



Emergency Action Plans and Fire Protection

The OSHA 10-Hour Construction Industry Course

Required Online Topic Time: 30m



Learning Objectives



Duration

30 minutes

Terminal Learning Objective

Given current OSHA and industry information regarding worksite illnesses, injuries, and/or fatalities, the student will be able to recognize hazards and best practices associated with emergency action plans, fire prevention plans fire protection, and exit routes.

Enabling Learning Objectives

- Recognize benefits of an Emergency Action Plan.
- Identify elements of Fire Protection Plan.
- Identify conditions under which evacuation actions may be necessary in an emergency situation.
- Identify conditions under which shelter-in-place may be necessary in an emergency situation.
- Identify characteristics of an effective emergency escape route.
- Recognize the five types of fire extinguishers, including the types of fires they can extinguish.
- Review requirements for proper maintenance of portable fire extinguishers.

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Emergency Action Plan



An **emergency action plan (EAP)** is a written document required by particular OSHA standards.

Well developed emergency plans and proper employee training will result in **fewer** and **less severe** employee injuries and less structural damage to the facility during emergencies. An EAP:

- Describes **actions** that must be taken to ensure employee safety in emergencies.
- Uses floor plans/maps to show emergency **escape routes**.
- Tells employees **what actions** to take in emergency situations.
- Covers **reasonably expected** emergencies.



Emergency Action Plan

continued...



An EAP must have certain elements, including but not limited to:

- *A means of reporting fires and other emergencies*
- *Evacuation procedures and emergency escape route assignments*
- *Procedures for employees who remain to operate critical plant operations before they evacuate*
- *Accounting for all employees after an emergency evacuation has been completed*
- *Rescue and medical duties for employees performing them*
- *Names or job titles of persons who can be contacted*



Emergency Action Plan

continued...



Knowledge Key

An EAP documents what should be done during different types of emergencies. Having a plan in place means that it's less likely injuries or damage will occur during an emergency. It also provides information on post emergency plans and communication. Every employee should be trained on the plan and know their individual responsibilities.

Fire Prevention Plan



A fire prevention plan is a written document that facilitates and organizes employer and employee actions during workplace emergencies. It:

- *Uses floor plans/maps to show emergency escape routes.*
- *Tells employees what actions to take.*
- *Covers reasonably expected emergencies.*

Fire is a **very rapid chemical reaction** between oxygen and a combustible material, which results in the release of heat, light, flames, and smoke. For fire to exist, four elements must be present at the same time:

- *Enough oxygen to sustain combustion*
- *Enough heat to raise the material to its ignition temperature*
- *Some sort of fuel or combustible*
- *The chemical reaction that is fire*



Fire Prevention Plan continued...



Prevent fires by cleaning spills of flammable liquids properly, disposing of combustible scrap in covered metal receptacles, not smoking near flammable or combustible liquids, etc.

Do not create situations that could create problems should a fire occur, such as obstructing fire doors and shutters, blocking the path to a fire extinguisher, propping open emergency doors, etc.

Report any obvious hazards to your supervisor.

You should be aware of **common ignition sources** which could start fires in or around your worksite. **Examples of ignition sources include:**

- Open flames (such as pilot fires)
- Smoking
- Static electricity
- Hotwork (such as welding, cutting, and brazing)
- Electrical and mechanical sparks
- Lightning

Fire Prevention Plan continued...



Knowledge Key

Having a fire prevention plan means that because advance planning has taken place, any emergencies should result in few injuries and damage. Fire prevention plans have required elements and they must exist in a written format which employees can be trained on. Understanding the risks and hazards associated with fires assists in preventing accidents occurring in the first place.

Evacuation



A **wide variety** of emergencies, both man-made and natural, may require a workplace to be evacuated. These emergencies include:

- *Fires*
- *Explosions*
- *Floods*
- *Earthquakes*
- *Hurricanes*
- *Tornadoes*
- *Toxic material releases*
- *Radiological and biological accidents*
- *Civil disturbances*
- *Workplace violence*

The decision to evacuate is dependent on factors such as of the **extent** or **location** of the emergency or even the **type of building** in which it is occurring.

A **fire** is the most common type of emergency for which businesses must plan. A critical decision when planning is whether or not employees should fight a small fire with a **portable fire extinguisher** or **simply evacuate**.



