




FIRE SAFETY AWARENESS

COURSE MATERIAL

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Training is not a goal, it is part of the solution to a sustained and improved performance


FIRE SAFETY AWARENESS TRAINING

Module guide

Module guide

- 1 Fires in the workplace
- 2 Fire safety standards
- 3 Protecting people and property
- 4 Fire risk assessments
- 5 The role of the fire warden
- 6 Summary

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Module



Fires in the workplace


Module 1

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What are the most common causes of fires?

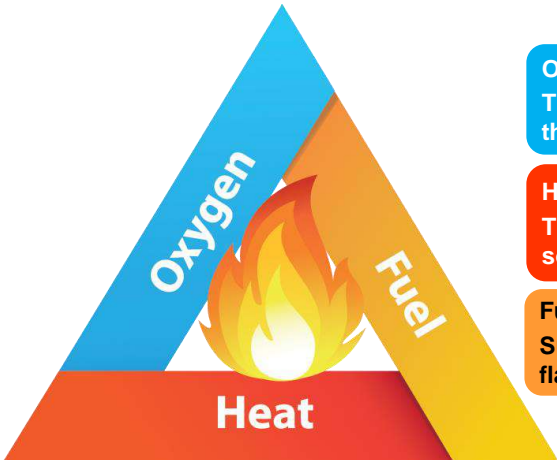
- Electrical equipment
- Hot work
- Friction
- Portable heaters
- Careless disposal of smokers' materials
- cooking equipment
- Faulty cooking equipment
- Work equipment.



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The Fire Triangle



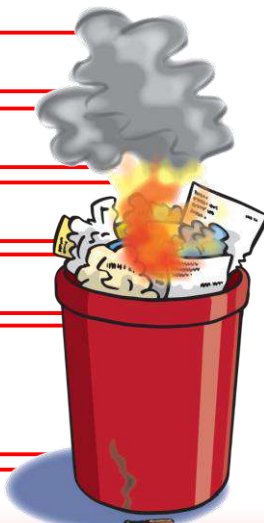
Oxygen:
This is approximately 21% of the atmosphere

Heat:
There has to be an initial source to ignite the fire

Fuel:
Such as paper, wood or flammable substances.

Navigation: Home icon, 5, NEXT

Fire hazards



- Heat
- Smoke
- Flame
- Lack of oxygen
- Other products of combustion**
(when PVC burns, over 100 different toxic compounds are produced)
- Structural collapse.**

Navigation: Home icon, 6, NEXT

Fire spread

The diagram illustrates four methods of fire spread:

- Direct burn:** A fire burning on a surface next to a stack of boxes.
- Radiation:** A fire with red arrows pointing outwards, representing heat radiating from the fire.
- Convection:** A fire with white arrows pointing upwards, representing hot air rising. Below the fire, black arrows labeled "COOL AIR" point towards the fire, representing the flow of cooler air.
- Conduction:** A fire on a surface with red arrows pointing to a vertical wall, representing heat transfer through the wall.

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Definitions

The illustration shows a fire with a stack of three cardboard boxes in front of it.

- Flashover:** The rapid transition from a growing fire to a fully developed fire
- Backdraft:** The explosion or rapid burning of fire gases resulting from the introduction of oxygen to a subdued fire.

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4 Stages of Fire

- Incipient (Initiation)
- Growth (Spread)
- Fully Developed
- Decay

Explanation

Example

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Signs of flashover

The fire is occurring in a well-ventilated compartment so lack of air is not an issue

There is a rapid build-up of heat

Tongues of flame can be seen in the smoke above the fire



All combustible materials in the room are giving off flammable gases (pyrolysis).

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NEXT ➔

Signs of backdraught


- A large amount of smoke with no visible flame
- Blackened (or browned) windows when viewed from outside
- Smoke appearing to pulse in and out where gaps exist in doors and windows (caused by the volume of smoke expanding and contracting)
- Billowing yellow or brown smoke (sometimes giving the shape of cauliflower florets).



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How much do you know?

Which of the following is a component part of the triangle of fire?

