

# Fire Risk Assessment

**This document applies to anyone volunteering on behalf of Chard Community Hub**

The aims of the fire risk assessment are:

- To identify the fire hazards.
- To reduce the risk of those hazards causing harm to as low as reasonably practicable.
- To decide what physical fire precautions and management arrangements are necessary to ensure the safety of people in your premises if a fire does start.

It is best practice, when there are more than **five visitors**, to identify to a group of users the best practice if there is a fire in the building and make sure everyone knows where the fire exits are. To identify the Fire Assessment document, which is there for anyone to read.

Make sure all regular facility users know where the fire exits are and how to get to them.

- **Our fire safety volunteer – Serena Wootton**
- **All volunteers** and volunteer Steering Group and Directors have been given this document and talk through the fire safety requirements to keep them and others safe. This document clearly shows measures you have taken to prevent fires, and how these measures will protect them if a fire breaks out.
- This Fire Assessment document is given to **all volunteers**, including any young adult volunteers during any activities within Chard Community Hub to protect them from any potential fire.
- **We will** co-operate and co-ordinate with other responsible persons who also use the building, inform them of any significant risks you find and how you will seek to reduce/control those risks which might affect the safety of their employees. Any other group using the building will be given this document and made aware of how to keep safe.
- This fire assessment will be in an **obvious position** in Chard Community Hub and clearly labelled so anyone can take their time to read over it if they need longer to digest the information.
- **We** have considered the presence of any dangerous substances and the risk this presents to relevant persons from fire.
- The most suitable means of contacting the emergency services is to dial **999** and provide them with any relevant information about dangerous substances.
- **Every volunteer** will be given the fire risk talk before they volunteer in the building and sign to say they have read the policies which includes.
- **We will** ensure that the premises and all our firefighting equipment, fire detection and warning, including emergency routes and exits are covered by a suitable system of maintenance and are maintained by a competent person in an efficient state, in efficient working order and in good repair. This person is Director Bill Reeves.
- **All volunteers** must co-operate with Chard Community Hub to ensure the workplace is safe from fire and its effects and must not do anything that will place themselves or other people at risk.
- We will continue to make **fire checks** as the use of the building changes and document these.

- We will make sure all volunteers are considered including those with any **disabilities and special physical or emotional needs.**
- Maintenance to be maintained on a regular basis.
- All volunteers must leave the front door or the door at the rear of the property.
- If there is a fire alarm once outside move to the main road and meet on the pavement outside.

**Supportive paperwork for our fire assessment:****OUR FIRE SAFETY RISK ASSESSMENT**

1. **IDENTIFY** ANY POSSIBLE RISKS
2. **IDENTIFY** ANY POSSIBLE PEOPLE ESPECIALLY AT RISK
3. **EVALUATE**, REMOVE AND PROTECT FROM RISK  
Evaluate the risk of a fire occurring.  
Evaluate the risk to people from fire.  
Remove or reduce fire hazards or reduce the risks to people.
  - Detection and Warning
  - Fire-fighting
  - Escape routes
  - Lighting
  - Signs and notices
  - maintenance
4. **RECORD, PLAN, INFORM, INSTRUCT AND TRAIN**  
Record significant finding and action taken  
Prepare an emergency Plan  
Inform and instruct relevant people – co-operate and co-ordinate with others  
Provide training to all
5. **REVIEW**  
Keep assessment under review  
Revise where necessary.

For a fire to start, three things are needed:

- a source of ignition
- fuel; and
- oxygen.

If any one of these is missing, a fire cannot start. Taking measures to avoid the three coming together will therefore reduce the chances of a fire occurring.

The remainder of this step will advise on how to identify potential ignition sources, the materials that might fuel a fire and the oxygen supplies that will help it burn.

**1.1 Identify sources of ignition****FUEL**

Flammable gases Flammable liquids Flammable solids

**OXYGEN**

Always present in the air Additional sources from oxidising substances

**IGNITION SOURCE**

Hot surfaces Electrical equipment Static electricity Smoking/naked lights

You can identify the potential ignition sources in your premises by looking for possible sources of heat which could get hot enough to ignite material found in your premises.

These sources could include:

- smokers' material, e.g. cigarettes, matches and lighters;
- naked flames, e.g. candles or gas or liquid-fuelled open-flame equipment;
- electrical, gas or oil-fired heaters (fixed or portable);
- hot processes, e.g. welding by contractors or shrink wrapping;

- cooking equipment;
- faulty or misused electrical equipment;

Naked flame Hot surface

Mechanically generated sparks Electrically generated sparks

- lighting equipment, e.g. halogen lamps or display lighting too close to stored products;
- hot surfaces and obstruction of equipment ventilation, e.g. office equipment; and
- arson.

Indications of 'near-misses', such as scorch marks on furniture or fittings, discoloured or charred electrical plugs and sockets, cigarette burns etc., can help you identify hazards which you may not otherwise notice.

## 1.2 Identify sources of fuel

Anything that burns is fuel for a fire. You need to look for the things that will burn reasonably easily and are in enough quantity to provide fuel for a fire or cause it to spread to another fuel source. Some of the most common 'fuels' found in offices and shops are:

- flammable-liquid-based products, such as paints, varnishes, thinners and adhesives;
- flammable liquids and solvents, such as white spirit, methylated spirit, cooking oils and disposable cigarette lighters;
- flammable chemicals, such as certain cleaning products, photocopier chemicals and dry cleaning that uses hydrocarbon solvents;
- packaging materials, stationery, advertising material and decorations;
- plastics and rubber, such as video tapes, polyurethane foam-filled furniture and polystyrene-based display materials;
- textiles and soft furnishings, such as hanging curtains and clothing displays;
- waste products, particularly finely divided items such as shredded paper and wood shavings, off cuts, and dust; and
- flammable gases such as liquefied petroleum gas (LPG).

You should also consider the materials used to line walls and ceilings, e.g. polystyrene or carpet tiles, the fixtures and fittings, and how they might contribute to the spread of fire.

## 1.3 Identify sources of oxygen

The main source of oxygen for a fire is in the air around us. In an enclosed building this is provided by the ventilation system in use. This generally falls into one of two categories: natural airflow through doors, windows, and other openings; or mechanical air conditioning systems and air handling systems. In many buildings there will be a combination of systems, which will be capable of introducing/extracting air to and from the building.

- some chemicals (oxidising materials), which can provide a fire with additional oxygen and so help it burn. These chemicals should be identified on their container (and Control of Substances Hazardous to Health data sheet, by the manufacturer or supplier who can advise as to their safe use and storage.
- oxygen supplies from cylinder storage and piped systems, e.g. oxygen used in welding processes; and

- pyrotechnics (fireworks), which contain oxidising materials and need to be treated with great care.

#### Checklist

- identified all potential ignition sources?
- identified all potential fuel sources?
- identified all potential sources of oxygen?
- made a note of your findings?

### 2.1 As part of your fire risk assessment, you need to identify those at risk if there is a fire.

To do this you need to identify where you have people working, either at permanent workstations or at occasional locations around the premises, and to consider who else may be at risk, such as customers, visiting contractors etc. and where these people are likely to be found.

