



Fire

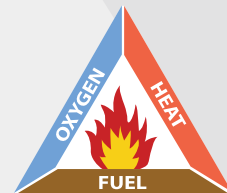
Introduction

This information sheet gives practical advice on fire safety and how to reduce the risk of fire occurring, spreading and causing harm.

Fire poses a serious risk to the safety and health of all occupants within a building as fire and smoke have the potential to injure or kill large numbers of people. As an employer or manager you must consider everyone who might be on your premises, whether they are employees, visitors or members of the public.

How does a fire develop?

The "Fire Triangle" shows the three ingredients that are required for a fire to develop. For a fire to start and grow all three elements of the fire triangle must be present. Removing one or more of these elements will prevent a fire from starting or growing or will extinguish it.



What do I have to do as an employer?

Employers have a responsibility to make sure that:

- ▶ fires are unlikely to occur
- ▶ if a fire does occur it can be controlled or contained quickly, effectively and safely
- ▶ if a fire does occur and grow, everyone in your premises is able to escape to a place of safety easily and quickly

You must carry out a fire risk assessment that will help you ensure that your fire safety procedures, fire prevention measures, and fire precautions (plans, systems and equipment) are all in place and working properly.

Your fire risk assessment should consider:

- ▶ The possibility of a fire occurring in your workplace
- ▶ The likelihood of that fire spreading
- ▶ The means by which a fire is detected
- ▶ The method of raising the alarm
- ▶ The choice and use of firefighting equipment
- ▶ The means by which all occupants escape to safety in the event of a fire
- ▶ The materials stored or in use on your premises

You should pay particular attention to people who may have a disability or anyone who may need special help.

In order to carry out a successful fire safety risk assessment, you must evaluate the level of risk of a fire occurring in your premises. You should remove or reduce any fire hazards where possible and reduce any risks you have identified.

Whilst carrying out a fire risk assessment you should consider the following:

Identify the fire hazards

- ✓ The combustible / flammable material within your premises
 - ▷ e.g. the build-up of waste, display materials, packaging, textiles, liquids, stock or overstocked products
- ✓ The sources of ignition
 - ▷ e.g. naked flames, heaters, electrical / mechanical equipment or some commercial processes
- ✓ The source of oxygen
 - ▷ e.g. air conditioning or medicinal or commercial oxygen supplies

Decide who might be harmed and how

You will need to identify those people who may be especially at risk on your premises such as:

- ▶ People working near to fire dangers
- ▶ People working alone or in isolated areas (such as in roof spaces or storerooms)
- ▶ Children or parents with babies, the elderly or infirm and people who are disabled

Assess the level of risk of the potential for a fire to start in your premises

Put control measures in place to remove or reduce any fire hazards where possible and reduce any risks you have identified.

For example:

- ▶ Replace highly flammable materials with less flammable ones
- ▶ Make sure you separate combustible / flammable materials from sources of ignition

When you have reduced the risk as far as possible, you must assess any risk that is left and decide whether there are any further measures you need to take to make sure you provide a reasonable level of fire safety. You must also provide appropriate information, instruction and training to your employees about the fire precautions in your workplace.

Risk of Fire

Many workplaces will have work activities which cause a risk of fire. Some of these work activities present fire hazards that are unavoidable – in these cases the fire risk must be managed and controlled. Any work activity that presents a fire hazard that is avoidable should be removed and replaced by a less hazardous option.

In many cases the fire hazard might arise from everyday work activities such as cooking or electricity. Planned activities involving naked flames will pose a significant fire risk.

In other cases the activities specific to the workplace may indirectly pose a risk of fire, for example the use of substances such as flammable gases or solvents.

Work undertaken by construction or maintenance contractors on your premises needs to be considered.

Consult with them on:

- ▶ The existing fire safety arrangements within your premises

- ▶ Any changes to the layout of the premises (either temporary or otherwise)
- ▶ Any fire escape routes being affected
- ▶ Switching off the fire detection and fire alarm systems
- ▶ Construction work processes involving heat or the use of flammable materials
- ▶ Use of firefighting equipment

Revised fire safety plans and procedures may need to be produced for your premises and communicated to your employees during the course of construction or maintenance work.