- A** Nitrogen
- B** Oxygen
- C** Carbon dioxide
- D** Carbon monoxide






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 **How much do you know?**

Which of the following is a sign of a flashover?

- A** A large amount of smoke with no visible flames
- B** Smoke appearing to pulse in and out of gaps in doors and windows
- C** Blackened windows when viewed from outside
- D** The fire is in a well-ventilated compartment






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 **How much do you know?**

Which form of fire spread is considered the most dangerous?

- A** Direct burning
- B** Radiation
- C** Conduction
- D** Convection



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Module

Fire safety standards

Module 2


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Fire safety standards

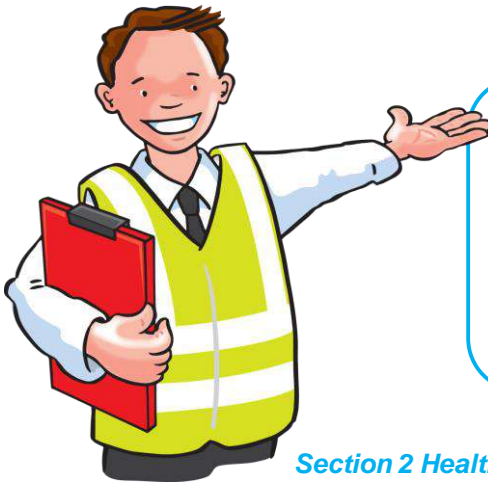
By the end of the module learners will be able to:

- Outline the role of the employer with respect to fire safety in the workplace
- Outline the role of the responsible person with respect to fire safety matters
- Outline the role of the employee in respect to fire safety in the workplace
- List the possible consequences for failing to comply with fire safety standards.



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Employer responsibilities

KEY POINT

'Every employer must ensure, as far as is reasonably practicable, the health, safety and welfare of all his employees'

Section 2 Health and Safety at Work etc Act 1974.

Navigation icons: back, home, forward, 17, NEXT




Employer responsibilities continued...

Subsections – the employer must provide:

- Safe plant and equipment and safe systems of work for that plant and equipment**
- Safe systems of work**
- Ensure safe working environment**
- Provide information, instruction, training and supervision**
- A consultation process with employees**
- Have a health and safety policy (written if 5 or more employees).**

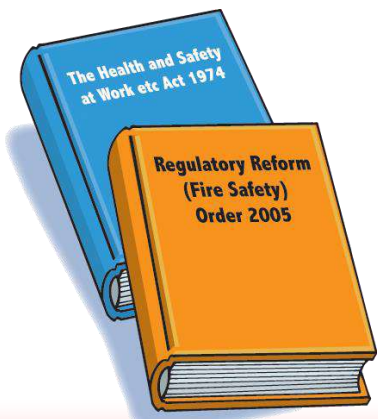
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Regulatory Reform (Fire Safety) Order 2005

Purpose


- Reduce the problems faced by businesses due to the large amount of fire safety legislation
- Consolidate the large amount of overlapping legislation
- Provide clarity to enforcement
- Be proactive rather than reactive in fire safety.




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Definitions



Responsible person:
This is the employer or any other person who may have control of any part of the premises. The person with final responsibility for fire safety as detailed in the Regulatory Reform (Fire Safety) Order 2005

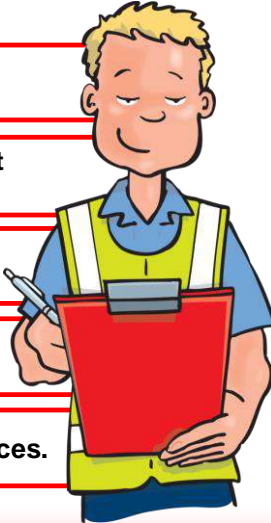


Relevant person:
Any person who is lawfully on the premises or those in the immediate vicinity, but not firefighters carrying out their duties.


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Responsible person



- Carry out a fire risk assessment
- Appoint one or more competent persons to assist with compliance with the order
- Inform non-employees of relevant risks
- Inform the employer of others present, e.g. contractors or agency staff and the relevant risks
- Establish a means of calling the emergency services.

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Responsible person continued...