You must consider all the people who use the premises, but you should pay particular attention to people who may be especially at risk such as:

- employees who work alone and/or in isolated areas, e.g. cleaners, security staff;
- people who are unfamiliar with the premises, e.g. seasonal workers, contractors, visitors and customers;
- people with disabilities or those who may have some other reason for not being able to leave the premises quickly, e.g. elderly customers or parents with children;
- other persons in the immediate vicinity of the premises; and
- people with language difficulties.

In evaluating the risk to people with disabilities you may need to discuss their individual needs with them. In larger buildings used extensively by the public you may need to seek professional advice.

#### Checklist

- Have we identified who is at risk?
- Have we identified why they are at risk??
- Have we made a note of our findings?

\* Visit the Disability Rights Commission website on [www.drc-gb.org](http://www.drc-gb.org) for more information. The management of the premises and the way people we use it will influence our evaluation of risk. Management may be your responsibility alone or there may be others, such as the building owners or managing agents, who also have responsibilities. In multi-occupied buildings all those with some control must co-operate and you need to consider the risk generated by others in the building.

### 3.1 Evaluate the risk of a fire occurring

The chances of a fire starting will be low if your premises has few ignition sources and combustible materials are kept away from them.

In general, fires start in one of three ways:

- accidentally, such as when smoking materials are not properly extinguished or when lighting displays are knocked over;
- by act or omission, such as when electrical office equipment is not properly maintained, or when waste packaging is allowed to accumulate near to a heat source; and
- deliberately, such as an arson attack involving setting fire to external rubbish bins placed too close to the building.

Look critically at your premises and try to identify any accidents waiting to happen and any acts or omissions which might allow a fire to start. You should also look for any situation that may present an opportunity for an arsonist

### **3.2 Evaluate the risk to people**

In Step 2 you identified the people likely to be at risk should a fire start anywhere in the premises and earlier in Step 3 you identified the chances of a fire occurring. It is unlikely that you will have concluded that there is no chance of a fire starting anywhere in your premises so you now need to evaluate the actual risk to those people should a fire start and spread from the various locations that you have identified.

While determining the possible incidents, you should also consider the likelihood of any particular incident; but be aware that some very unlikely incidents can put many people at risk.

To evaluate the risk to people in your premises, you will need to understand the way fire can spread. Fire is spread by three methods:

- convection;
- conduction; and
- radiation

#### **Convection**

Fire spread by convection is the most dangerous and causes the largest number of injuries and deaths. When fires start in enclosed spaces such as buildings, the smoke rising from the fire gets trapped by the ceiling and then spreads in all directions to form an ever-deepening layer over the entire room space. The smoke will pass through any holes or gaps in the walls, ceiling and floor into other parts of the building. The heat from the fire gets trapped in the building and the temperature rises.

#### **Conduction**

Some materials, such as metal shutters and ducting, can absorb heat and transmit it to the next room, where it can set fire to combustible items that are in contact with the heated material.

#### **Radiation**

Radiation heats the air in the same way as an electric bar heater heats a room. Any material close to a fire will absorb the heat until the item starts to smoulder and then burn. Smoke produced by a fire also contains toxic gases which are harmful to people. A fire in a building with modern fittings and materials generates smoke that is thick and black, obscures vision, causes great difficulty in breathing and can block the escape routes. It is essential that the means of escape and other fire precautions are adequate to ensure that everyone can make their escape to a place of total safety before the fire and its effects can trap them in the building.

In evaluating this risk to people, you will need to consider situations such as:

- fire starting on a lower floor affecting the only escape route for people on upper floors or the only escape route for people with disabilities;
- fire developing in an unoccupied space that people have to pass by to escape from the building;
- fire or smoke spreading through a building via routes such as vertical shafts, service ducts, ventilation systems, poorly installed, poorly maintained or damaged walls, partitions and ceilings affecting people in remote areas;
- fire starting in a service room and affecting hazardous materials;

- fire spreading rapidly through the building because of combustible structural elements and/or large quantities of combustible goods;
  - fire and smoke spreading through a building due to poor installation of fire precautions, e.g. incorrectly installed fire doors (see Appendix B2 for more information on fire doors) or incorrectly installed services penetrating fire walls; and
  - fire and smoke spreading through the building due to poorly maintained and damaged fire doors or fire doors being wedged open.
- Further guidance on fire risks is given in Part 2, Section 1.

### **3.3 Remove or reduce the hazards**

Having identified the fire hazards in Step 1, you now need to remove those hazards if reasonably practicable to do so. If you cannot remove the hazards, you need to take reasonable steps to reduce them if you can. This is an essential part of fire risk assessment and as a priority this must take place before any other actions.

Ensure that any actions you take to remove or reduce fire hazards or risk are not substituted by other hazards or risks. For example, if you replace a flammable substance with a toxic or corrosive one, you must consider whether this might cause harm to people in other ways.

#### **Remove or reduce sources of ignition**

There are various ways that you can reduce the risk caused by potential sources of ignition, for example:

- Wherever possible replace a potential ignition source by a safer alternative.
- Replace naked flame and radiant heaters with fixed convector heaters or a central heating system. Restrict the movement of and guard portable heating appliances.
- separate ignition hazards and combustibles e.g. ensure sufficient clear space between lights and combustibles.
- Operate a safe smoking policy in designated smoking areas and prohibit smoking elsewhere.
- Ensure electrical and mechanical and gas equipment is installed, used, maintained and protected in accordance with the manufacturer's instructions.
- Check all areas where hot work (e.g. welding) has been carried out to ensure that no ignition has taken place or any smouldering materials remain that may cause of fire.
- Ensure that no-one carrying out work on gas fittings which involves exposing pipes that contain or have contained flammable gas uses any source of ignition such as blowlamps or hot-air guns.
- Take precautions to avoid arson.

#### **Remove or reduce sources of fuel**

There are various ways that you can reduce the risks caused by materials and substances which burn, for example:

- Reduce stocks of flammable materials, liquids and gases on display in public areas to a minimum. Keep remaining stock in dedicated storerooms or storage areas where the public are not allowed to go, and keep the minimum required for the operation of the business.
- Ensure flammable materials, liquids and gases, are kept to a minimum, and are stored properly with adequate separation distances between them.
- Keep areas containing flammable gasses ventilated.
- Do not keep flammable solids, liquids and gases together.

- Remove, or treat large areas of highly combustible wall and ceiling linings, e.g. polystyrene or carpet tiles, to reduce the rate of flame spread across the surface.
- Develop a formal system for the control of combustible waste by ensuring that waste materials and rubbish are not allowed to build up and are carefully stored until properly disposed of, particularly at the end of the day.
- Take action to avoid storage areas being vulnerable to arson or vandalism.
- Check all areas where hot work (e.g. welding) has been carried out to ensure that no ignition has taken place and no smouldering or hot materials remain that may cause a fire later.

### **Remove or reduce sources of oxygen**

You can reduce the potential source of oxygen supplied to a fire by:

- closing all doors, windows and other openings not required for ventilation, particularly out of working hours;
- shutting down ventilation systems which are not essential to the function of the premises;
- not storing oxidising materials near or with any heat source or flammable materials; and
- controlling the use and storage of oxygen cylinders, ensuring that they are not leaking, are not used to 'sweeten' the atmosphere, and that where they are located is adequately ventilated.

