# Exit Routes, Emergency Action Plans, and Fire Prevention

## Lesson 3 Study Guide

### LESSON PURPOSE:

The purpose of this lesson is to provide you with information that enables you to recognize and eliminate potential hazards related to exit routes and fires.

### LESSON OBJECTIVES:

By the end of this lesson, you will be able to:

- Identify exit routes and fire hazards
- Describe the major types of exit routes and fire hazards
- List ways to protect yourself by utilizing an emergency action plan
- Explain how employers are responsible for implementing an emergency action plan

# Exit Routes

Learn to recognize major exit routes on worksites.

## Exit Routes Defined

OSHA defines exit routes as:

> "Continuous, unobstructed paths from a point in a building to a point of safety."

Exit route hazards occur when there are not enough exit routes for a person to safely evacuate the building or the area. There should be enough exit routes for everyone in the workspace to evacuate quickly and safely if there is an emergency.

## Exit Route Parts

1. **Exit access** – The portion of the route that leads to the exit
2. **Exit** – The portion that provides a protected way of travel to the exit discharge
3. **Exit discharge** – The portion of the route that leads directly outside of the building

## Examples of Exit Routes

- An exit route that is not clearly marked
- An exit door that is locked, barricaded, or blocked, or exit routes that lead through doors that could be locked
- A building that does not have enough exit routes to sufficiently accommodate the number of people in the building
- Exit doors that are not side hinged
- Exit routes that are not at least 7 ½ feet tall or 28 inches wide
- Exits that are not separated by fire-resistant materials
- Exit discharges that do not lead directly outside
- An exit route that is not a permanent part of the workplace

# Fire Hazards

Learn how to identify fire hazards in the workplace.

## Fire Hazards Defined

OSHA defines fire hazards as:

> "Items that could easily catch fire or start a fire."

## Examples of Fire Hazards

- Candles
- Ovens
- Electrical wiring
- Chemicals

**In the workplace, everyone is responsible for fire safety.**

## OSHA Standards for Exit Route and Fire Hazards

Poorly designed exit routes and evacuation plans have led to several tragic incidents. Because a blocked or locked exit route can lead to serious injury or death if an emergency happens, OSHA strictly enforces its standards for exit routes.


*A fire extinguisher is a great example of a fire control device*

The Triangle Shirtwaist Factory fire was one of the most prominent accidents in U.S. History. In 1911, 146 workers were killed.

Loss of life occurred because of several safety violations:

- Stairwell doors were locked
- Workers were trapped by long tables and bulky machines
- The building's fire escape was poorly built, resulting in its collapse as workers attempted to flee
- There were not enough available water buckets to douse the fire

Tragedies like this one have helped lead to many of the standards that now exist for all exit routes.

# Types of Exit Route Hazards

When workers are trying to evacuate quickly, they need a clear path to safety.

## Contributing factors to exit route hazards

**Obstructions**

- According to OSHA:

> "Exit routes must be free and unobstructed. No materials or equipment may be placed, either permanently or temporarily, within the exit route."

**Locked or blocked doors**

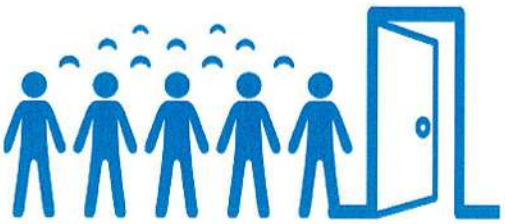
- Exit doors must be unlocked and able to be opened from the inside at all times, without keys, tools, or special knowledge.

**Poorly marked exit routes**

- Exit routes must be easily identifiable, well lit, permanent, and contain an exit sign at each exit.
- Exit signs must be visible, illuminated from a reliable light source, and distinctive in color.


**An insufficient number of exit routes**

- A building must have enough exit routes to ensure that everyone in the workplace can evacuate safely.



**Explosive or highly flammable materials**

- An exit must be separated from the workplace by fire-resistant materials in the event of a fire or explosion preventing occupants from evacuating.

# Types of Fire Hazards

The recognition of fire hazards is necessary for workplace safety.

## Contributing factors to fire hazards

**Flammable and combustible materials**

- Because these materials can ignite at any time, a workplace must have adequate fire control devices (e.g. hoses or fire extinguishers).
- When flammable liquids are used, there must be a way to dispose of leakage or spills promptly and safely. Regular disposal of these liquids must be practiced.

**High hazard areas and hazardous materials**

- High hazard contents are materials that are likely to burn quickly or produce poisonous fumes or explosions in a fire.
- An exit route should not be designed to have people walking toward or into high hazard areas.
- If materials are not handled and stored carefully and properly, it could lead to a fire or another type of workplace disaster.

**Ignition sources**

- Employees MUST be aware of potential ignition sources in their workplace, and keep them away from flammable and combustible materials.
- Examples include:
  - Open flames
  - Lighters
  - Space heaters
  - Heat guns
  - Static electricity
  - Hot surfaces
  - Electric arcs and sparks
  - Welding equipment

**Electricity hazards**

- Most electrical hazards can be eliminated through safeguards and safe work practices:
  - Using ground fault circuit interrupters
  - Ensuring that exposed boxes are made of non-conductive material
  - Using plugs designed to prevent energization until insertion occurs
  - Making sure that circuit breaker and fuse boxes are appropriately labeled
  - Providing training on how to properly use equipment and follow instructions when using equipment

# Emergency Action Plan

When there is an emergency in your workplace, you should know what to do.

