

# Key Stages:

## Stage 1

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### Identify Fire Hazards

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.

### Identify sources of ignition

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;
- arson

### 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 common 'fuels' found in premises are:

- liquid, such as paints, varnishes, thinners, adhesives, solvents, (white spirit, methylated spirit) and cooking oils
- flammable chemicals, such as certain cleaning products, photocopier chemicals and dry cleaning that uses hydrocarbon solvents;
- packaging materials, stationery, advertising material and decorations;
- 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.

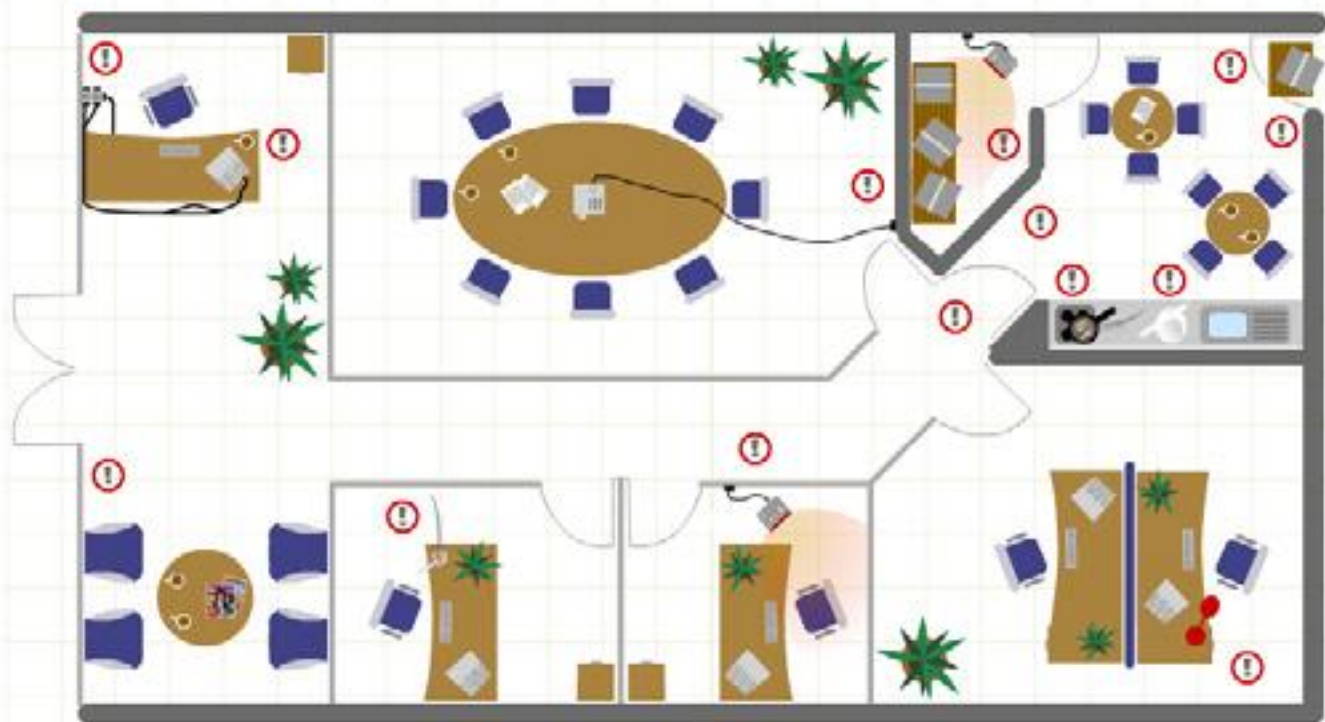
## Identify sources of oxygen

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.

Additional sources of oxygen can sometimes be found in materials used or stored at premises such as:

- some chemicals (oxidising materials), which can provide a fire with additional oxygen and so help it burn.
- oxygen supplies from cylinder storage and piped systems, e.g. oxygen used in welding processes; and
- pyrotechnics (fireworks), which contain oxidising materials.

An ideal method of identifying and recording these hazards is by means of a simple single line plan, an example of which is illustrated below. Checklists may also be used.



# Key Stages:

## Stage 2

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### Identifying People At Risk

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.,

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.
- 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.

# Key Stages:

## Stage 3



### Evaluate, Remove, Reduce and Protect From Risk

#### 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
- by act or omission, such as when electrical office equipment is not properly maintained
- deliberately, such as an arson attack

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

#### Evaluate the risk to people

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 people should a fire start and spread from a location within your premises.

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, affecting people in remote areas;
- fire starting in a service room and affecting hazardous materials;
- fire spreading rapidly through the building because of large quantities of combustible goods;
- rapid vertical fire spread in racked displays; Smoke moving through a building
- fire and smoke spreading through a building due to incorrectly installed fire doors or incorrectly installed services penetrating fire walls
- fire and smoke spreading through the building due to poorly maintained and damaged fire doors or fire doors being wedged open.