### **3.4 Remove or reduce the risks to people**

Having evaluated and addressed the risk of fire occurring and the risk to people (preventative measures) it is unlikely that you will be able to conclude that no risk remains of fire starting and presenting a risk to people in your premises.

You now need to reduce any remaining fire risk to people to as low as reasonably practicable, by ensuring that adequate fire precautions are in place to warn people in the event of a fire and allow them to safely escape.

The level of fire protection you need to provide will depend on the level of risk that remains in the premises after you have removed or reduced the hazards and risks.

### **Flexibility of fire protection measures**

Flexibility will be required when applying this guidance, the level of fire protection should be proportional to the risk posed to the safety of the people in the premises. Therefore, the objective should be to reduce the remaining risk to a level as low as reasonably practicable. The higher the risk of fire and risk to life, the higher the standards of fire protection will need to be.

Your premises may not exactly fit the solutions suggested in this guide and they may need to be applied in a flexible manner without compromising the safety of the occupants.

For example, if the travel distance is in excess of the norm for the level of risk you have determined, it may be necessary to do any one or a combination of the following to compensate:

- Provide earlier warning of fire using automatic fire detection.
- Revise the layout to reduce travel distances.
- Reduce the fire risk by removing or reducing combustible materials and/or ignition sources.
- Control the number of people in the premises.
- Limit the area to trained staff only (no public).
- Increase staff training and awareness.



**Note:** The above list is not exhaustive and is only used to illustrate some examples of trade-offs to provide safe premises.

**If you decide to significantly vary away from the benchmarks in this guidance then you should seek expert advice before doing so.**

In some small, open-plan, single-storey offices and shops, a fire may be obvious to everyone as soon as it starts. In these cases, where the number and position of exits and the travel distance to them is adequate, a simple shout of 'fire' or a simple manually operated device, such as a gong or air horn that can be heard by everybody when operated from any single point within the building, may be all that is needed. Where a simple shout or manually operated device is not adequate, it is likely that an electrical fire warning system will be required.

In larger premises, particularly those with more than one floor, where an alarm given from any single point is unlikely to be heard throughout the building an electrical system incorporating sounders and manually operated call points (break-glass boxes) is likely to be required. This type of system is likely to be acceptable where all parts of the building are occupied at the same time and it is unlikely that a fire could start without somebody noticing it quickly.

However, where there are unoccupied areas, or common corridors and circulation spaces in multi-occupied premises, in which a fire could develop to the extent that escape routes could be affected before the fire is discovered, an automatic fire detection system may be necessary.

You may need to consider special arrangements for times when people are working alone, are disabled, or when your normal occupancy patterns are different, e.g. when maintenance staff or other contractors are working at the weekend.

In large or complex premises, particularly those accommodating large numbers of people, such as department stores and multi-storey office blocks, it is likely that a more sophisticated form of warning and evacuation, possibly phased, should be provided. False alarms from electrical fire warning systems are a major problem (e.g. malicious activation of manual call points) and result in many unwanted calls to the fire and rescue service every year. To help reduce the number of false alarms, the design and location of activation devices should be reviewed against the way the premises are currently used.

#### Checklist

- Can the existing means of detection ensure a fire is discovered quickly enough for the alarm to be raised in time for all the occupants to escape to a place of total safety?
- Are the detectors of the right type and in the appropriate locations?
- Can the means of warning be clearly heard and understood by everyone?

#### Checklist

- Are there provisions for people or locations where the alarm cannot be heard?
- If the fire-detection and warning system is electrically powered, does it have a back-up power supply?

In small premises, having one or two portable extinguishers of the appropriate type, readily available for use, may be all that is necessary. In larger, more complex premises, a number of portable extinguishers may be required, and they should be sited in suitable

locations, e.g. on the escape routes at each floor level. It may also be necessary to indicate the location of extinguishers by suitable signs.

Some premises will also have permanently installed firefighting equipment such as hose reels for use by trained staff or firefighters. People with no training should not be expected to attempt to extinguish a fire. However, all staff should be familiar with the location and basic operating procedures for the equipment provided in case they need to use it. If your fire strategy means that certain people, e.g. fire marshals, will be expected to take a more active role, then they should be provided with more comprehensive training.

Other fixed installations and facilities to assist firefighters, such as dry rising mains and access for fire engines, or automatically operated, fixed fire suppression systems such as sprinklers and gas or foam flooding systems may also have been provided. Where these have been required by law, e.g. the Building Regulations or local Acts, such equipment and facilities must be maintained. Keeping records of the maintenance carried out will help you demonstrate to the authority that you have complied with fire safety law.

**Checklist**

- Are the extinguishers suitable for the purpose?
- Are there enough extinguishers sited throughout the premises at appropriate locations?
- Are the right types of extinguishers located close to the fire hazards and can users get to them without exposing themselves to risk?
- Are the extinguishers visible or does their position need indicating?
- Have you taken steps to prevent the misuse of extinguishers?
- Do you regularly check any other equipment provided to help maintain the escape routes?
- Do you carry out daily checks to ensure that there is clear access for fire engines?
- Are those who test and maintain the equipment competent to do so?
- Do you have the necessary procedures in place to maintain any facilities that have been provided for the safety of people in the building?
- Once a fire has started, been detected and a warning given, everyone in your premises should be able to escape to a place of total safety unaided and without the help of the fire and rescue service. However, some people with disabilities and others with special needs may need from staff who will need to be designated for the purpose.
- Escape routes should be designed to ensure, as far as possible, that any person confronted by fire anywhere in the building, should be able to turn away from it and escape to a place of reasonable safety, e.g. a protected stairway. From there they will be able to go directly to a place of total safety away from the building.

  
  
  
  
  
  
  
  
  
  
  


- In offices those who require special assistance (e.g. very young children in a creche and some people with disabilities) could be accommodated on the same level as the final exit from the premises to facilitate escape. Where they need assistance to evacuate, you should make sure that there are sufficient staff to ensure a speedy evacuation.
- The level of fire protection that should be given to escape routes will vary depending on the level of risk of fire within the premises and other related factors. Generally, premises that are simple, consisting of a single storey, will require simple measures to protect the escape routes, compared to a large multi-storey building, which would require a more complex and inter-related system of fire precautions.
- When determining whether your premises have adequate escape routes, you need to consider several factors, including:



- **Management of escape routes**

- Use of these facilities will need to be linked to effective management arrangements as part of your emergency plan. The plan should not rely on fire and rescue service involvement for it to be effective.

### Checklist

- If you wish to construct internal partitions or walls in your premises, perhaps to create a sales area or to divide up an office area, you should ensure that any new partition or wall does not obstruct any escape routes or fire exits, extend travel distances or reduce the sound levels of the fire alarm system. Any walls that affect the means of escape should be constructed of appropriate material. (Further technical information is provided in Appendix B.)
- Depending on the findings of your fire risk assessment, it may be necessary to protect the escape routes against fire and smoke by upgrading the construction of the floors, ceiling and walls to a fire-resisting standard. You should avoid having combustible wall and ceiling linings in your escape routes. For further information see Appendix B. You may need to seek advice from a competent person. Any structural alterations may require building regulation approval.

