signage necessary.

Additional signage may also be needed to:
- Provide warnings on the presence of fire hazards
- Highlight any prohibitions
- Highlight any mandatory requirements

In general, fire equipment and safe condition signs are most relevant to fire safety but you will see below how other signs may be necessary in helping manage fire risks.

Positioning and visibility
Where signage is needed it should be positioned where it can be easily seen. This means that signs should not be hidden e.g. behind shelving, displays etc. Directional fire signage should be:

- Positioned to highlight the escape route when the nearest exit is not obvious. The next sign should always be in sight
- Fixed above doors in the direction of escape and not to the door (where they would not be visible if the door is opened)
- Mounted 2.0-2.5m from the floor when fixed above doors and 1.7-2.0 metres when fixed to walls

Signs also need to be adequately illuminated at all times when they may need to be used in assisting with escape. In most circumstances this would be achieved through ordinary lighting with emergency lighting operating in the event of a power failure.

Language
Where your building is regularly accessed by those whose first language is not English, you may need to consider translating key information into more than one language. It is important that where this happens, the instruction precisely translates the existing signage provided.

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Sign type	What are they used for	Typical uses	What do they look like*	Example
Fire equipment	To indicate the location of fire equipment such as extinguishers, call points, sprinkler controls, dry risers etc	- Fire extinguishers - Fire alarm call points - Fire blankets - Dry or wet riser points	Rectangular or square in shape with a white pictogram on a red background	
Safe condition	To indicate the presence or location of safe conditions	- Directional signage - Fire assembly - Fire exit - 'Push bar to open' - Refuge point	Rectangular or square in shape and feature a white pictogram on a green background.	
Prohibition	They indicate where there is a prohibition on something. With regards to fire, this might be that naked flames in a certain area (e.g. where there is a flammable atmosphere) are prohibited.	- No smoking – Note: This does not refer to the signs needing to be displayed at the entry point of all workplaces - 'In the event of a fire – do not use this lift'	Round with a white background and a red border and crossbar. Any symbols should be black.	

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Mandatory	To convey actions that must be carried out e.g. fire doors must be kept shut, final exits must be kept clear etc. They are also present as fire action notices indicating the mandatory actions to be taken in the event of a fire.	- Fire action notice - 'Fire door keep shut'‘ - Fire door – keep locked' - 'Fire exit – Keep clear'	Round with blue background and white symbol.	
Hazard warning	To warn people of the potential dangers present within the workplace. Related to fire, this might include the presence of highly flammable materials	Warning – Flammable liquids, highly flammable (or similar)	Triangular with a black border and black pictogram on a yellow background.	

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23. Fire Extinguishers

Fire extinguishers can reduce the risk of a small fire (e.g. waste paper bin size) developing into a large fire that damages the building and/or threatens the escape of its occupants.

There needs to be appropriate provision, placement and maintenance of the extinguishers.

23.1 Policy on the use of fire extinguishers

The policy on fire extinguisher use is that:

1. Only staff who have attended formal fire extinguisher training should actively fight a fire; if they feel confident and it is safe to do so.

2. All staff should have a basic awareness of fire extinguishers in case they ever need to use one to safeguard their own personal safety e.g. where a fire might be blocking their own or somebody else's escape route.

23.2 Adequate provision

The British Standard providing guidance on the number of extinguishers and where they should be positioned changed towards the end of 2012. One change was to recommend that a minimum of 2 class A extinguishers (designed to tackle solid materials usually of an organic nature such as wood, paper etc) should be provided for every storey with a floor area up to 400m^2 in size.

If the company supplying/servicing your extinguishers advises you additional extinguishers are required due to changes to this standard, it is important to note that the revised standard applies to new fire extinguisher installations and is not retrospective. While the revised standard is an important source of guidance, the decision whether additional extinguishers are needed should continue to be determined by your fire risk assessment.

Additionally, fire guidance from the Department for Communities and Local Government at present has not changed in recommending that 1 or 2 extinguishers may be all that is necessary in simple premises.

23.3 Placement

Normally, extinguishers should be located in conspicuous positions where persons following an escape route can easily see them, e.g. close to exits.

The intention is to encourage people to move towards the exit, rather than towards danger. It is usual to locate extinguishers adjacent to fire alarm call points, so people can operate the

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fire alarm before picking up an extinguisher. Extinguishers should be sited so that it is not necessary to travel more than 30m to reach one.

Sometimes this may not be appropriate e.g. the extinguisher may create a trip hazard or there may be a risk that they are moved or discharged if the building is open to the public. In these instances, extinguisher stations located near final exits, but not in general view may be appropriate provided that there is prominently displayed fire extinguisher location signage in place and where appropriate directional arrow signs.

Where there are special fire risks, extinguishers should be sited near to the risk, but not so near as to be inaccessible or place the operator in undue danger from fire e.g. in a kitchen the extinguisher should be next to the door rather than next to the cooker.

Normally, extinguishers should be permanently mounted on brackets or stands. Small extinguishers weighing up to 4 kg should be mounted with the carrying handle about 1.5m from the floor, whilst larger, heavier extinguishers should be mounted with their handles at about 1m from the floor. Care should be taken to ensure that injury wouldn't result from extinguishers being dislodged and falling onto people.