Evacuation continued...



Portable fire extinguishers have two functions:

- *To control or extinguish small (or incipient stage) fires*
- *To protect evacuation routes that a fire may block directly or indirectly with smoke or burning/smoldering materials*

To extinguish a fire with a portable extinguisher, a person must:

- *Have immediate access to the extinguisher*
- *Know how to actuate the unit*
- *Know how to apply the extinguishing agent effectively*

Attempting to extinguish even a small fire carries some risk. Fires can increase in size and intensity in seconds, blocking the exit path of the firefighter and creating a hazardous atmosphere. In addition, portable fire extinguishers contain a limited amount of extinguishing agent and can be discharged in a matter of seconds. Therefore, **individuals should attempt to fight only very small or incipient stage fires.**



Evacuation continued...



Knowledge Key

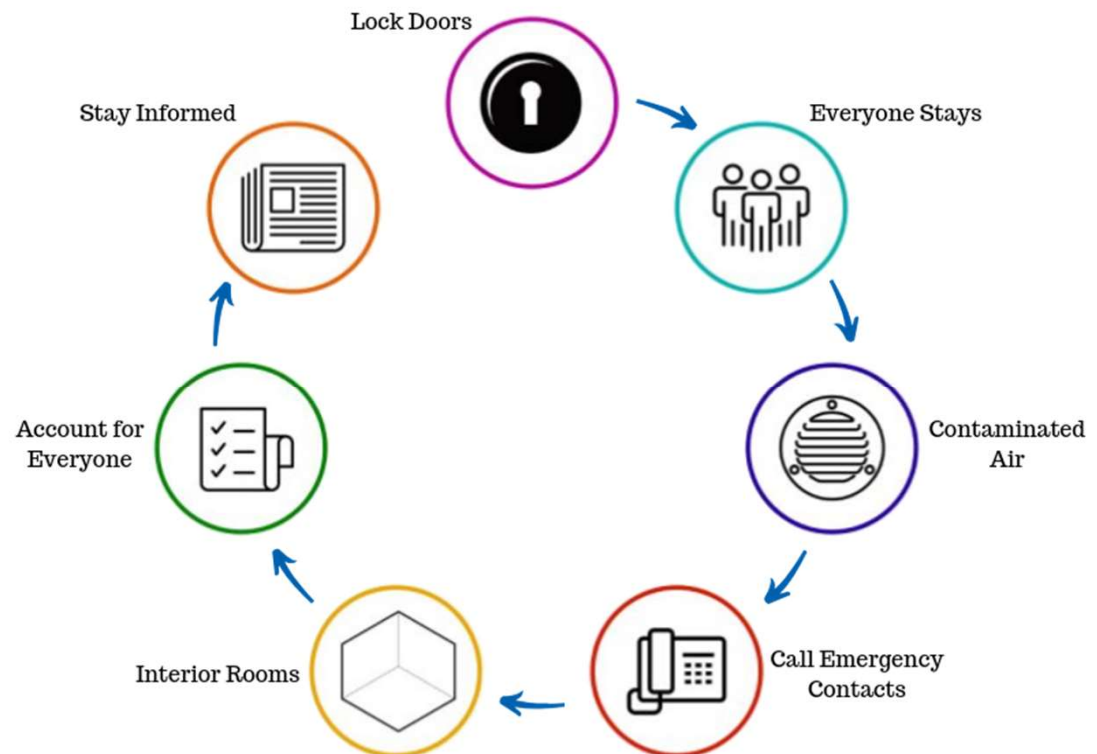
While many different types of emergencies require evacuation, the decision to evacuate is dependent on factors such as of the extent or location of the emergency or even the type of building in which it is occurring. Your employer should have a plan in place regarding the expected evacuation plans or fire fighting expectations and ensure that all employees are aware of both evacuation plans and what to do once the emergency has passed.

Shelter-in-Place



Depending on your circumstances and the type of emergency, the first important decision is whether you stay put or get away.

During a natural disaster, such as a **tornado**, or during a man-made event, such as when **chemical, biological, or radiological contaminants are released**, you should “shelter-in-place” and follow recommended safety precautions, such as sealing up vents, windows, and doors, seeking refuge in a windowless, interior room, keeping in communication, and monitoring the ongoing situation.



Shelter-in-Place continued...