#### **The number of escape routes and exits**

- Is your building constructed, particularly in the case of multi-storey buildings, so that, if there is a fire, heat and smoke will not spread uncontrolled through the building to the extent that that people are unable to use the escape routes?
- Are any holes or gaps in walls, ceilings and floors properly sealed, e.g. where services such as ventilation ducts and electrical cables pass through them?
- Can all the occupants escape to a place of total safety in a reasonable time?
- Are the existing escape routes adequate for the numbers and type of people that may need to use them, e.g. staff, members of the public, young children, and disabled people?
- Are the exits in the right place and do the escape routes lead as directly as possible to a place of total safety?
- If there is a fire, could all available exits be affected or will at least one route from any part of the premises remain available?
- Are the escape routes and final exits kept clear at all times?

**Signs**

Signs must be used, where necessary, to help people identify escape routes, find firefighting equipment and emergency fire telephones. These signs are required under the Health and Safety and must comply with the provisions of those Regulations.

A fire risk assessment that determines that no escape signs are required (because, for example, trained staff will always be available to help members of the public to escape routes), is unlikely to be acceptable to an enforcing authority other than in the smallest and simplest of premises where the exits are in regular use and familiar to employees and visitors.

For a sign to comply with these Regulations it must be in pictogram form (see Figure 10). The pictogram can be supplemented by text if this is considered necessary to make the sign more easily understood, but you must not have a safety sign that uses only text. Where the locations of escape routes and firefighting equipment are readily apparent and the firefighting equipment is visible at all times, then signs are not necessary. In all

other situations it is likely that the fire risk assessment will indicate that signs will be necessary.

### **Notices**

Notices must be used, where necessary, to provide the following:

- instructions on how to use any fire safety equipment;
- the actions to be taken in the event of fire; and
- help for the fire and rescue service (e.g. location of sprinkler valves or electrical cut-off switches).

All signs and notices should be positioned so that they can be easily seen and understood.

### **Checklist**

- Where necessary are escape routes and exits, the locations of firefighting equipment and emergency fire telephones indicated by appropriate signs?
- Have you provided notices such as those giving information on how to operate security devices on exit doors, those indicating doors enclosing fire hazards that must be kept shut and fire action notices for staff and other people?
- Are you maintaining all the necessary signs and notices so that they continue to be correct, legible and understood?
- Are you maintaining signs that you have provided for the information of the fire and rescue service, such as those indicating the location of water suppression stop valves and the storage of hazardous substances?

### **Installation, testing and maintenance**

New fire precautions should be installed by a competent person.

You must keep any existing equipment, devices or facilities that are provided in your premises for the safety of people, such as fire alarms, fire extinguishers, lighting, signs, fire exits and fire doors, in effective working order and maintain fire separating elements and the prevention of smoke into escape routes.

You must ensure regular checks, periodic servicing and maintenance are carried out whatever the size of your premises and any defects are put right as quickly as possible. You, or a person you have nominated, can carry out certain checks and routine maintenance work. Further maintenance may need to be carried out by a competent service engineer. Where contractors are used, third party certification is one method where a reasonable assurance of quality of work and competence can be achieved.

The following are examples of checks and tests that should be carried out. The examples of testing and maintenance given are not intended to be prescriptive and other testing regimes may be appropriate.

#### **Daily checks**

Remove bolts, padlocks and security devices from fire exits, ensure that doors on escape routes swing freely and close fully and check escape routes to ensure they are clear from obstructions and combustible materials. Check the fire alarm panel to ensure the system is active and fully operational. Where practicable, visually check that emergency lighting units are in good repair and working. Check that all safety signs and notices are legible. (See Appendix B3 for more details on bolts, padlocks and security devices.)

#### **Weekly tests and checks**

Test fire-detection and warning systems and manually-operated warning devices weekly following the manufacturer's or installer's instructions. Check the batteries of safety torches and that fire extinguishers and hose reels are correctly located and in apparent working order. Fire pumps and standby diesel engines should be tested for 30 minutes each week.

### Monthly tests and checks

Test all emergency lighting systems and safety torches to make sure they have enough charge and illumination according to the manufacturer's or supplier's instructions. This should be at an appropriate time when, following the test, they will not be immediately required. Check that fire doors are in good working order and closing correctly and that the frames and seals are intact.

### Six-monthly tests and checks

A competent person should test and maintain the fire-detection and warning system.

### Annual tests and checks

The emergency lighting and all firefighting equipment, fire alarms and other installed systems should be tested and maintained by a competent person. All structural fire protection and elements of fire compartmentation should be inspected and any remedial action carried out.

### Checklist

- Do you regularly check all fire doors and escape routes and associated lighting and signs?
- Do you regularly check all your firefighting equipment?
- Do you regularly check your fire-detection and alarm equipment?
- Are those who test and maintain the equipment competent to do so?
- Do you keep a log book to record tests and maintenance?

### Step 3 Checklist

#### **Evaluate, remove, reduce and protect from risks by:**

Evaluating the risk to people in your building if a fire starts

Removing or reducing the hazards that might cause a fire

Have you:

Removed or reduced sources of ignition?

Removed or reduced sources of fuel?

Removed or reduced sources of air or oxygen?

Have you removed or reduced the risks to people if a fire occurs by: –

- Considering the need for fire detection and for warning?
- Considering the need for firefighting equipment?
- Determining whether your escape routes are adequate?
- Determining whether your lighting and emergency lighting are adequate?
- Checking that you have adequate signs and notices?
- Regularly testing and maintaining safety equipment?
- Considering whether you need any other equipment or facilities?

In Step 4 there are four further elements of the risk assessment you should focus on to address the management of fire safety in your premises. In smaller premises this could be done as part of the day-to-day management, however, as the premises or the

organisation get larger it may be necessary for a formal structure and written policy to be developed.

#### 4.1 Record the significant findings and action taken

If you or your organisation employ five or more people, your premises are licensed, or an alterations notice requiring you to do so is in force, you must record the significant findings of your fire risk assessment and the actions you have taken.

Significant findings should include details of:

- The fire hazards you have identified (you don't need to include trivial things like a small tin of solvent based glue).
- The actions you have taken or will take to remove or reduce the chance of a fire occurring (preventive measures).
- Persons who may be at risk, particularly those at greatest risk.
- The actions you have taken or will take to reduce the risk to people from the spread of fire and smoke (protective measures).
- The actions people need to take in case of fire including details of any persons nominated to carry out a particular function (your emergency plan).
- The information, instruction and training you have identified that people need and how it will be given.

You may also wish to record discussions you have had with staff or staff representatives. Even where you are not required to record the significant findings, it is good practice to do so. In some very small offices and shops, record keeping may be no more than a few sheets of paper (**possibly forming part of a health and safety folder**), containing details of significant findings, any action taken and a copy of the emergency plan.