- Ensure fire-safety equipment is maintained in working condition by a competent person
- Provide clear and relevant information on risks
- Fire prevention measures
- Provide information to employees
- Consider substances which are dangerous and the risks to relevant persons
- Provide induction training, within working hours, on fire safety followed by refresher training periodically.

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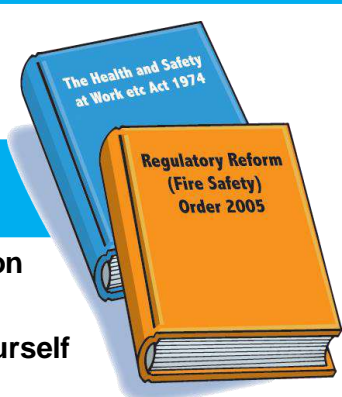
Employees' duties



Health and Safety at Work etc. Act 1974

- Take reasonable care of themselves and others
- Cooperate with the employer

Regulatory Reform (Fire Safety) Order 2005

- Cooperate with the responsible person
- Report fire-related matters
- Do not do anything which will put yourself or others at risk.






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How much do you know?

Who is responsible for ensuring a safe system of work?

- A** The local authority
- B** The primary care trust
- C** The employer
- D** The fire warden




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 **How much do you know?**

Which option correctly completes the following statement?

'The Regulatory Reform (Fire Safety) Order identifies the _____ person as any person who is lawfully in the premises or those in the immediate vicinity, but not firefighters carrying out their duties'

- A** Affected
- B** Relevant
- C** Responsible
- D** Approved



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 **How much do you know?**

Under the Regulatory Reform (Fire Safety) Order 2005, how would a shop customer be defined?

- A** A responsible person
- B** An affected person
- C** A relevant person
- D** A monitored person



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Module

Protecting people and property

Module 3

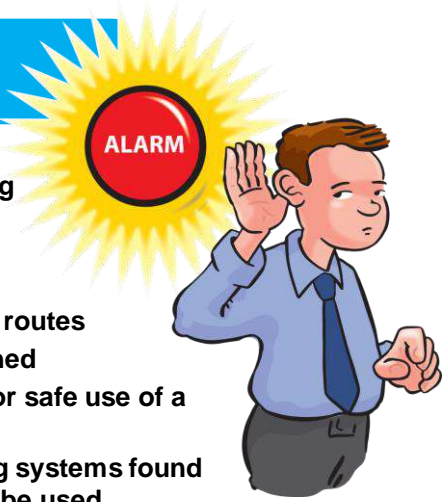
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Protecting people and property

By the end of the module learners will be able to:

- Identify the different methods of detecting and sounding a warning of fire
- Outline the components of 'means of escape' including compartmentation and protected routes
- Describe how fires are extinguished
- Outline the conditions required for safe use of a fire extinguisher
- Identify common fixed firefighting systems found in workplaces and how they may be used.



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Detectors

Smoke detectors

- Ionisation
- Optical



Heat detectors



- **Fixed temperature**
- Rate of rise.





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Sounding a warning in case of fire

Manual



Electric

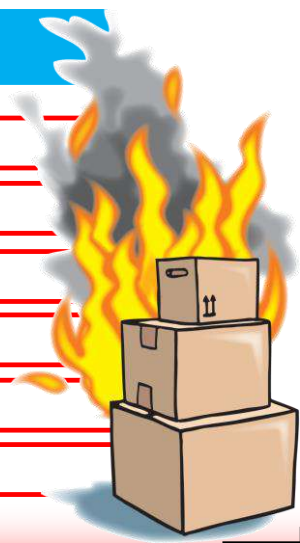


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Physical factors

Restricting smoke and fire spread


- Compartmentation
- Fire separation
- Doors
- Smoke control and ventilation
- Internal and external walls
- Cavities.



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Physical factors - escape



Restricting smoke and fire spread

- Means of escape
- Maintaining means of escape
- Signs and notices
- Lighting.