Smoke Detector

General Fire Precautions

1. Fire Detection and Warning System

The sooner the outbreak of a fire is detected and brought to the attention of those on the premises the more likelihood that the fire will be prevented from developing and the more time is available to evacuate if necessary.

- ▶ Fire detection and warning systems vary greatly. Your system must be appropriate to the uses of the building and for the protection of life; it must be able to detect the earliest onset of fire in all parts of the building including unoccupied areas, car parks, concealed areas, service shafts and stores; and it must be able to provide adequate audible and / or visual warning to all persons.
- ▶ Fire detection and warning systems should be designed and installed in accordance with relevant Irish or European standards and Codes of Practice.
- ▶ The correct selection and installation of fire detectors will significantly reduce the amount of false alarms.
- ▶ Also consider the occupants of the building as a valuable reliable detector of a fire.

Once a fire has been detected it is vital that this occurrence is immediately communicated effectively to all occupants of the building. In almost all buildings fire detection systems are linked with a suitable electrically operated fire warning system.

- ▶ Manual call points should be located at strategic points within the building especially along escape routes.
- ▶ Automatic fire detectors should be linked to automatic sounders. The sound from these units must be clearly heard throughout the workplace and should be distinct from all other sounds within the workplace.
- ▶ Visual alarms may be needed where hearing protection aids are required to be worn, or where an employee has a hearing impairment.

2. Emergency Escape Route

Escape routes are safe routes for people to leave the building once a fire has been detected and/or the alarm has sounded.

- ▶ To avoid occupants being trapped by fire or smoke there should be alternative escape routes from all parts of the building.

- ▶ The number of escape routes required depends on the number of people, use and layout of the building.
- ▶ The distance people have to travel to escape should be as short as possible. The travel distance should be measured from the farthest point in a room to the door of a protected stairway or, if there is no protected stairway, to the final exit from the building.

Travel distances allowable depend on:

- ▶ The use of the building
 - ▶ The risk of a fire starting and spreading quickly
 - ▶ The material stored or in use within the building
 - ▶ The occupancy type
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- ▶ Stairways, corridors and areas near the fire exits should be kept clear of obstructions and material which can catch fire.
 - ▶ Escape routes must be adequately fire protected and appropriately signed to assist occupants in finding the final exit door.
 - ▶ High risk rooms such as plant rooms, boiler rooms, communications rooms and stores should not lead directly onto a fire protected stairway.
 - ▶ Emergency lighting should be provided to assist occupants escape in the event of power failure.
 - ▶ Final exit doors on escape routes that lead to the outside must always be available for use without the use of a key, and must open outwards.
 - ▶ Employees must be made aware of all possible escape routes. Fire drills should be undertaken at regular intervals to ensure that all employees are familiar with the evacuation strategy / escape plan.
 - ▶ You must consider the needs of people with a disability that may be on your premises when planning an evacuation strategy.



Emergency Escape Route

3. Means of Firefighting

All workplaces must be equipped with firefighting equipment that is appropriate to the type of fire that is likely to occur within the workplace. The choice, number and location of the equipment will depend on the risk of a fire and the type of a fire that might occur.

Firefighting equipment can range from simple fire blankets, portable fire extinguishers and fire hose reels to sprinkler systems.

- ▶ Firefighting equipment must be in place for employees to extinguish a fire in its early stages, without exposing themselves to danger and to aid evacuation if needed.
- ▶ Firefighting equipment must be suitable to the risks, and employees need to be trained in its proper use.