The record could take the form of a simple list which may be supported by a simple plan of the premises. In more complex premises, it is best to keep a dedicated record including details of significant findings, any action taken, a copy of the emergency plan, maintenance of fire-protection equipment and training. There is no one 'correct' format specified for this.

You must be able to satisfy the enforcing authority, if called upon to do so, that you have carried out a suitable and sufficient fire risk assessment. Keeping records will help you do this and will also form the basis of your subsequent reviews. If you keep records, you do not need to record all the details, only those that are significant and the action you have taken.

It can be helpful to include a simple line drawing to illustrate your fire precautions. This can also help you check your precautions as part of your ongoing review. The findings of your fire risk assessment will help you to develop your emergency plan, the instruction, information and training you need to provide, the co-operation and co-ordination arrangements you may need to have with other responsible people and the arrangements for maintenance and testing of the fire precautions.

#### Checklist

- Have you recorded the significant findings of your assessment?
- Have you recorded what you have done to remove or reduce the risk?
- Are your records available for inspection by the enforcing authority?

#### 4.2 Emergency Plans



You need to have an emergency plan for dealing with any fire situation. The purpose of an emergency plan is to ensure that the people in your premises know what to do if there is a fire and that the premises can be safely evacuated. If you or your organisation employ five or more people, or your premises are licensed or an alterations notice requiring it is in force, then details of your emergency plan must be recorded. Even if it is not required, it is good practice to keep a record.

Your emergency plan should be based on the outcome of your fire risk assessment and be available for your employees, their representatives (where appointed) and the enforcing authority. In small offices and shops the emergency plan may be no more than a fire action notice.

In multi-occupied, larger and more complex offices and shops, the emergency plan will need to be more detailed and compiled only after consultation with other occupiers and other responsible people, e.g. owners, who have control over the building. In most cases this means that a single emergency plan covering the whole building will be necessary. It will help if you can agree on one person to co-ordinate this task.

### Checklist

- Do you have an emergency plan and, where necessary, have you recorded the details?
- Does your plan take account of other emergency plans applicable in the building?
- Is the plan readily available for staff to read?
- Is the emergency plan available to the enforcing authority?

### 4.3 Inform, instruct, co-operate and co-ordinate

You must give clear and relevant information and appropriate instructions to your staff and the employers of other people working in your premises, such as contractors, about how to prevent fires and what they should do if there is a fire. Any other relevant persons should be given information about the fire safety arrangements as soon as possible.

If you intend to employ a child, you must inform the parents of the significant risks you have identified and the precautions you have taken. You must also co-operate and co-ordinate with other responsible people who use any part of the premises. It is unlikely that your emergency plan will work without this.

### Information and instruction

All staff should be given information and instruction as soon as possible after they are appointed and regularly after that. Make sure you include staff who work outside normal working hours, such as contract cleaners or maintenance staff. The information and instructions you give must be in a form that can be used and understood. They should take account of those with disabilities such as hearing or sight impairment, those with learning difficulties and those who do not use English as their first language.

The information and instruction you give should be based on your emergency plan and must include:

- the significant findings from your fire risk assessment;
- the measures that you have put in place to reduce the risk;
- what staff should do if there is a fire;
- the identity of people you have nominated with responsibilities for fire safety; and
- any special arrangements for serious and imminent danger to persons from fire.

In small premises, where no significant risks have been identified and there are limited numbers of staff, information and instruction may simply involve an explanation of the fire procedures and how they are to be applied. This should include showing staff the fire-protection arrangements, including the designated escape routes, the location and operation of the fire-warning system and any other fire-safety equipment provided, such as fire extinguishers. Fire action notices can complement this information and, where used, should be posted in prominent locations.

In larger premises, particularly those in multi-occupied buildings, you should ensure that written instructions are given to people who have been nominated to carry out a designated safety task, such as calling the fire and rescue service or checking that exit doors are available for use at the start of each working day.

Further guidance on information and instruction to staff, and on working with dangerous substances is given in Part 2, Section 7.3.

### **Co-operation and co-ordination**

In premises that are not multi-occupied you are likely to be solely responsible. However, in buildings owned by someone else, or where there is more than one occupier, and others are responsible for different parts of the building, it is important that you liaise with them and inform them of any significant risks that you have identified. By liaising you can co-ordinate your resources to ensure that your actions and working practices do not place others at risk if there is a fire, and a co-ordinated emergency plan operates effectively. Where two or more responsible persons share premises in which an explosive atmosphere may occur, the responsible person with overall responsibility for the premises must co-ordinate any measures necessary to protect everyone from any risk that may arise. Employees also have a responsibility to co-operate with their employer so far as it is necessary to help the employer comply with any legal duty.

### **Checklist**

- Have you told your staff about the emergency plan?
- Have you informed guests and visitors about what to do in an emergency?
- Have you identified people you have nominated to do a particular task?
- Have you given staff information about any dangerous substances?
- Do you have arrangements for informing temporary or agency staff?
- Do you have arrangements for informing other employers whose staff are guest workers in your premises, such as maintenance contractors and cleaners?
- Have you co-ordinated your fire safety arrangements with other responsible people in the building?
- Have you recorded details of any information or instructions you have given and the details of any arrangements for co-operation and co-ordination with others?

### **4.4 Fire safety training**

You must provide adequate fire safety training for your staff. The type of training should be based on the particular features of your premises and should:

- take account of the findings of the fire risk assessment;
- explain your emergency procedures;
- take account of the work activity and explain the duties and responsibilities of staff;
- take place during normal working hours and be repeated periodically where appropriate;
- be easily understandable by your staff and other people who may be present; and
- be tested by fire drills.

In small premises this may be no more than showing new staff the fire exits and giving basic training on what to do if there is a fire. In larger premises, such as a supermarket with a high staff turnover and many shift patterns, the organisation of fire safety training will need to be planned.

Your staff training should include the following:

- what to do on discovering a fire;
- how to raise the alarm and what happens then;
- what to do upon hearing the fire alarm;
- the procedures for alerting members of the public and visitors including, where appropriate, directing them to exits;
- the arrangements for calling the fire and rescue service;
- the evacuation procedures for everyone in your office or shop to reach an assembly point at a place of total safety;
- the location and, when appropriate, the use of firefighting equipment;
- the location of escape routes, especially those not in regular use;
- how to open all emergency exit doors;
- the importance of keeping fire doors closed to prevent the spread of fire, heat and smoke;
- where appropriate, how to stop machines and processes and isolate power supplies in the event of a fire;
- the reason for not using lifts (except those specifically installed or nominated, following a suitable fire risk assessment, for the evacuation of people with a disability);
- the safe use of and risks from storing or working with highly flammable and explosive substances; and
- the importance of general fire safety, which includes good housekeeping.
- All the staff identified in your emergency plan that have a supervisory role if there is a fire (e.g. heads of department, fire marshals or wardens and, in larger offices and shops, fire parties or teams), should be given details of your fire risk assessment and receive additional training.
- Further guidance on training and how to carry out a fire drill is given in Part 2, Section 7.4.