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Fire classification

Fire classification	Fire risk
 Class A	Paper, wood, textiles and fabrics
 Class B	Flammable liquids: petrol, oil, paints and solvents
 Class C	Flammable gases
 Class D	Metal fires (magnesium & sodium)
 Class E	Fires involving electricity.
 Class F	Cooking oils and fats


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Methods of extinguishing fire

Cooling	Smothering	Interfering with chemical reaction
 Water	 Foam	 CO ₂
 Wet chemical	 Fire blanket	 Powder
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Fire extinguishers - water



Classification 



Red indicator panel

Suitable for use on Class A fires, paper, wood, textiles and fabrics


Not suitable for combustible liquids, cooking fats, etc



Not safe to use on fires involving electricity

Extinguishes by cooling.

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Fire extinguishers - foam





Classification  

Cream indicator panel


Suitable for Class A and B fires



Not suitable for use on fires involving electricity

Extinguishes by smothering and sealing the surface of a burning liquid.

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Fire extinguishers – carbon dioxide



Classification  



Black indicator panel

Best on Class E fires


Safe to use on fires involving flammable liquids (Class B)





Extinguishes by reducing oxygen levels and smothering

Not to be used in confined areas – can cause asphyxiation.

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Fire extinguishers - powder





Classification    

Blue indicator panel


Best on Class B fires but safe to use on any type of fire



Extinguishes by chemically interfering with the combustion

Do not use in a confined area due to inhalation.

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Fire extinguishers – wet chemical



Classification  

Yellow indicator panel

Specifically designed for use on cooking oil/fat fires


Can be used on Class A fires

Extinguishes by smothering and cooling (a fine nozzle creates a mist spray which reacts with the oil/fat)

Do not use on electrical fires.

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Fire extinguishers – fire blanket




Label is usually red or white

For use on any type of fire but best on small contained Class B fires

Extinguishes by smothering

Normally used in kitchens







One use only.






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Can you identify the type of fire from the symbol?

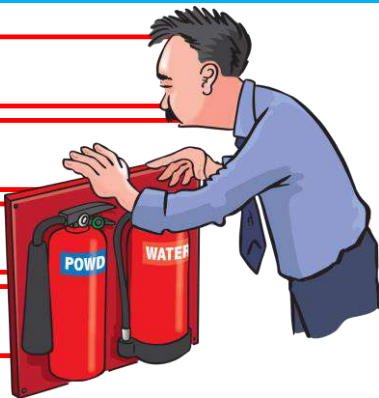
Fire classification

	Flammable liquids, petrol, meths, solvents, etc
	Cooking fats
	Flammable gases, methane, hydrogen, etc
	Free-burning materials, paper, wood, plastics, etc
	Metals, potassium, sodium, magnesium, etc
	Fires involving electricity





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Information on fire extinguishers

Type of extinguisher	
Method of operation	
Class of fire suitable for use	
Service maintenance date	

KEY POINT

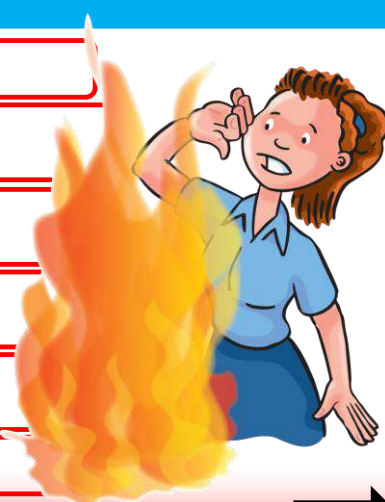
All extinguishers should be inspected every 6 months by a competent person, e.g. an extinguisher engineer.

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Firefighting


Only attempt to fight a fire if:

- The alarm has been raised**
- The emergency services have been contacted**
- The fire is not spreading and is confined**
- You have a clear escape route not threatened by fire**
- You have selected the correct extinguisher**
- You have received practical training.**



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Operating fire extinguishers




- **Select the correct extinguisher**
- **Check the contents gauge**
- **Pull the pin to break the seal**
- **Holding the extinguisher upright, squeeze the trigger**
- **Test the range and content (away from the fire)**
- **Extinguish the fire using the correct method for the type of extinguisher and type of fire.**

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Firefighting

Do not attempt to fight the fire if:

- It is bigger than a wastepaper bin size (rule of thumb)
- You need more than one extinguisher
- The room is filling with smoke
- You do not have a clear escape route
- Gas cylinders or chemicals are involved
- Your efforts are not reducing the size of the fire
- You do not have the correct extinguisher
- You have not been trained to use a fire extinguisher.