## Remove or reduce the hazards

Having identified the fire hazards, 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 are not substituted by other hazards. For example, if you replace a flammable substance with a toxic or corrosive one. You must consider ways to:

- Remove or reduce sources of ignition
- Remove or reduce sources fuel
- Remove or reduce sources of oxygen
- Remove or reduce the risks to people

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 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.

## Fire-detection and warning systems

In some small, open-plan, single-storey premises, 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, 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.

Where there are unoccupied areas, or common corridors and circulation spaces in multi-occupied premises, in which a fire could develop, an automatic fire detection system may be necessary.

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.

## Firefighting equipment and facilities

Firefighting equipment can reduce the risk of a small fire, e.g. a fire in a waste-paper bin, developing into a large one.

This equipment will usually comprise enough portable extinguishers that must be suitable for the risk.

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.

All staff should be familiar with the location and basic operating procedures for the equipment provided, in case they need to use it. Other fixed installations and facilities to assist firefighters 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.

Similarly, if provided for other reasons, e.g. insurance, it is good practice to ensure that they are properly maintained.

Keeping records of the maintenance carried out will help you demonstrate to the enforcing authority that you have complied with fire safety law.

## Escape routes

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 help from staff who will need to be designated for the purpose.

When determining whether your premises have adequate escape routes, you need to consider a number of factors, including:

- the type and number of people using the premises;
- escape time;
- the age and construction of the premises;
- the number and complexity of escape routes and exits;
- whether lifts can or need to be used;
- the use of phased or delayed alarm evacuation; and
- assisted means of escape and personal escape/evacuation plans (PEEPS).

## The type and number of people using the premises

The number and capability of people present will influence your assessment of the escape routes. You must ensure that your existing escape routes are sufficient and capable of safely evacuating all the people likely to use your premises at any time. If necessary you may need either to increase the capacity of the escape routes or restrict the number of people in the premises.

## The number of escape routes and exits

When evaluating escape routes, you may need to build in a safety factor by discounting the largest exit from your escape plan, then determine whether the remaining escape routes from a room, floor or building will be sufficient to evacuate all the occupants within a reasonable time.

## Management of escape routes

It is essential that escape routes, are managed and maintained to ensure that they remain usable and available at all times when the premises are occupied.

Corridors and stairways that form part of escape routes should be kept clear and hazard free at all times.

## Emergency escape lighting

Where any escape routes are internal and without windows, or your premises are used during periods of darkness, including early darkness on winter days, then some form of backup to the normal escape route lighting (emergency escape lighting) is likely to be required.

In small premises, borrowed lighting, e.g. from street lamps may be acceptable. In larger premises it is likely that a more comprehensive system will be needed.

## Signs and Notices

### 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 (Safety Signs and Signals) Regulations 1996,6 and must comply with the provisions of those Regulations.

For a sign to comply with these Regulations it must be in pictogram form. 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.

### 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 (eg. 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.

## 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 etc , in effective working order and maintain 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.

# Key Stages:

## Stage 4



### Record, Plan, Inform, Instruct and Train

#### Record the significant findings and action taken

Significant findings should include details of:

- The fire hazards you have identified
- The actions you have taken or will take to remove or reduce the chance of a fire occurring
- 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
- The actions people need to take in case of fire (your emergency plan).
- The information, instruction and training you have identified that people need and how it will be given.

In some very small premises, record keeping may be no more than a few sheets of paper, containing details of significant findings, any action taken and a copy of the emergency plan.

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.

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.

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.

#### Emergency Plans

You need to have an emergency plan for dealing with any fire situation.

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 premises the emergency plan may be no more than a fire action notice.

In multi-occupied, larger and more complex premises, the emergency plan will need to be more detailed and compiled only after consultation with other occupiers and other responsible people.



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

You must give clear and relevant information and instructions to your staff and the employers of other people working in your premises, about how to prevent fires and what they should do if there is a fire.

You must also co-operate and co-ordinate with other responsible people who use any part of the premises.

## Information and instruction

All staff should be given information and instruction as soon as possible after they are appointed and regularly after that.

The information and instructions you give 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 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.

## Co-operation and co-ordination

In buildings 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 ensure that a co-ordinated emergency plan operates effectively. 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.

## Fire safety training

You must provide adequate fire safety training for your staff. The type of training 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.

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 evacuation procedures for everyone in your premises 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;
- the importance of keeping fire doors closed to prevent the spread of fire, heat and smoke;
- the importance of general fire safety, which includes good housekeeping.

# Key Stages:

## Stage 5

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### Review

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

Reasons for review could include:

- changes to work processes, including the introduction of new equipment;
- alterations to the building, including the internal layout;
- the introduction, of hazardous substances;
- 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.

Do not amend your assessment for every trivial change, you should keep your assessment under review to make sure that the precautions are still working effectively.

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.

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.