### Checklist

- Have your staff received fire safety training?
- Have you carried out a fire drill recently?
- Are employees aware of specific tasks if there is a fire?
- Are you maintaining a record of training sessions?
- Do you carry out joint training and fire drills in multi-occupied buildings?
- If you use or store hazardous or explosive substances have your staff received appropriate training?

You should constantly monitor what you are doing to implement the fire risk assessment to assess how effectively the risk is being controlled.

If you have any reason to suspect that your fire risk assessment is no longer valid or there has been a significant change in your premises that has affected your fire precautions, you will need to review your assessment and if necessary revise it.

Reasons for review could include:

- changes to work processes or the way that you organise them, including the introduction of new equipment;

- alterations to the building, including the internal layout;
- substantial changes to furniture and fixings;
- the introduction, change of use or increase in the storage of hazardous substances;
- the failure of fire precautions, e.g. fire-detection systems and alarm systems, life safety sprinklers or ventilation systems;
- significant changes to displays or quantities of stock;
- a significant increase in the number of people present; and
- the presence of people with some form of disability.

You should consider the potential risk of any significant change before it is introduced. It is usually more effective to minimise a risk by, for example, ensuring adequate, appropriate storage space for an item before introducing it to your premises.

Do not amend your assessment for every trivial change, but if a change introduces new hazards you should consider them and, if significant, do whatever you need to do to keep the risks under control. In any case you should keep your assessment under review to make sure that the precautions are still working effectively. You may want to re-examine the fire prevention and protection measures at the same time as your health and safety assessment.

If a fire or 'near miss' occurs, this could indicate that your existing assessment may be inadequate and you should carry out a re-assessment. It is good practice to identify the cause of any incident and then review and, if necessary, revise your fire risk assessment in the light of this.

Records of testing, maintenance and training etc. are useful aids in a review process.

### **Alterations notices**

If you have been served with an 'alterations notice' check it to see whether you need to notify the enforcing authority about any changes you propose to make as a result of your review. If these changes include building work, you should also consult a building control body.

You should consider:

- housekeeping;
- storage;
- dangerous substances storage, display and use;
- equipment and machinery;
- electrical safety;
- smoking;
- managing building work and alterations;
- existing layout and construction;
- particular hazards in corridors and stairways used as escape routes;
- insulated core panels;
- restricting the spread of fire and smoke;
- fire-resisting structures;
- arson; and
- help for people with special needs.

### **1.1 Housekeeping**

Good housekeeping will lower the chances of a fire starting, so the accumulation of combustible materials in all premises should be monitored carefully. Good housekeeping

is essential to reduce the chances of escape routes and fire doors being blocked or obstructed.

### **1.7 Managing building work and alterations**

Fires are more frequent when buildings are undergoing refurbishment or alteration. You should ensure that, before any building work starts, you have reviewed the fire risk assessment and considered what additional dangers are likely to be introduced. You will need to evaluate the additional risks to people, particularly in those buildings that continue to be occupied. Lack of pre-planning can lead to haphazard co-ordination of fire safety measures.

You should liaise and exchange information with contractors who will also have a duty under the Construction (Health, Safety and Welfare) Regulations to carry out a risk assessment and inform you of their significant findings and the preventive measures they may employ. This may be supported by the contractors' agreed work method statement. The designer should also have considered fire safety as part of the Construction (Design and Management) Regulations 1994 (the CDM Regulations).

You should continuously monitor the impact of the building work on the general fire safety precautions, such as the increased risk from quantities of combustible materials and accumulated waste and maintaining adequate means of escape. You should only allow the minimum materials necessary for the work in hand within or adjacent to your building.

Additional risks can include:

- hot work such as flame cutting, welding, soldering, or paint stripping;
- temporary electrical equipment;
- blocking of escape routes, including external escape routes;
- introduction of combustibles into an escape route;
- loss of normal storage facilities;
- fire safety equipment, such as automatic fire-detection systems becoming affected;
- fire-resisting partitions being breached or fire doors being wedged open
- additional personnel who may be unfamiliar with the premises.

Activities such as welding, flame cutting, use of blow lamps or portable grinding equipment can pose a serious fire hazard and need to be strictly controlled when carried out in areas near flammable materials. This can be done by having a written permit to work for the people involved (whether they are your employees or those of the contractor).

A permit to work is appropriate in situations of high hazard/risk and, for example, where there is a need to:

- ensure that there is a formal check confirming that a safe system of work is being followed;
- co-ordinate with other people or activities;
- provide time-limits when it is safe to carry out the work; and
- provide specialised personal protective equipment (such as breathing apparatus) or methods of communication.

You must notify the fire and rescue service about alterations in your premises if an alterations notice is in force.

### **1.9 Particular hazards in corridors and stairways used as escape routes**

Items that are a source of fuel, pose an ignition risk, or are combustible and likely to increase the fire loading or spread of fire, should not be located on any corridor or, stairway or circulation space that will be used as an escape route. Such items include:

- portable heaters, e.g. bottled gas (LPG) or electric radiant heaters and electric convectors or boilers;
- gas cylinders for supplying heaters;
- cooking appliances; and
- unenclosed gas pipes, meters, and other fittings.

However, where more than one escape route is available and depending on the findings of your risk assessment, items such as those below may be acceptable if the minimum exit widths are maintained and the item presents a relatively low fire risk:

- non-combustible lockers;
- vending machines;
- small items of electrical equipment (e.g. photocopiers); and
- small coat racks and/or small quantities of upholstered furniture which meets BS 7176 or the Furniture and Furnishings (Fire) (Safety) Regulations 1988.

### 3.1 Portable firefighting equipment

Fires are classed according to what is burning. Fire extinguishers provided should be appropriate to the classes of fire found in your premises in accordance with Table 1.

Table 1: Class of fire

Class of fire	Description
Class A	Fires involving solid materials such as wood, paper or textiles.
Class B	Fires involving flammable liquids such as petrol, diesel or oils.
Class C	Fires involving gases.
Class D	Fires involving metals.
Class F	Fires involving cooking oils such as in deep-fat fryers.

#### Note:

1. If there is a possibility of a fire in your premises involving material in the shaded boxes then you should seek advice from a competent person.  
It is not safe to fight fires involving aerosols with fire extinguishers.

## Part 2 • Further guidance on fire risk assessment and fire precautions

### Number and type of extinguishers

Typically for the Class A fire risk, the provision of one water-based extinguisher for approximately every 200m<sup>2</sup> of floor space, with a minimum of two extinguishers per floor, will normally be adequate.

Where it is determined that there are additionally other classes of fire risk, the appropriate type, number and size of extinguisher should be provided. Further information is available in BS 5306-8.<sup>18</sup>

Where the fire risk is not confined to a particular location, e.g. Class A fires, the fire extinguishers should be positioned on escape routes, close to the exit from the room or floor, or the final exit from the building. Similarly, where the particular fire risk is specifically located, e.g. flammable liquids, the appropriate fire extinguisher should be near to the hazard, and located so that it can be safely used. They should be placed on a dedicated stand or hung on a wall at a convenient height so that employees can easily lift them off

(at about 1m for larger extinguishers, 1.5m for smaller ones, to the level of the handle). Ideally no one should have to travel more than 30m to reach a fire extinguisher. If there is a risk of malicious use you may need to use alternative, and more secure, locations.