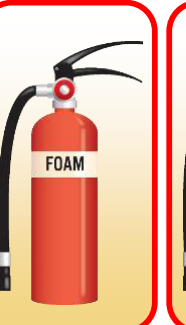






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Which type of fire extinguisher to use?

5) Wood, paper & fabrics



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Module

Fire risk assessments

Module 4


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Fire risk assessments

By the end of the module learners will be able to:


- Define the terms 'hazard' and 'risk' in relation to fire safety
- List the most common workplace fire hazards
- Outline the importance of using fire risk assessment as a means of reducing the risk of fire
- Outline the steps to be taken when completing a fire risk assessment
- List the items to be included in a simple fire safety checklist.




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Definitions








Hazard:
Something with the potential to cause harm



Risk:
The likelihood of harm occurring.

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Fire risk assessments

A systematic review of the premises

- The activities undertaken
- Identification of fire hazards
- The likelihood of a fire occurring
- Identification of those at risk
- To reduce the risk of those hazards causing harm to as low as is reasonably practicable
- To decide what physical precautions and management arrangements are necessary to ensure the safety of people on the premises if a fire occurs

KEY POINT

The responsible person must ensure a fire risk assessment is carried out.

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Fire hazards – sources of ignition

How many sources of ignition can you name?

- Naked flames
- Welding
- Grinding
- Heaters
- Smoking materials
- Electrical equipment
- Lighting
- Hot processes
- Hot equipment
- Activities which create sparks.

1 Fire hazards

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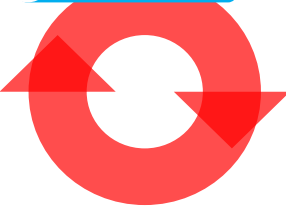
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Fire hazards – sources of fuel

How many sources of fuel can you name?

1 Fire hazards



- Waste
- Packaging
- Fixtures and fittings
- Flammable liquids
- Stock
- Wall coverings
- Bin stores
- Ceiling coverings
- Production waste
- External
 - Pallets
 - Vehicles.



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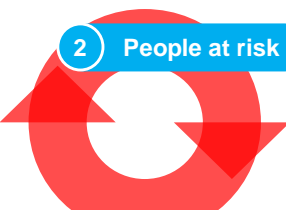
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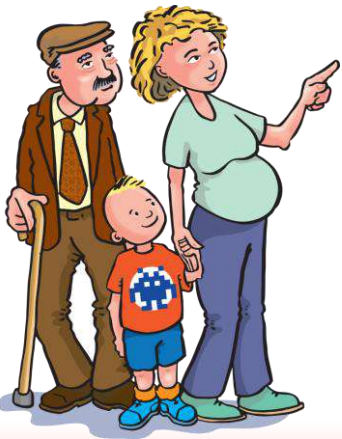
People at risk

Who might be at risk?

2 People at risk




- Employees
- Visitors
- Contractors
- Customers
- High Risk
 - Lone workers
 - Night staff
 - Elderly
 - Children
 - Disabled.



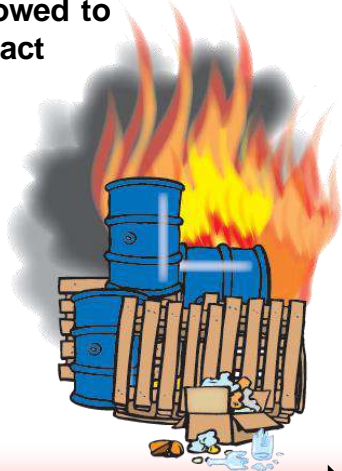
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Evaluate and act




- Ensure at all times that sources of fuel are not allowed to come into contact with sources of ignition.






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Evaluate and act

Ensuring safety in your workplace




- Are you certain everyone will know there is a fire?
- Is there a way of warning others?
- How will you ensure everyone is able to get out?
- How will the fire service be contacted?
- Is there a chance of putting out a small fire quickly?