23.4 Maintenance

An appointed contractor should be carrying out annual maintenance of extinguishers. Details of the maintenance should be recorded in the fire log book. They will also advise when an extinguisher has reached the end of its serviceable life and so when replacement is needed.

Fire wardens or others with a similar role, should check regularly to ensure extinguishers are in place. Ideally, this should be done as part of a daily check by a responsible person.

Fire class	Extinguishing agent				
	Water	**Foam**	**C02**	**Powder***	**Wet chemical**
A: Solids (usually organic based e.g. cardboard, paper, wood, textiles)	**Yes**	**Yes**	No	**Yes**	**Yes**

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B: Flammable liquids (e.g. petrol, oils, paints)	No	**Yes**	**Yes**	**Yes**	**Yes**
C: Fires involving gases (e.g. propane)	No	No	No	**Yes**	No
D: Fires involving metals (Special extinguishers needed)	No	No	No	No	No
E: Live electrical equipment	No	No	**Yes**	**Yes**	No
F: Cooking oils (e.g. chip pans)	No	No	No	No	**Yes**

*Powder extinguishers can cause damage to equipment etc that it comes into contact with and in confined locations can cause problems with visibility. Therefore, unless being used in open areas, they aren't recommended.

24. Fire instruction and training

Staff should have an appropriate level of training to ensure they are:

- Competent to perform any fire role they have been assigned
- Aware of the arrangements in place for managing fire risks within their place of work

Key training areas required by staff with a role in fire safety

	Awareness requirements	Training
All staff	• Basic fire safety awareness and prevention • Details of site emergency fire plan e.g. raising the alarm and evacuation • Awareness of basic fire extinguisher operating procedures and type/location of those on site • Site rules e.g. smoking areas, storage etc	E-Learning fire awareness course on HR Infospace. Manager instruction
Premises managers	• Carrying out a fire risk assessment for their building • Use of NCC documentation and guidance • Instruction on how to manage fire risks within their building	Fire safety risk assessment (Premises manager's training)
Fire wardens	• Detailed knowledge of the emergency fire plan and their role in effecting this • Checks to make e.g. escape routes kept clear, fire doors shut etc	Suitable fire warden training

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	• Awareness of human behaviour • How to search safely and recognise areas unsafe to enter • Measures for evacuating those needing additional assistance • Knowledge of any fixed fire fighting equipment such as sprinklers	
Fire extinguisher operators*	Staff who might be expected to tackle a small fire should have formal fire extinguisher training	Suitable fire extinguisher training. Note: extinguisher training may be included in fire warden training
Evacuation Assistants	• Instruction on the use of any relevant evacuation devices • Awareness of the content of any PEEP or GEEP in place for areas they would be expected to cover • Dignity/ awareness training • Means of assistance available for the building	• Training by a trained/experienced colleague on use of chair or training provided by an evac chair supplier • Dignity/ Awareness e-learning - HRInfospace

*As stated in 23.1; the policy on fire extinguisher use is that:

1. Only staff who have attended formal fire extinguisher training should actively fight a fire; if they feel confident and it is safe to do so.
2. All staff should have a basic awareness of fire extinguishers in case they ever need to use one to safeguard their own personal safety e.g. where a fire might be blocking their own or somebody else's escape route.

The general fire awareness e-learning course includes basic information on fire extinguishers. This is not intended to enable those undertaking this training to fight a fire as part of an active fire management strategy. It is intended only to give an understanding of fire extinguisher use should one ever need to be used in a worst case scenario e.g. their escape route was threatened. Therefore, where there is a foreseeable need for staff to tackle a fire, formal training should be provided.

24.1 Determining how many people to train

This will depend on several factors such as:

- The outcome of your fire risk assessment i.e. the nature of the risks and how they arise

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- The level of cover needed when considering opening hours, shift patterns etc

24.2 Fire training scenarios

The following scenarios are intended to provide examples of how decisions might be made on numbers to train. In scenarios 1 and 2 formal fire warden training has not been listed (although through your fire risk assessment you may determine this necessary). This doesn't mean there isn't a need for a fire warden but reflects the lower risk presented and that the requirements of this role might reasonably be fulfilled by other means e.g. ensuring the following:

- Premises management (fire risk assessment) training is attended to gain the necessary understanding to undertake a fire risk assessment, develop an emergency evacuation plan and ensure fire safety measures (equipment and escape routes) are checked/maintained
- Staff have been trained on the content of the emergency evacuation plan, understand their role and this is tested by undertaking fire drills
- A sufficient number of staff will have been identified and trained to implement any Personal Emergency Evacuation Plans in place

1. **Scenario** - A small school has one floor with a small number of classrooms and back office rooms and the maximum number of pupils and staff is relatively small and easily evacuated (as demonstrated by previous fire drills), including those with mobility issues.