Consider the implications of the Manual Handling Operations Regulations 1992<sup>17</sup> when selecting and siting firefighting equipment. Where there are self-contained small premises, multi-purpose extinguishers which can cover a range of risks may be appropriate.

Depending on the outcome of your fire risk assessment, it may be possible to reduce this to one extinguisher in very small premises with a floor space of less than 90m<sup>2</sup>.

Extinguishers manufactured to current standards (BS EN 3-7)<sup>79</sup> are predominately red but may have a colour-coded area, sited above or within the instructions, denoting the type of extinguisher. Most older extinguishers, manufactured to previous standards, have bodies painted entirely in a single colour which denotes the type of extinguisher. These older extinguishers remain acceptable until they are no longer serviceable. However, it is good practice to ensure that old and new style extinguishers are not mixed on the same floor of a building.

The following paragraphs describe the different types of extinguisher. The colour referred to is the colour of the extinguisher or the colour-coded area.

#### **Water extinguishers (red)**

This type of extinguisher can only be used on Class A fires. They allow the user to direct water onto a fire from a considerable distance. A 9-litre water extinguisher can be quite heavy and some water extinguishers with additives can achieve the same rating, although they are smaller and therefore considerably lighter. This type of extinguisher is not suitable for use on live electrical equipment.

#### **Water extinguishers with additives (red)**

This type of extinguisher is suitable for Class A fires. They can also be suitable for use on Class B fires and where appropriate, this will be indicated on the extinguisher. They are generally more efficient than conventional water extinguishers.

#### **Foam extinguishers (cream)**

This type of extinguisher can be used on Class A or B fires and is particularly suited to extinguishing liquid fires such as petrol and diesel. They should not be used on free-flowing liquid fires unless the operator has been specially trained, as these have the potential to rapidly spread the fire to adjacent material. This type of extinguisher is not suitable for deep-fat fryers or chip pans.

#### **Powder extinguishers (blue)**

This type of extinguisher can be used on most classes of fire and achieve a good 'knock down' of the fire. They can be used on fires involving electrical equipment but will almost certainly render that equipment useless. Because they do not cool the fire appreciably it can re-ignite. Powder extinguishers can create a loss of visibility and may affect people who have breathing problems and are not generally suitable for enclosed spaces.

#### **Carbon dioxide extinguishers (black)**

This type of extinguisher is particularly suitable for fires involving electrical equipment as they will extinguish a fire without causing any further damage (accept in the case of some electronic equipment e.g. computers). As with all fires involving electrical equipment, the power should be disconnected if possible.

#### **Class 'F' extinguishers**

This type of extinguisher is particularly suitable for commercial catering establishments with deep-fat fryers.

### **Selection, installation and maintenance of portable fire extinguishers**

All portable fire extinguishers will require periodic inspection, maintenance and testing. Depending on local conditions such as the likelihood of vandalism or the environment where extinguishers are located, carry out brief checks to ensure that they remain serviceable. In normal conditions a monthly check should be enough. Maintenance by a competent person should be carried out annually.

### **Fire blankets**

Fire blankets should be located in the vicinity of the fire hazard they are to be used on, but in a position that can be safely accessed in the event of a fire. They are classified as either light duty or heavy duty. Light-duty fire blankets are suitable for dealing with small fires in containers of cooking oils or fats and fires involving clothing. Heavy-duty fire blankets are for industrial use where there is a need for the blankets to resist penetration by molten materials.

## **3.2 Fixed firefighting installations**

These are firefighting systems which are normally installed within the structure of the building. They may already be provided in your premises or you may be considering them as a means of protecting some particularly dangerous or risk-critical area as part of your risk-reduction strategy.

### **Hose reels**

Permanent hose reels (Figure 20) installed in accordance with the relevant British Standard (BS EN 671-3: 2000<sup>21</sup>) provide an effective firefighting facility. They may offer an alternative, or be in addition to, portable firefighting equipment. A concern is that untrained people will stay and fight a fire when escape is the safest option. Where hose reels are installed, and your fire risk assessment expects relevant staff to use them in the initial stages of a fire, they should receive appropriate training.

**Note:** It is not safe to fight fires involving aerosols with hose reels.

Maintenance of hose reels includes visual checks for leaks and obvious damage and should be carried out regularly. More formal maintenance checks should be carried out at least annually by a competent person.

### **Sprinkler systems**

Sprinkler systems can be very effective in controlling fires. They can be designed to protect life and/or property and may be regarded as a cost-effective solution for reducing the risks created by fire. Where installed, a sprinkler system is usually part of a package of fire precautions in a building and may form an integral part of the fire strategy for the building.

Sprinkler protection could give additional benefits, such as a reduction in the amount of portable firefighting equipment necessary, and the relaxation of restrictions in the design of buildings.

## **Part 2 • Further guidance on fire risk assessment and fire precautions**

Guidance on the design and installation of new sprinkler systems and the maintenance of all systems is given in the Loss Prevention Council and should only be carried out by a competent person.

Routine maintenance by on-site personnel may include checking of pressure gauges, alarm systems, water supplies, any anti-freezing devices and automatic booster pump(s). A competent maintenance contractor should provide guidance on what records need to be completed.



Following a sprinkler operation the sprinkler system should be reinstated by a competent person. A stock of spare sprinkler bulbs should be available on site for replacements, preferably in a separate building e.g. the pumphouse. If a sprinkler system forms an integral part of your fire strategy it is imperative that adequate management procedures are in place to cater for those periods when the sprinkler system is not functional. This should form part of your emergency plan.

Although the actual procedures will vary, such measures may include the following:

- Restore the system to full working order as soon as possible.
- Limit any planned shutdown to low-risk periods when numbers of people are at a minimum (e.g. at night) or when the building is not in use. This is particularly important when sprinklers are installed to a life safety standard or form part of the fire safety engineering requirements.
- You may need to isolate the area without the benefit of working sprinklers from the rest of the premises by fire-resisting material.
- Avoid higher-risk processes such as 'hot-work'.
- Extra staff should be trained and dedicated to conducting fire patrols.
- Any phased or staged evacuation strategy may need to be suspended. Evacuation should be immediate and complete. (Exercise caution as the stairway widths may have been designed for phased evacuation only.)
- Inform the local fire and rescue service.  
If, having considered all possible measures, the risk is still unacceptable then it will be necessary to close all or part of the building. If in doubt you should seek guidance from a competent person.

### **Other fixed installations**

There are a number of other fixed installations including water mist, gaseous, deluge and fixed powder systems. If your premises have a fixed firefighting system that you are unfamiliar with, then seek advice. Where a fixed firefighting system forms an integral part of your fire safety strategy, it should be maintained in accordance with the relevant British Standard by a competent person.

### **3.3 Other facilities (including those for firefighters)**

Building Regulations and other Acts, including local Acts, may have required firefighting equipment and other facilities to be provided for the safety of people in the building and to help firefighters. Fire safety law places a duty on you to maintain such facilities in good working order and at all times.