If a **tornado** is approaching, there are specific emergency guidelines you should follow based on whether you are **inside**, **outside**, or in a **moving vehicle**.

If you're inside:

- Go to an interior room, hallway, storm cellar, basement, or the lowest level of the building.
- Get away from windows.
- Go to the center of the room.
- Avoid places with wide-span roofs such as auditoriums or cafeterias.
- Get under a piece of sturdy furniture.
- Use your arms to protect your head and neck.
- If in a mobile home, get out and find shelter elsewhere.

If you're outside:

- Get inside a building, if possible.
- If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area, or crouch near a strong building.
- Use your arms to protect your head and neck.

If you're in a moving vehicle:

- Never try to "out-drive" a tornado.
- Get out of the vehicle and get away from it. Take shelter in a nearby building or lay down in a ditch or low-lying area.
- Do not hide under a bridge or overpass.

Shelter-in-Place continued...



Knowledge Key

During a natural disaster, such as a tornado, or during a man-made event, such as when chemical, biological, or radiological contaminants are released, sheltering-in-place is recommended. During such events, you should follow recommended safety precautions, such as sealing up vents, windows, and doors, seeking refuge in a windowless, interior room, keeping in communication, and monitoring the ongoing situation.

Exit Routes



In order to ensure safe and timely evacuation in an emergency, exit routes must follow **strict criteria**.

Exit routes must be adequately signposted, exit to an outside area, be unlocked, be sufficiently large, as well as being enough for the number of people needing to exit during an emergency.

It is imperative that you know exit routes where you work. **Don't wait until disaster strikes to figure out where to go and what to do.**

EAP maps should clearly show the locations of exits, safety equipment like fire extinguishers, and assembly points.

Good emergency evacuation floor plans should designate **primary and secondary exits**, not have emergency exits in restrooms, exit **away** from rooms with hazardous materials, not exit into narrow passages, designate an **assembly area**, not require the use of elevators to reach an emergency exit, indicate which exits have **wheelchair access**, and indicate the employee's **current location**.



Exit Routes continued...



Knowledge Key

In order to ensure safe and timely evacuation in an emergency situation, exit routes must follow strict criteria. Exit routes must be adequately signposted, exit to an outside area, be unlocked, be sufficiently large, as well as being sufficient for the number of people needing to exit during an emergency.

Types of Extinguishers



There are **5 different classes of fire extinguishers**. Each class is used for different types of fires.

Each workplace building must have a full complement of the proper type of fire extinguisher for the fire hazards present.

Class A

Ordinary combustible material fires (such as wood, cloth, paper)

Class B

Flammables/liquids, gases, greases

Class C

Electrical/energized electrical equipment

Class D

Combustible metals (such as magnesium, titanium, zirconium, sodium, and potassium)

Class K

Combustible cooking media/vegetable or animal oils and fats



Types of Extinguishers

continued...



Most fire extinguishers operate using the following **PASS** technique:

PULL

Pull the pin. This will also break the tamper seal.

AIM

Aim low, pointing the extinguisher nozzle (or its horn or hose) at the base of the fire.

NOTE: Do not touch the plastic discharge horn on CO2 extinguishers, as it gets very cold and may damage skin.

SQUEEZE

Squeeze the handle to release the extinguishing agent.

SWEEP

Sweep from side to side at the base of the fire until it appears to be out. Watch the area. If the fire re-ignites, repeat steps 2-4.

If you have the slightest doubt about your ability to fight a fire or the fire is beyond incipient stage, that is just beginning, **evacuate immediately!**

Types of Extinguishers

continued...



Knowledge Key

Fires are classified into five different categories depending on what is burning. There are four types of fire extinguisher. The type of fire extinguisher used to fight a fire depends on the type of fire being fought. There is a standard set of steps to be followed when using a fire extinguisher to fight a fire. Fire extinguishers must be routinely maintained if they are to remain effective.

Summary



In the event of an emergency, aim to stay safe by:

- *Following the guidelines that are established in your employer's Emergency Action Plan and Fire Prevention Plan*
- *Following the general safety guidelines for natural or human-caused emergencies*



Practice Questions



1. Which of the following would be addressed by an employer completing an EAP template? **Select all that apply.**

- a. Procedures for alerting people about an emergency.
- b. Responsibilities to those affected.
- c. Evacuation routes.

