

Fire Safety

Introduction

Achieving fire safety is often a matter of common sense but you have to ensure that sufficient time is put aside to work through the necessary steps. In more complicated premises or those with a high life risk, such as premises that provide care or large cinemas, more expert help may be required. Effective fire safety management requires any person who exercises some level of control in premises (the responsible person) to take reasonable steps to reduce the risk from fire and ensure occupants can safely escape if a fire does occur.

Fire Hazards

Good management can help prevent situations where fires can occur. This can be achieved through:

- Maintenance of plant and equipment;
- Safe storage and use of flammable materials and liquids;
- Hot work processes;
- Safe electrical systems
- Safe heating systems
- Appropriate smoking policies
- Proper control of building or maintenance work
- Regular disposal of flammable waste
- Reducing the risk of arson

Fire Detection

You need to have appropriate provisions for detecting any outbreak of fire and for warning people in your workplace quickly enough so that they can escape to a safe place before the fire is likely to make escape routes unusable.

The level of fire detection equipment should be identified from your fire risk assessment, but in small workplaces where a fire is unlikely to cut off the means of escape (e.g. open-air areas and single-storey buildings where all exits are visible and the distances to be travelled are small), it is likely that any fire will be quickly detected by the people present and a shouted warning may be all that is needed. An automatic detection system linked to an electric alarm may be appropriate in premises where a fire might go undetected.

In larger premises, particularly multi-storey premises, an electrical fire warning system with manually operated call points is likely to be the minimum needed. In unoccupied areas, where a fire could start and develop to the extent that escape routes may become affected before it is discovered, it is likely that a form of automatic fire detection will also be necessary.

Fire Safety Signs

A fire safety sign is defined as a sign (including an illuminated sign or an acoustic signal) which:

- provides information on escape routes and emergency exits in case of fire
- provides information on the identification or location of fire-fighting equipment
- gives warning in case of fire

What colours should be used for fire safety signs?

Colour	Meaning or Purpose	Instruction/Information
Red	Fire-fighting equipment	Identification, location
Green	Emergency escape	Doors, exits, escape routes



A fire safety sign which bears only text (i.e. typically 'Fire Exit') will not be acceptable, although text can be used in combination with pictures.

Examples of suitable pictures for emergency escape routes and fire-fighting equipment can be found at the following web site: http://www.opsi.gov.uk/si/si1996/Uksi_19960341_en_2.htm

Pictures may be supplemented by directional arrows to form the sign. However, a directional arrow is not acceptable on its own!

People usually leave premises by the same way that they enter or by routes that are familiar to them. Alternative exits (i.e. all emergency exits and any exits not in normal use) need to be clearly indicated so that people know that there are ways to leave other than the way they use to enter.

Make sure the fire exit sign is displayed immediately above the exit opening or, if this is not possible, choose a position where the sign can be clearly seen and is least likely to be obstructed or obscured by smoke.

Where an exit cannot be seen or where a person escaping may be in doubt about the location of an exit, fire exit signs including a directional arrow are acceptable at suitable points along the escape route.

Marking and Identifying Fire-fighting Equipment

The location of fire-fighting equipment will normally be indicated through use of a signboard, or by colouring the background behind the equipment red. Where the equipment itself is mainly red there may be no need to colour the background red as well. The signboard needs to be sufficiently large to allow easy location of the fire-fighting equipment.

If for any reason fire-fighting equipment is placed in a position hidden from direct view, point to its location using appropriate directional arrows together with the relevant fire-fighting equipment sign.

Fire Alarms

The aim of a fire alarm is to make sure that people in the workplace are alerted to any outbreak of fire well before it becomes life threatening. The warning system sets in motion a planned routine for evacuating the premises.

It is important that the audio signal for a fire alarm:

- has a sound level considerably higher than the level of normal workplace noise so that the warning signal can be heard throughout the workplace
- is easily recognisable and distinct from other audible signals and workplace noise
- is continuous for evacuation.

The method of giving warning of fire will vary from workplace to workplace. However, it needs to be suitable for the premises. In some cases, such as small workplaces, the fire alarm may consist of manually operated sounders (e.g. rotary gongs or handbells). In larger workplaces it may take the form of an electrical fire-warning system.

A public address message along with a flashing light may also be used as a means of alerting persons to the fire evacuation procedure. To be effective, messages will normally need to be prepared in advance and in some cases in appropriate languages. The fire warning system needs to activate this message. If possible this will cancel any amplified music, soundtrack or other announcements.

Make sure that a sounder, or loudspeaker of a public address system, is not placed in such a position that communication with the fire brigade is hindered, e.g. too near a reception area from which the emergency call may be made.

In general all fire alarms will need to be regularly maintained. This is necessary to ensure they work properly and can be heard throughout the workplace. For manually operated sounders this is a somewhat simple task where the necessary general skills could well be 'in-house'. With respect to electrical fire warning systems, however, it is important that they are serviced by someone who is competent to carry out the work; that is, someone with the appropriate skills, qualifications and/or experience. Your installer may be able to advise about necessary maintenance.

Means of Escape

Suitable means of escape should be available so that once a fire has been detected and a warning given, everyone in your workplace is able to leave the premises quickly and efficiently.

It is likely that the normal exits will be sufficient in small, single-storey premises, where travel distances are short. In larger premises, where travel distances are greater and where it is possible for an escape route to be unusable, an alternative means of escape will normally be necessary.