These may include:

- access for fire engines and firefighters;
- firefighting shafts and lifts;
- fire suppression systems e.g. sprinklers, water mist and gaseous;
- smoke-control systems;
- dry or wet rising mains and firefighting inlets;
- information and communication arrangements e.g. fire telephones and wireless systems and information to brief the fire and rescue service when they arrive; and
- firefighters' switches.

The Workplace (Health, Safety and Welfare) Regulations 1992<sup>23</sup> also require that systems provided for safety within a workplace are maintained.

### **Access for fire engines and firefighters**

Buildings that have been constructed to modern building regulations or in accordance with certain local Acts will have been provided with facilities that allow fire engines to approach and park within a reasonable distance so that firefighters can use their equipment without too much difficulty.

These facilities may consist of access roads to the building, hard standing areas for fire engines and access into the building for firefighters. It is essential that where such facilities are provided they are properly maintained and available for use at all relevant times. Where a building is used by a number of different occupants you will need to ensure co-operation between the various 'responsible' persons to maintain fire and rescue service access. In exceptional cases, where access is persistently obstructed, you may need to make additional arrangements.

See Approved Document B to the Building Regulations for more information.<sup>24</sup>

### **Firefighting shafts and lifts**

Firefighting shafts (Figure 21) are provided in larger buildings to help firefighters reach floors further away from the building's access point. They enable firefighting operations to start quickly and in comparative safety by providing a safe route from the point of entry to the floor where the fire has occurred.

## **4.1 General principles**

### **Suitability of escape routes**

You should ensure that your escape routes are:

- suitable;
- easily, safely and immediately usable at all relevant times;
- adequate for the number of people likely to use them;
- free from any obstructions, slip or trip hazards; and
- available for access by the emergency services.

In multi-occupied premises, escape routes should normally be independent of other occupiers, i.e. people should not have to go through another occupier's premises as the route may be secured or obstructed. Where this is not possible, then robust legal agreements should be in place to ensure their availability at all times.

All doors on escape routes should open in the direction of escape and ideally be fitted with a safety vision panel. This is particularly important if more than 60 people use them or they provide an exit from an area of high fire risk.

At least two exits should be provided if a room/area is to be occupied by more than 60 persons. This number of 60 can be varied in proportion to the risk; for a lower risk there can be a slight increase, for a higher risk, lower numbers of persons should be allowed. Movement of persons up or down a group of not less than three steps will be so obvious to those following that they will be prepared for the change in level, but movement up or down one step is not so readily observed and may easily lead to a fall. Wherever practicable, differences of level in corridors, passages and lobbies should be overcome by the provision of inclines or ramps of gradients not exceeding 1 in 12 or steps not having less than three risers in any flight. Corridors and passages should be level for a distance of 1.5 metres in each direction from any steps.

Any mirrors situated in escape routes should be sited so that persons escaping from a fire will not be thrown into confusion by any reflected image of the route they are using, or be misled as to the direction they should take to reach fire exits

While not normally acceptable, the use of ladders, floor hatches, wall hatches or window exits may be suitable for small numbers of able-bodied, trained staff in exceptional circumstances.

### **Fire-resisting construction**

The type and age of construction are crucial factors to consider when assessing the adequacy of the existing escape routes. To ensure the safety of people it may be necessary to protect escape routes from the effects of a fire. In older premises (see Appendix C for more information on historical properties) it is possible that the type of construction and materials used may not perform to current fire standards. Also changes of occupier and refurbishment may have led to:

- cavities and voids being created, allowing the potential for a fire to spread unseen;
- doors and hardware worn by age and movement being less likely to limit the spread of smoke;
- damaged or lack of cavity barriers in modular construction; and
- breaches in fire compartment walls, floors and ceilings created by the installation of new services, e.g. computer cabling.

Where an escape route needs to be separated from the rest of the premises by fire-resisting construction, e.g. a dead-end corridor or protected stairway then you should ensure the following:

- Doors (including access hatches to cupboards, ducts and vertical shafts linking floors) walls, floors and ceilings protecting escape routes should be capable of resisting the passage of smoke and fire for long enough so that people can escape from the building.
- Where suspended or false ceilings are provided, the fire resistance should extend up to the floor slab level above. For means of escape purposes a 30 minutes fire-resisting rating is normally enough.
- Cavity barriers, fire stopping and dampers in ducts are appropriately installed.

If there is any doubt about the nature of the construction of your premises, ask for advice from a competent person.

### **Number of people using the premises**

As your escape routes need to be adequate for the people likely to use them you will need to consider how many people, including employees and the public, may be present at any one time. Where premises have been subject to building regulations approval for use as either an office or a shop, the number and width of escape routes and exits will normally be enough for the anticipated number of people using the building. In such buildings where the risk has changed, or buildings were constructed before national Building Regulations it is still necessary to confirm the provision. For offices, the maximum numbers of staff, visitors and contractors liable to be in the building at the same time will be known by the responsible person. For shops, the responsible person will normally be aware of the maximum number of people liable to be present from a personal knowledge of trading patterns. There will also be an appreciation of the use of the building by those with special needs, such as the disabled.

If you propose to make changes to the use or layout of the building which may increase the number of people, you should check the design capacity by referring to guidance given in the Building Regulations Approved Document B.<sup>24</sup>

## Mobility impairment

Effective management arrangements need to be put in place for those that need help to escape.

Consider the following points:

A refuge is a place of reasonable safety in which disabled people can wait either for an evacuation lift or for assistance up or down stairs (see Figure 23). Disabled people should not be left alone in a refuge area whilst waiting for assistance with evacuation from the building. Depending on the design and fire resistance of other elements, a refuge could be a lobby, corridor, part of a public area or stairway, or an open space such as a flat roof, balcony or similar place which is sufficiently protected (or remote) from any fire risk and provided with its own means of escape and a means of communication.

Where refuges are provided, they should be enclosed in a fire-resisting structure which creates a protected escape route which leads directly to a place of total safety and should only be used in conjunction with effective management rescue arrangements. Your fire safety strategy should not rely on the fire and rescue service rescuing people waiting in these refuges.

If firefighting lifts (provided in high buildings as firefighting access) are to be used for evacuation, this should be co-ordinated with the fire and rescue service as part of the pre-planned evacuation procedures.

Normal lifts may be considered suitable for fire evacuation purposes, subject to an adequate fire risk assessment and development of a suitable fire safety strategy by a competent person.

Since evacuation lifts can fail, having reached a refuge a disabled person should also be able to gain access to a stairway (should conditions in the refuge become untenable). An evacuation lift with its associated refuge should therefore be located adjacent to a protected stairway.

Enough escape routes should always be available for use by disabled people. This does not mean that every exit will need to be adapted. Staff should be aware of routes suitable for disabled people so that they can direct and help people accordingly.

### Part 2 • Further guidance on fire risk assessment and fire precautions

- Stairways used for the emergency evacuation of disabled people should comply with the requirements for internal stairs in the building regulations. Specialist evacuation chairs or other equipment may be necessary to negotiate stairs.
- Plans should allow for the careful carrying of disabled people downstairs without their wheelchairs, should the wheelchair be too large or heavy. You will need to consider health and safety manual handling procedures in addition to the dignity and confidence of the disabled person.