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Evaluate and act




3 Evaluate and act

Escaping from your workplace

- Are escape routes planned?
- Can everyone find their way out safely even when escape route lighting fails or it is dark?
- Is all fire-safety equipment maintained and tested?
- Will everyone know what to do in case of fire?
- Will everyone know what to do on hearing the alarm?
- Do those required to use equipment know how to use it?

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Record, plan and train



4 Record, plan and train

- Make a record of your findings
- Is there a fire plan?
- Has the fire plan been communicated?

Training requirements:


- Fire drill practice
- Fire wardens
- Information
- Temporary staff
- Contractors
- Visitors
- Shared buildings.




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Review




- Building alterations
- Staff alterations
- Fires or potential fires
- Changes to stock or processes
- Changes in the use or storage of hazardous substances
- Increased stock levels due to work activity.







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What do you need to know regarding fire procedures?




- Company fire procedures
- What to do if they discover a fire
- How to call the emergency services
- The location of all the exit routes
- The correct evacuation procedures
- The nearest fire exit and alternatives
- The location of the appropriate fire extinguishers
- The fire assembly point



All employees should take part in at least two fire evacuation drills per year.

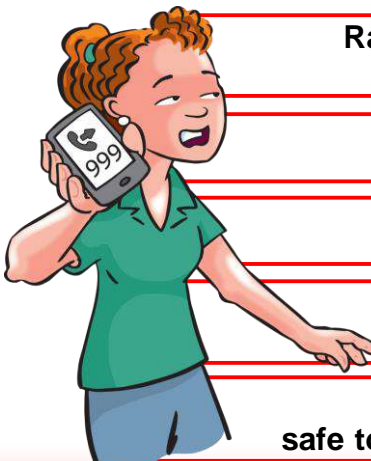


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Action in the event of fire

Actions when discovering a fire





- Raise the alarm - yell 'Fire, Fire, Fire' to warn others**
- Operate the nearest call point**
- Call the Fire Service (999 or 997)**
- Evacuate by the nearest safe route and report to the assembly point**
- Attempt to fight the fire only if it is safe to do so and you have been trained.**

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Action in the event of fire


On hearing the alarm, DO:

- **Leave the building by your nearest available exit**
- **Ensure all doors are closed behind you if you are the last one to leave the room**
- **Report to the assembly point**
- **Report any persons not accounted for to the person undertaking the roll call**
- **Only re-enter when told it is safe to do so by the fire service**


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Action in the event of fire

On hearing the alarm, DO NOT:




- Delay evacuation for any reason including to collect personal belongings
- Use lifts
Do use the stairs to evacuate. The lift may open directly onto the fire or may become inoperable as a consequence of the fire
- Take any risks


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NEXT



Action in the event of fire – fire assembly point




On arrival, all staff and visitors must be accounted for. Someone must be nominated to be in charge of the assembly point

Signing-in records and visitors books must be taken to the fire assembly point for this use

Gather the information to be reported to the fire service when they arrive.


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Fire prevention - contractors

Contractors must:

- Have hot-work permits
- Work to their method statement
- Use up-to-date, tested, electrical equipment
- Be made aware of company fire procedures, including how to raise the alarm.

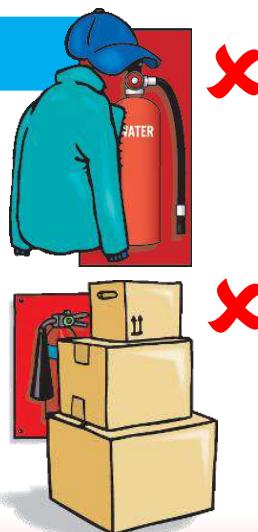


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Fire prevention

Good housekeeping:

- Remove waste regularly
- Keep dust and lint from accumulating
- Keep electrical cables tidy and fully uncoiled if on a reel
- Keep combustible storage to a minimum
- Store combustible products away from ignition sources
- End-of-shift checks
- Keep extinguishers, call points and signage clear at all times and easily accessible.



