

# Fire Risk Assessment Guide

## Introduction

From 1st October 2006 The Regulatory Reform (Fire Safety) Order 2005 requires the Responsible Person (RP) of any non domestic premises to carry out a fire risk assessment, including measures to reduce or eliminate the risk of fire, and identify persons at risk. Where there are 5 or more employees, a record must be kept of significant findings and a definition of a Responsible Person is contained in the above Order.

Where the RP does not have control of all parts of the building and it is shared with other persons, they should be informed of significant risks identified. The person who does have control (landlord, owner, or other employer etc.) has a responsibility to make sure the regulations are complied with, in the parts they control. This may require communication and cooperation between parties to ensure coordination of fire safety provisions, fire fighting measures, evacuation procedures etc.

## Knowledge and experience required

Each RP must consider his or her own circumstances and capabilities in respect of the risk assessment process. Nobody knows as much about the business/activities as the RP but if the RP is not confident in his or her own ability to complete their fire safety risk assessment then they can arrange for a suitably qualified or experienced person to complete the assessment on their behalf.

## Concept of Fire Hazard

When considering fire risk assessment it is useful to understand the definition of fire hazard. A fire hazard has two components balanced against each other, one is the possibility of a fire occurring and the other the magnitude of consequences of that fire. For example a metal fabrication workshop has a high possibility of a fire due to the cutting and welding equipment. But providing the house keeping is good and no combustible substances are present, then a fire is not likely to spread, so the consequence is low, therefore the risk can be considered to be normal or even low.

In the case of a cellulose paint spray booth an occurrence is highly likely because of the products used and the equipment required for the process. The consequences are also very high because any fire would have a rapid development, consequently it would have to be considered a very high risk.

These risks can be reduced to acceptable levels by various methods including good housekeeping, specially designed electric apparatus, equipment located away from the risk and have compressed gasses used in the processes, piped to the risk from a bulk storage or centrally located position.

When evaluating the measures needed or proposed and deciding what would be acceptable then the principle of ALARP (as low as reasonably possible) should be used and information on this subject can be found on the HSE website.

To assist in these decisions a simple matrix below can be used to estimate the level of fire risk.

## Objective of a Risk Assessment.

The principles contained in the fire safety order is to use a risk assessment approach, which is goal based and flexible. The RP generates the risks in the workplace, therefore, to safeguard the safety of employees, the RP must :

- Identify fire hazards and people at risk and to remove or reduce the risk of those hazards causing harm to as low as is reasonably practicable; and
- to determine what fire safety measures and management policies are necessary to ensure the safety of people in the building should fire occur; by
  - ✓ Reducing the probability of a fire starting.
  - ✓ Ensuring that all occupants are alerted and can leave the premises safely its the event of a fire.
  - ✓ Limiting the effects should a fire occur.

Providing the premises have been built and maintained in accordance with building regulations and is of normal risk or lower, this should be a simple matter without significant expenditure. However if the premises are not in accordance with

the building regulations, further guidance and action will be necessary, depending on the complexity, size, occupancy and consequential risks.

The RP can enlist the help of other persons who have the necessary experience or skills to assist him and is known as a competent person. The competent person does not have to be an expert to assist the RP, but he/she needs to have sufficient experience or training with regard to the problems they are assisting with. However a risk assessment on a small premises may be undertaken by the R P following the simple guidance in this document.

A single lined scaled drawing of the premises is highly desirable and drawn to a scale of 1:50 or 1:100 would be considered ideal. Super impose, using a coloured pencil, any fire safety features and take notes of any relevant information useful to the risk assessment.

*Note. The Responsible Person always remains responsible for the outcome. This is worth remembering, should you require help with your risk assessment.*

## **The possible actions required when conducting a Fire Risk Assessment.**

The following provides an overview of fire risk assessment and how you might go about it. Fire risk assessment should be the foundation for all the fire precautions in your premises. It is essential to read and understand the DCLG guidance documents that apply to your premises. Initially a simple single line drawing of the premises to scale, could be drawn, showing any relevant structural features and the use of particular areas e.g. production, storage, office accommodation, storage and plant, etc. A copy of the plan will be useful should you have a fire at your premises, to give to the fire service when they arrive to assist them in fire fighting operations. The plan can then be used to indicate hazards, and persons especially at risk. It will assist you to identify where combustibles and ignition sources come together, or are in close proximity, and the action to be taken. In very small premises a simple naught and crosses system can be used; red circles for combustibles and blue crosses for heat/ignition sources.