## An emergency action plan...

- Must be in writing, kept in the workplace, and be available to all employees for review.

### REMEMBER

If the company has 10 or fewer employees, the plan can be communicated orally.

- Contains important information about emergency evacuation procedures, floor plans/maps showing emergency escape routes, and actions to be taken by employers and employees in an emergency.
- Covers all types of emergencies, such as fires, explosions, toxic chemical releases, hurricanes, tornadoes, blizzards, and floods.
- Describes additional responsibilities that are to be carried out by specified employees to ensure an emergency is handled as smoothly as possible.

### EXAMPLE

The designated emergency response coordinator is responsible for directing emergency activities, ordering an evacuation, contacting emergency services, and answering questions about the company's emergency action plan.

**Many emergencies in the workplace can be prevented by taking proper safety precautions.**

Here are some examples:

- Ensure hazardous materials and flammable liquids are properly handled and kept away from ignition sources
- Unlock or unblock exit doors and remove obstructions from exit routes
- Wear appropriate personal protective equipment, as appropriate
- Fix or replace fire alarms and/or fire extinguishers
- Lock out, tag, and replace worn or frayed electrical cords

**Fire Detection Systems** must meet OSHA standards. They are required to be Installed correctly, tested regularly, maintained in working condition, kept on when not being serviced, cleaned regularly, equipped with supervised systems, and repaired or replaced when not working properly.

**Fire Extinguishers** help put out and/or control small fires. They must be mounted, located, and identified so that they are easily accessible to employees without subjecting them to possible injury. They must also be maintained, fully charged, operating properly, and kept in their designated locations when not being used.

| Type | Description | Symbol |
|---|---|---|
| Class A | Designed to stop paper, cloth, wood, and many plastic fires | A |
| Class B | Used on fires in oil, gasoline, some paints, lacquers, grease, solvents, other flammable liquids | B |
| Class C | Used for fires in wiring, fuse boxes, energized electrical equipment, computers, and other electrical sources | C |
| Multipurpose | Can be used on fires normally requiring Class A/B/C extinguishers | N/A |
| Class D | Used on fires involving powders, flakes, or shaving of combustible metals | D |
| Class K | Used on kitchen fires | K |

# Employer Responsibilities

Employers are required by OSHA to provide a workplace free from serious recognized hazards.

Emergencies are never expected, but they can happen any time. Employers are responsible for establishing an effective emergency action plan and preparing their workers to handle any emergencies that might occur in the workplace.

It is the employer's responsibility to ensure their workplace complies with OSHA standards and requirements for exit routes, fire prevention, and emergency action procedures.

## Requirements for Exit Routes

- Permanent
- Enough exits in the proper arrangement for speedy escape
- Separated by fire resistant materials
- Exit openings must be limited to those necessary to allow access to exit or exit discharge
- Must be protected by approved self-closing fire door
- Must be maintained during construction, repairs, or alterations
- Arrangement of exit routes should be so that an employee will not have to travel toward a high hazard area, unless it is effectively shielded
- Emergency safeguards (i.e. sprinkler and alarm systems) must be working

## Requirements for Emergency Action Plans

Once an employer develops a comprehensive emergency action plan, they must properly communicate it to their employees to avoid panic, confusion, and misinformation. It should be regularly evaluated and updated as needed.

Employers should train their employees about workplace hazards and teach them what to do in an emergency. Every employee should be familiar with the evacuation plan, alarm system, reporting and shutdown procedures, and potential emergencies.

**Housekeeping** is a vital part of maintaining a safe workplace. Here are examples of OSHA standards for housekeeping:

- Keeping all workplaces, passageways, storerooms, and service rooms clean, orderly, and sanitary
- Keeping aisles and passageways clear and in good repair, with no materials or obstructions that might create a hazard
- Making sure that working surfaces are cleared of debris, especially solid and liquid wastes, at the end of each work shift or job

**Alarm systems** are designed to alert people inside a building when there's an emergency. OSHA states:

> "Employers must install and maintain an operable employee alarm system that has a distinctive signal to warn employees of fire or other emergencies."

Alarms must be recognized by all employees as a signal to evacuate the work area or perform actions identified in the emergency action plan.

# Employer Responsibilities

It is important that the company's emergency action plans are properly communicated.


## Requirements for Fire Prevention Plans

Fire prevention plans must include the following:

- List of all major fire hazards in the workplace
- Proper handling and storage procedures for all hazardous materials
- Potential ignition sources and how they're controlled
- Type of fire protection equipment necessary for each hazard
- Procedures for controlling flammable and combustible waste
- Procedures for maintenance of safeguards on heat-producing equipment
- Name/job title of employees responsible for maintaining equipment or controlling fuel source hazards

A poorly planned evacuation can result in confusion, injury, and property damage. To avoid these, employers should do the following:

- Designate evacuation wardens to check offices, restrooms, and other areas to make sure all workers have evacuated the area
- Give someone the task of accounting for all employees
- Encourage their employees to know where they should go in the event of a building evacuation order
- Train employees to shut off equipment in the event of a critical operation shut down
- Provide a medical and first aid program

Any time an employee is hospitalized, has a body part amputated, or loses an eye due to a work-related accident, the employer must notify OSHA in person or over the phone within 24 hours. If there is a workplace fatality, the employer must notify OSHA within 8 hours.

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