NEXT 

Fire signage and symbols



Fire escape
Keep clear



Fire door
Keep shut



FIRE EXIT



2 Fire assembly point



FIRE EXIT




FIRE EXIT



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How much do you know?

The potential of something to cause harm defines:

- A a hazard
- B the risk
- C the likelihood of harm
- D danger




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 **How much do you know?**


Which option correctly completes the following statement?

“The purpose of a fire risk assessment is to identify fire hazards, _____ and to identify any actions that to be taken to maintain personal safety in case of fire”.

- A** recognise fire extinguishers
- B** reduce the risk
- C** appoint fire wardens
- D** list the nearest fire station






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 **How much do you know?**

Daily fire safety checklists include:

- A** emergency push bars on fire doors in good order
- B** escape routes clear and free from obstruction
- C** emergency lighting in full working order
- D** fire alarm in full working order



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Module



Role of the fire warden

Module **5**


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Fire warden

By the end of the module learners will be able to:


- Outline the role and function of a fire warden during normal work activities
- Describe the role and function of a fire warden when the fire alarm sounds when at or away from their area of responsibility
- List the contents of a fire safety briefing.



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Role of the fire warden – general duties




- Check fire doors are not wedged or propped open
- Ensure escape routes are free from obstructions
- Ensure final exit doors are free from obstructions
- Assist with fire risk assessments
- Assist with the development of evacuation and emergency plans
- Ensure extinguishers are sited where they should be.

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Role of the fire warden – general duties cont...

- Check fire alarms can be heard in the allocated area
- Ensure call points are accessible
- Ensure all means-of-escape signs are in place and lighting is working
- Ensure outdoor areas are well lit and allow clear routes to the assembly point
- Check arson risk areas
- Check electrical equipment.



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NEXT






Role of the fire warden

Supervisory role in the event of fire:


1. Assist in evacuation
2. Sweep of designated area
3. First aid firefighting
4. Ensure doors and windows are closed
5. Coordination of roll call
6. Liaise with fire and rescue service.





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Fire safety briefing

- The actions to be taken on discovering a fire
- The actions to be taken on hearing the alarm
- How to call the fire service
- The routes to be taken as means of escape
- How to open escape doors
- The evacuation plan including assembly point
- The significant findings of the fire risk assessment
- How to operate and read the alarm panel (if fitted).



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Fire safety briefing cont...

- The nominated roles and responsibilities in the workplace
- Non-employee procedures
- Fire prevention and protection measures
- Managing fire doors
- Good housekeeping
- Risks from any flammable materials
- Special arrangements for high-risk areas/activities/disabled persons.




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How much do you know?


Which of the following is a key point of a fire safety briefing?

- A** The location of the first aid point
- B** The evacuation plan and assembly point
- C** The location of the accident book
- D** The contents of the safety policy




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 **How much do you know?**


What is an alternative name for a fire warden?

- A** Fire sheriff
- B** Fire deputy
- C** Fire marshal
- D** Fire guard





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Module



Summary


Module 6



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Learning outcomes

Learners will understand:

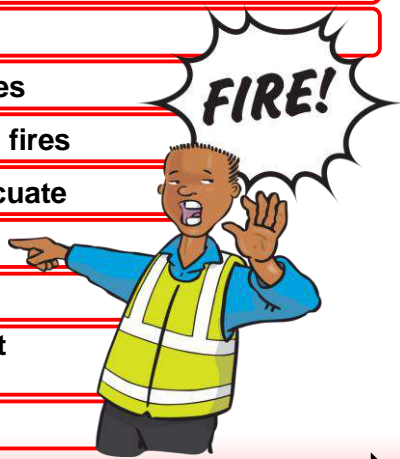
- The causes and effects of workplace fires
- The measures to be put in place to protect people and property
- Fire Safety Standards
- The purpose and use of fire risk assessments
- The role of the fire warden.





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Summary


- Be fire safety conscious
- Report any fire hazards
- Know your fire emergency procedures
- Don't use water or foam on electrical fires
- Don't use lifts - use the stairs to evacuate
- Know your fire assembly point
- Know the escape routes
- Know the locations of fire equipment and how to use it
- Know your responsibilities.



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Conclusion!

Thankyou!!!

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