### **Identifying fire hazards and possible sources of ignition.**

A knowledge of the fire tetrahedron and the most common causes of fire will assist you in identifying potential fire situations. For a fire to occur it needs a source of ignition, (heat or flame) and a potential source of fuel and oxygen. If the ignition sources and fuel can be kept apart, removed, eliminated or reduced, then the risks to people and your business is minimised. In order to do this you must first identify possible sources of ignition, fuel and oxygen in your workplace.

Identify any sources of ignition, (heat or flame). All workplaces will contain heat/ignition sources, some will be obvious such as cooking equipment or open flames (heating or process). Others maybe less obvious such as heat from chemical processes or electrical equipment.

Possible sources of ignition are:-

- Defective electrical fittings and defective or misuse of electrical apparatus - light bulbs and fluorescent tubes too close to combustible materials, misuse or defective electrical extension leads and adapters, faulty or damaged wiring.
- Matches, Lighters, Candles and Smoking materials.
- Flame or sparks from a work process such as welding, cutting, grinding or the use of a hot air gun.
- Sources of frictional heat.
- Electrostatic discharges.
- Ovens, kilns, open hearths, furnaces or incinerators.
- Boilers, engines and other oil burning equipment.
- Portable heaters.
- Cooking equipment, including deep fat fryers.
- The threat of arson must not be overlooked and the malicious firing of combustible materials.

Potential sources of fuel and unsafe situations:-

- Any combustibles - These can be divided into two main groups; combustible fuels such as paper, wood, cardboard, etc.; and highly combustible fuels such as thinners, solvents, polyurethane foam, etc.
- Any unsafe procedures or acts - Persons undertaking unsafe acts such as smoking next to combustible materials.

- Any unsafe conditions - These are hazards that may assist a fire to spread in your workplace, e.g. if there are large areas of hardboard or polystyrene tiles etc., or open stairs that can cause a fire to spread quickly, trapping people and involving the whole building.
- One hazard that is often overlooked is bad housekeeping and is the easiest to correct. It is responsible for many small fires either starting or certainly spreading and involving far more of the premises than was necessary.

The above list is by no means exhaustive and is provided merely as a guide.

## **The Dangerous Substances and Explosive Atmospheres Regulations 2002**

Certain provisions of the The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) has been included into the RR(FS)O and has extended the requirement to mitigate the detrimental effects of a fire to all premises covered by the RR(FS)O. So when conducting your FRA if you use or store dangerous substances you must also consider DSEAR and how it will affect general fire precautions.

### **Identify any staff or persons who are especially at risk**

Consider the risk to any persons who may be present. In many instances and particularly for most small workplaces most people could be considered a normal risk, and special measures for persons in this category will not be required. There will, however, be some occasions when certain people may be especially at risk from the fire, because of their specific role, location or the workplace activity. You need to consider matters carefully if,

- Sleeping accommodation is provided,
- Persons are challenged e.g. physically, visual, mentally, etc.,
- People unable to react quickly.

### **Evaluate the risks and decide whether existing precautions are adequate or more needs to be done.**

Having identified the hazards, you need to reduce the chance of a fire, both occurring and spreading, thereby minimizing or removing the chance of harm to persons in the workplace.

The risk should be reduced to an acceptable level by :-

- Removing the hazard altogether,
- Reducing the hazard to the point where there is little or no risk,
- Replacing the existing hazard with a safer alternative,
- Segregating the hazard from the workplace,
- Developing a Fire Safety Policy and culture to ensure hazards do not occur in the workplace.

Attempt to classify each area as either high, normal, or low risk.

**Low risk** - areas are those where there is little in the way of heat/flame or fire ignition sources, e.g. a stonemasons workshop where typically there is not much to burn and should a fire occur then people would be able to react in plenty of time.

**Normal risk** - areas will account for nearly all parts of most premises.

**High risk** - areas are where the available time needed to evacuate the area is reduced by the speed of development of a fire, e.g. paint spraying with highly flammable paints, also where reaction time to the fire alarm is slower because of the type of person present or the activity in the premises, e.g. the infirm and elderly or persons sleeping on the premises.