Outcome - The school's management team decides:

- All staff to be provided with a general level of training to include site specific details plus the general awareness e-learning course
- Premises manager to undertake NCC premises management training (Fire Safety Risk Assessment)

2. **Scenario** - A medium sized school has two floors (both accessible to those with mobility issues) served by alternative escape routes located at opposite ends of the building and which are separated by fire resisting construction. Numbers of pupils and teachers present at one time would rarely exceed fifty. Most activities for those with mobility issues could be provided on the ground floor but occasionally need to be held on the upper floor. An evacuation chair has been purchased. During school hours, the Head teacher, their deputy or the business/site manager would be on duty.

Outcome - The school's management team decides:

- All staff will receive general fire awareness training (as described in scenario 1)
- Premises manager to undertake NCC premises management training (Fire Safety Risk Assessment)
- Premises manager, a deputy and a sufficient number of additional staff (to ensure cover at all times) will receive evacuation assistant training

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3. **Scenario** - A medium sized school on one floor has only one fire exit which is a long way from the teaching areas. A sizeable number of staff and visitors (potentially including those with mobility issues) access the building. There is comprehensive fire detection in the building which would detect a fire quickly but due to the time it takes to evacuate, not all may be able to exit the building before their escape routes are threatened. There is an office manager or deputy in the building during opening hours.

Outcome - Building improvements are being sought to increase the number of fire exits but in the meantime, the school's management team decides:

- All staff will undertake general fire awareness training (as described in scenario 1)
- Premises manager to undertake NCC premises management training (Fire Safety Risk Assessment)
- Head teacher and deputy will undertake formal fire warden training (from Norfolk Fire and Rescue service) which includes fire extinguisher instruction and will enable them to tackle any fire that might threaten the escape route.

4. **Scenario** – A complex needs school on two floors provides education to a large number of children who may have additional leaning and/or physical needs. In the event of a fire, evacuation may be protracted and stressful meaning it is important that staff are able to tackle a fire in its early stages. The school would always be under the supervision of the Head teacher or the Deputy Head. All pupils unable to use the stairs are accommodated on the ground floor. All pupils accessing the upper floor would be able to negotiate the stairs with, if necessary, assistance from a staff member.

Outcome - The school's management team decides:

- All staff will undertake general fire awareness training (as described in scenario 1)
- A large number of staff will be provided with formal fire extinguisher training by Norfolk Fire and Rescue Service to ensure a fire can be tackled early
- A number of other nominated staff sufficient to cover the school's opening hours will attend formal fire warden training (which includes formal fire extinguisher training)
- Premises manager to undertake NCC premises management training (Fire Safety Risk Assessment)
- A large number of staff would be trained as evacuation assistants to be able to assist with implementing any personal emergency evacuation plans (PEEPs)

5. **Scenario -** A large school comprised of several floors accommodates a large number of occupants including pupils and staff. There are often also large numbers of visitors e.g. pupils from other schools, parents attending open evenings and audiences for plays and performances. Therefore, any individual needs may not always be known in advance. Where appropriate, access is available to all upper floors using a lift but the lift cannot be used during a fire, meaning evacuation chairs have been made available for emergencies.

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Outcome – The school's management team decides:

- All staff will undertake general fire awareness training (as described in scenario 1)
- A sufficient number of staff on each floor to ensure there is always adequate cover on site will undergo evacuation assistant training
- A core facilities team will undergo formal fire warden training by Norfolk Fire and Rescue Service (which includes formal fire extinguisher training)
- Staff operating in high risk areas e.g. kitchens will receive formal fire extinguisher training from Norfolk Fire and Rescue Service
- Premises manager to undertake NCC premises management training (Fire Safety Risk Assessment)

24.3 Training – When it should be provided and frequencies

Initial training

- Site specific fire awareness training and general fire awareness e-learning training should be provided to new staff as soon as they begin working for the school.
- Other role requirements training (extinguisher, warden, evac chair etc) – Before requiring anybody to undertake one of these relevant roles.

Refresher training – Minimum frequencies

Training	Frequency
Site specific training	Annually
General fire awareness e-learning training	Every 3 years
Evacuation assistant training consisting of: deployment and use of evacuation chairs (and similar equipment) Dignity training Evacuation chair e-learning training	 Quarterly practice Every 3 years Every 3 years
Formal fire extinguisher and fire warden training	Every 3 years

24.4 Keeping records of training attended

Fire training and instruction given should be recorded in the fire logbook. The following are examples of the information that should be recorded:

(a) Date of the instruction or exercise and its duration
(c) Name of the person giving the instruction.
(d) Names of the persons receiving the instruction
(e) The nature of the instruction, training or drill.

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In large premises and/or multi occupancy sites, ensuring appropriate means of undertaking and records are kept may be more complicated and require local agreement. Questions to be considered would include:

- Will a whole building approach be taken where a nominated individual makes arrangements and keeps records for training or;
- Will individual team/service managers organise training and keep records for their areas of control

It is important these arrangements are determined and appropriate training records kept so that:

- They are available for review e.g. by the Fire service as the enforcing body
- You can demonstrate an appropriate level of fire related training has been provided
- They can assist you with scheduling refresher training at appropriate intervals

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