The fire risk assessment will identify any additional provisions necessary to allow persons to escape in case of a fire. Issues to be considered will include:

- the need for alternative routes
- numbers of people to evacuate
- size and use of the workplace

- direction and length of escape routes
- size and condition of escape routes
- obstructions and fire hazards in escape routes and exits
- protection of escape routes, including staircases
- lighting and signing of escape routes
- direction of opening doors
- size of doors
- doors security
- escape times
- escape drills and training

People escaping should be able to open any door on an escape route easily and immediately, without using a key. Outward opening doors used for escape which have to be kept fastened should be fitted with a single form of release device such as a panic latch, a panic bolt, or a push pad.

Where a door needs to be kept secure, it should be the only fastening on the door. All members of staff should be made aware of how it operates. Such devices are not normally suitable for use by members of the public so you should display a notice explaining how it works.

Fire Fighting

Suitable fire-fighting equipment should be provided in workplaces, to allow trained staff to extinguish a fire if they can do so safely.

The fire risk assessment should identify the type and extent of fire-fighting equipment necessary for the workplace, and should consider:

- size of the workplace
- number of persons present
- nature of the work activities and work equipment present
- special risks, such as electrical equipment, highly flammable materials, etc.
- siting of extinguishers
- the types of extinguisher needed
- training designated members of staff in their safe use
- signs indicating positions of extinguishers and reels

The table below lists the types of extinguisher and their colours:

Type	Colour	Suitability
Dry powder	Blue	For: Liquid and electrical fires Not suitable for metal fires
Carbon dioxide	Black	For: Liquid and electrical fires Not suitable for flammable metal fires
Water	Red	For: Wood, paper, textile and solid material

		Not suitable for liquid, electrical or metal For: Liquid fires
Foam	Cream	Not suitable for electrical or metal fires
Halon	Green	Have been withdrawn for general use

The water-type extinguisher or hose reel is the most useful form of fire-fighting equipment for general fire risks. One of these should be provided for approximately each 200 square metres of floor space, with a minimum of one on each floor. If each floor already has a hose reel in working order and of sufficient length, there may be no need for additional water-type extinguishers.

Fire extinguishers may be colour-coded to indicate their type. Previously, the entire body of the extinguisher has been colour-coded; the latest standard requires that all new fire extinguisher bodies should be red. A panel of colour should be used to identify the type of extinguisher. This coloured area should be positioned so that it is clearly visible.

If they are properly maintained and serviced, fire extinguishers may be in service for at least 20 years.

Fire extinguishers should be positioned in conspicuous places on escape routes, near exit doors if possible. Fire extinguishers should be securely hung on wall brackets and to make lifting easier, the handle of larger, heavier extinguishers should be about 1 metre from the floor but smaller, lighter extinguishers may be mounted at a higher level.

Fire blankets 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 blanket to resist penetration by molten materials.

If the premises are small, portable fire extinguishers will probably be sufficient to tackle small fires. However, in larger buildings, it may be necessary to consider a sprinkler system.

Training

You should ensure that all employees and third parties are informed about the evacuation procedures.

Make sure that your employees fully understand the meaning of fire safety signs in the workplace and how to give warning in case of fire.

Training should be repeated as often as necessary but is usually once or twice a year so that your employees remain familiar with correct procedures. This should preferably take the form of practical exercises such as fire drills. In smaller workplaces, this might consist of making sure that employees are aware of details of the Fire Action Notice.

Your training should consider:

- the action to take on discovering a fire
- how to raise the alarm
- what to do when hearing the alarm
- the procedures for alerting members of the public
- the arrangements for calling emergency services
- evacuation procedures and location of assembly points

- the location and, when appropriate, the use of fire-fighting extinguishers
- the location of the escape routes
- how to open escape doors
- the importance of keeping fire doors closed
- the importance of general fire safety and good housekeeping
- reporting of faults and incidents, including leaks and spills of flammable liquids

Fire marshals should be appointed and trained for larger premises, where risk assessment identifies such a need.

Emergency Plans

An emergency plan should be prepared on the action to take in case of a fire. The complexity of the plan should be considered within the fire risk assessment, though for small premises a simple Fire Action Notice may be appropriate. More detailed plans will be required in high risk or larger premises.

The needs of disabled persons must also be considered within the emergency plan.

Testing and Maintenance

Recommendations on good practice for maintenance and testing of fire safety provisions can be found below:

Equipment	Frequency	Action
Fire detection systems	Weekly	Check all systems for state of repair and operation. Test operation of systems, self contained alarms and manually operated call points
	Annually	Full check and test of system by service engineer
Emergency lighting including torches	Weekly	Operate torches and replace batteries as appropriate
	Monthly	Check all systems for state of repair and working order
	Annually	Full check and test of systems by service engineer
Fire fighting equipment	Weekly	Check all extinguishers for correct installation and apparent working order
	Annually	Full check and test by service engineer

Disabled Persons

Disabilities are often obvious (e.g. wheelchair users), but in some cases they can be less obvious and staff should be vigilant in an emergency. Help should be given to members of the public who need it most, including the very young and the elderly. If members of staff have disabilities, the emergency plan should be developed in conjunction with them, taking this into account. Please refer to separate guidance note on Emergency Plan in the document library.