If the building has been built and maintained in accordance with building regulations, it is likely that the means of escape provisions will either be adequate, or you will be able to decide easily what is required in relation to the risk.

Matters you will have to consider are :-

- Means of escape & emergency lighting. Are they adequate in size, number, location, well lit, unobstructed, safe to use, etc.
- Fire fighting equipment - Wall mounted by exits, suitable for the types for hazards present and sufficient in number, should conform to BS EN 3.

- Means for detecting & giving warning in case of fire, Can they be heard by all occupants?
- Are fire evacuation signs and fire routines satisfactory.
- Fire Procedure and Training of employees - What to do in the event of a fire.
- Measures to mitigate the effects of a fire.

Where persons are at risk or an unacceptable hazard still exists, additional compensatory measures will be required from the above list, or repeat all previous stages. It is important that all fire safety provisions are maintained in good order.

Arrangements for warning all occupants in the event of a fire must be adequate and fail-safe. Fire alarm systems, smoke detectors, hand bells, or a single shout may be suitable depending on the size and complexity of the premises. A fire starting in any location should not go undetected and reach a size that could cause persons to become trapped. This is more likely to happen where there is only one way out of an area.

Escape, without the use of key, should be possible from all parts of premises to a place of safety or fresh air without traveling in excess of recommended travel distances. They should be walked regularly and a full evacuation drill practiced annually. Ideally, persons should be able to turn their back on a fire and walk in the opposite direction towards an exit. Many premises, however, will have areas from which there is no alternative way out, for part or all of the escape route, (e.g. most rooms have only one way out). If your premises is small and the fire risk has been assessed as normal or low then there could be no need to have alternative ways out but where your escape is in one direction only, the dead end areas should be kept as short, as few, and as low risk as possible.

The above guidelines are to be used with caution. You must look at each part of the premises and decide how quickly persons would react to an alert of fire in each area. Adequate safety measures will be required if persons are identified as being at risk. Where adequate fire precautions cannot be achieved, you will be required to provide extra fire safety precautions and you should consider using a competent person.

These lists of fire safety measures will assist you in completing this task.

### **Record Fire Safety Risk Assessment Information**

Having carried out a fire safety risk assessment for the premises, the findings must, in some circumstances be recorded, including any action taken or action still to be taken. The assessment record should be retained and made available, on request, to the enforcing authority. Fire safety law requires information to be recorded where five or more employees are employed (whether they are on site or not) or the premises are subject to licensing or registration or an 'Alterations Notice' has been issued requiring this.

It should indicate :-

- Date the assessment was made.
- The hazards identified.
- Any staff and other people especially at risk
- What actions need to be taken and by when.
- The conclusions arising from the assessment.

### **Produce an Action Plan**

The action taken is common sense and in the main inexpensive. Should any requirements prove to be expensive, interim measures should be put in place until they can be implemented (providing persons are not put at an unacceptable risk).

All that remains to do is to make a record of the assessment, prepare the action plan and monitor and review as appropriate.

### **Prepare your Fire Procedure**

The aim of the plan is to ensure that in the event of fire everyone, including contractors and casual employees are sufficiently familiar with the action they should take, and that the premises can be safely evacuated to a location where persons will not be in danger. The RP is responsible for preparing the plan, and in most small premises this should not be difficult. In smaller premises it may simply take the form of a fire action notice that everyone has received training on.

## **Review, revise & monitor on a regular basis.**

Your fire safety risk assessment is not a one-off procedure and should be reviewed regularly. If the findings of the assessment are considered to be no longer valid or there has been a significant change to the premises, or the organisation of the work undertaken has affected the fire risk or the fire safety measures, the assessment should be reviewed. Situations which might prompt a review include:

- A change in the number of people present or the characteristics of the occupants including the presence of people with some form of disability.
- Changes to work procedures, including the introduction of new equipment alterations to the building, including the internal layout significant changes to furniture and fixings.
- Significant changes to displays or quantities of stock.
- The introduction or increase in the storage of hazardous substances; or becoming aware of shortcomings in fire safety measures or potential improvements.