Firefighting Equipment

4. Emergency Plan

You need to prepare an emergency plan, tailored to your premises, which gives the steps to be taken immediately in the event of a fire being detected. You will also need to give your employees instructions, information and training on the contents of the emergency plan. Consider training specific staff in becoming fire marshals, with specific responsibilities in the event of a fire occurring. The emergency plan may include the following:

- ▶ What staff should do if they discover a fire
- ▶ How to commence the evacuation of the premises
- ▶ Locations of assembly
- ▶ Identification of key escape routes
- ▶ Arrangements for firefighting
- ▶ The duties and identification of staff that have specific responsibilities
- ▶ Arrangements for the safe evacuation of people identified as being especially at risk, such as young people, those with disabilities or employees working alone
- ▶ Any machines / processes / appliances / power supplies that need to be stopped or isolated
- ▶ How the fire and rescue service will be called and who will be responsible for doing this
- ▶ Procedures for meeting the fire and rescue service on their arrival and notifying them of any special risks, for example the location of highly flammable materials
- ▶ What training employees need and the arrangements for ensuring that this training is given

5. Good Housekeeping

This is an essential element in fire safety management. Carelessness and untidiness not only make the outbreak of a fire more likely but will also create conditions which may allow a fire to spread more rapidly.

- ▶ Waste should not be stored, even as a temporary measure, in escape routes such as corridors, stairways or lobbies, or where it can come into contact with potential sources of heat. Waste should be removed at least daily and stored away from the building in suitable containers.
- ▶ Do not allow combustible waste, unused materials, and redundant packaging, such as cardboard, containers or pallets, to build up at the workplace – have them removed regularly. Where a skip is provided for the collection of waste, it should be positioned so that a fire in it will not put the workplace, or any other structure, at risk.
- ▶ Parts of the workplace which are not normally occupied, such as basements, store rooms and any area where a fire could grow unnoticed should be regularly inspected and cleared of non-essential materials. You should also protect such areas against entry by unauthorised people.

6. Maintenance and Testing of Fire Safety Measures and Equipment

All fire safety measures and equipment in the workplace must be kept in effective working order. This includes all fixtures and fittings such as fire doors, staircases, corridors, fire detection and alarm systems, notices and emergency lighting, firefighting equipment (both fixed and portable), fire mains (internal and external) and fire hydrants.

Regardless of the size and nature of the workplace a full and comprehensive list of all essential firefighting equipment must be prepared and regular checks with periodic servicing and maintenance carried out. Maintenance on fire safety equipment must be carried out by competent persons. Any defects identified during this process should be put right as quickly as possible. Records of the maintenance and certificates of servicing and testing must be kept.



Record Keeping

7. Maintenance of Plant and Equipment

Plant and equipment which is not properly maintained can be a source of ignition, for example failure to regularly clean / change filters in extraction hoods, frictional heat caused by loose bolts or belts, electrical malfunction, flammable materials coming in contact with hot surfaces, leaking valves or flanges which allow seepage of flammable liquids or gases, static sparks (perhaps due to inadequate electrical earthing). Procedures for planned maintenance and periodic checking of all plant and equipment must be developed. Records of all inspections and maintenance should be kept.

8. Flammable Materials

No fire will occur without some form of flammable material, therefore consider the nature of the material that you are using in your premises.

- ▶ Quantities of flammable materials should be kept to the minimum necessary for running the business and must be kept away from escape routes.
- ▶ Where possible highly flammable materials should be replaced by less flammable ones.
- ▶ Highly flammable materials should be properly stored outside in a separate building if possible, or separated from the main workplace by fire-resisting construction.
- ▶ Employees who use flammable materials should be properly trained in their safe storage, handling and use.

9. Flammable liquids

Vapours from flammable liquids are usually heavier than air and therefore can travel long distances and come in contact with an ignition source some distance from a spill or leak.

- ▶ The quantities of flammable liquids should be kept to a minimum.
- ▶ Flammable liquids, including empty or part-used containers, should be stored safely in closed containers in a fire-resistant bin or cabinet fitted with a means to contain any leaks.
- ▶ Container lids should always be replaced after use, and no container should ever be opened in such a way that it cannot be safely resealed.
- ▶ Reduce the level of vapours in the air by using them in well ventilated areas or with local extraction / ventilation systems.