2. A fire prevention plan describes all the major fire hazards at the workplace that initiate or contribute to the spread of a fire. Is this statement true or false?

- a. True
- b. False

3. Prior to fighting any fire with a portable fire extinguisher, what should you take into account? **Select all that apply.**

- a. Fire size
- b. Type of flame
- c. Atmosphere in the vicinity of the fire
- d. Fire fighter's evacuation path
- e. How many people are evacuating

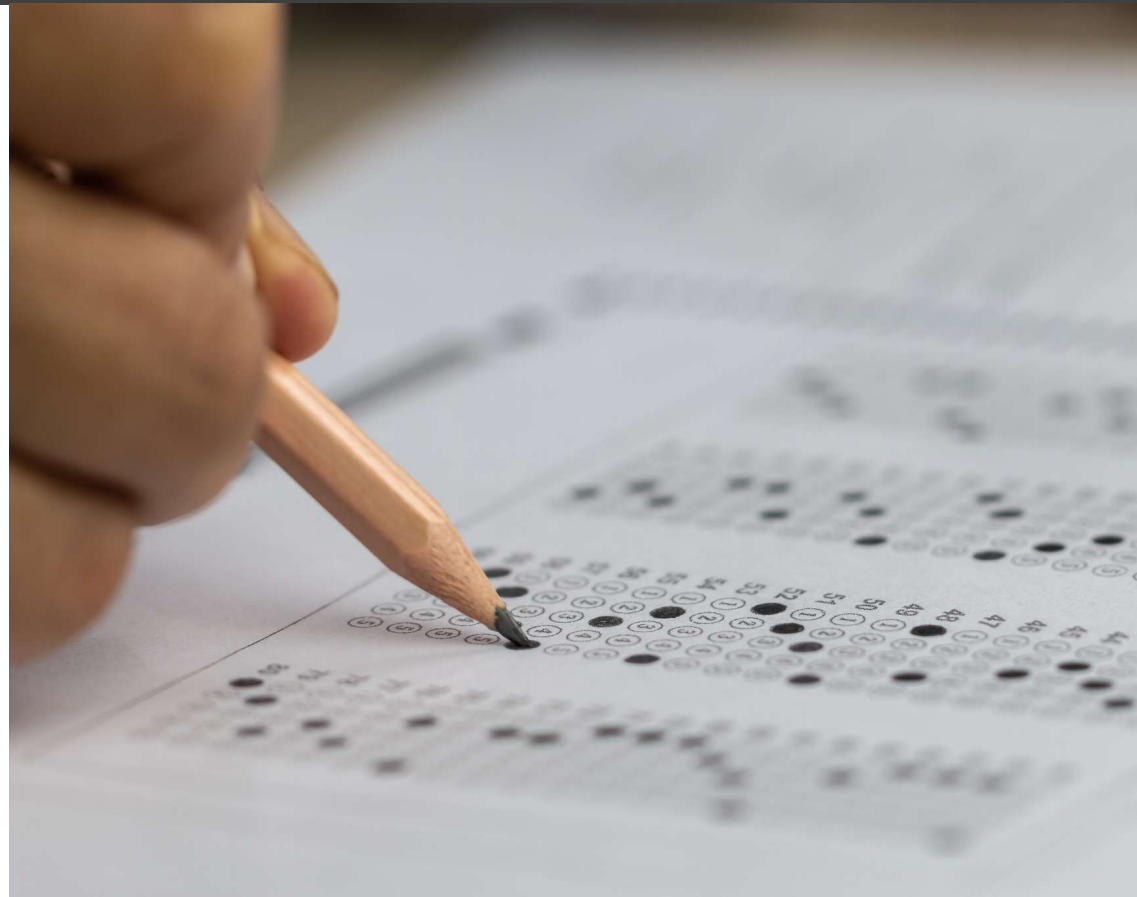
4. You are working on a large plant floor when you hear an explosion, which is followed by billowing smoke, debris and the fire alarm going off. Should you shelter in place?

- a. Yes
- b. No

Practice Questions Answer Key



1. A, B, C
2. A
3. A, B, C, D
4. B



Conclusion



Great Job!

You have completed the Exit Routes, Emergency Action Plans, Fire Prevention Plans, and Fire Protection Topic.

