

# Facilitator Guide Book

**Basics of Fire hazards & safety against fire hazards**

**Sector:- All Sector**

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## Acknowledgments

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The qualification is aligned with **NSQF** and this guide supports the **Skill India** initiative and is dedicated to trainers committed to excellence in skill development. SSDF welcomes feedback for continuous improvement.

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## About this Guide Book

The objective of this guide is to provide a comprehensive framework for interacting with trainees undergoing training in fire hazard identification and safety measures. The course aims to deliver both theoretical and practical knowledge to the trainees, equipping them with the understanding and skills necessary to address fire hazards and apply safety protocols in various environments. This guide serves as an aid to present knowledge on fire safety in a structured and systematic manner. It is not intended as a complete roadmap but rather a resource to support the transfer of critical information regarding fire hazards and safety procedures.

It is expected that the trainer is thoroughly familiar with the contents of this guide. The guide is designed to assist in covering key topics and provides additional insights to help trainers enhance their understanding of the following aspects:

**Micro Credential (MC)** : focused educational program designed to provide specialized skills and knowledge in a specific area. It offers flexible, industry-relevant training that can be completed in a short duration. Upon completion, learners receive a digital credential to showcase their acquired expertise.

**Performance Criteria (PC)** : Acquiring practical skills through hands-on training, including how to respond to fire emergencies and implement fire safety measures effectively.

The role of the trainer also includes assessing the trainees' understanding and ensuring that they apply their knowledge effectively through practical learning experiences. It is essential that trainees gain comprehensive knowledge of fire safety, regardless of the region or setting, to minimize fire-related risks.

This Facilitator Guide is aligned with the Qualification Pack (QP) under the National Skill Qualification Framework (NSQF) and includes the following key topics:

- **Understanding Fire and Its Behaviour**
- **Classification of Fires**
- **Fire Detection and Alarm Systems**
- **Fire Prevention Strategies**
- **Fire Suppression Systems**
- **Fire Safety Planning and Training**
- **Fire Safety Legal and Regulatory Requirements**
- **Fire Safety Technologies and Innovations**
- **Basic principles of fire investigation.**

The guide focuses on the fundamental competencies required to manage fire safety, including fire hazard recognition, prevention strategies, emergency protocols, and compliance with fire safety regulations. Trainers will be equipped to enhance the trainees' skills in identifying fire risks, responding appropriately to fire emergencies, and ensuring a safe environment in fire-prone areas.

By mastering the core principles of fire hazard management and safety, trainers will be empowered to effectively educate trainees on minimizing fire risks, adhering to safety regulations, and taking proactive measures to maintain a fire-safe working and living environment.

Symbols Used



## 1. Unit 1 Introduction

### 1.1. Key Learning Outcomes

At the end of this module, the trainees will be able to:

- Describe about all the (Manufacturing, Commercial, oil & gas, FMCG etc.) Sectors

### 1.2. Unit 1.1: Overview of the Basics of Fire hazards & fire safety in all sectors.

#### 1.2.1. Unit Objectives

At the end of this unit, students will be able to:

1. Describe about the all the (Manufacturing, Commercial, oil & gas, FMCG etc.) sector in India
2. Identify potential situations, substances, or events that could initiate or exacerbate fire hazards.
3. Assess the risks associated with identified fire hazards and their potential impact on safety.
4. Develop and implement effective strategies to manage and mitigate fire hazards.
5. Conduct regular fire drills and ensure the proper implementation of fire safety precautions and measures.
6. Monitor and execute necessary workplace modifications to minimize or eliminate fire hazards, ensuring ongoing compliance with fire safety regulations.

#### 1.2.2. Resources to be used

- Available objects such as Projection screen, whiteboard, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Attendance sheet
- Activities (role plays and games)

#### 1.2.3. Ask

- Can you identify common situations or substances in the workplace that may increase the risk of a fire?
- How would you assess the potential risks of a fire hazard in a given scenario?
- What are some effective strategies or actions to control and prevent fire hazards in the workplace?
- Why are fire drills important, and how should they be conducted to ensure maximum effectiveness?
- What changes could you implement in the workplace to reduce or eliminate fire hazards, and how would you ensure compliance with fire safety regulations?

#### 1.2.4. Do

- Introduce yourself to the participants.
- Give an overview of the program to the participants - duration of the program, objective etc.
- Give an overview of the fire hazard & safety precautions.

#### 1.2.5. Explain

- Explain common situations, substances, or events that can increase the risk of a fire.
- Describe how to assess the potential risks associated with identified fire hazards.
- Outline effective strategies and actions to control and prevent fire hazards in the workplace.
- Discuss the importance of conducting fire drills and ensuring their effectiveness.
- Explain how to implement changes in the workplace to reduce or eliminate fire hazards while ensuring compliance with fire safety regulations.

### 1.2.6. Tips

- Go slow with information flow with participants.
- Observe each participant's body language.
- Keep a positive and supportive approach towards the candidates

### 1.2.7. Activity: Team Spot

- Separate the class into 2 different teams.
- Assign each team a specific workplace environment (e.g., office, construction site, factory).
- Ask each team to identify potential fire hazards in their assigned environment, discussing various materials, situations, or actions that could increase fire risk.
- Each team will present their findings, and after the presentation, the other team will ask questions or suggest additional fire safety measures for improvement.
- Conclude by discussing the most effective fire prevention strategies for both environments.

### 1.2.8. Notes for Facilitation

- Revise the important points discussed in this unit.
- Clear the doubts of the students, if any. Encourage them to ask questions.
- Discuss the question with the class and answer their queries satisfactorily.
- Help participants identify how to apply the skills taught in the course to their work
- Praise participants and the group on improving their performance and developing new skills.
- Encourage participants to move through the initial difficulties of learning new skills, by focusing on steps in their progress and the importance of what they are learning to do.

### 1.2.9. Summary

The "Basics of Fire Hazards & Safety Against Fire Hazards" course offers specialized knowledge on fire safety procedures to reduce fire-related damage. It covers identifying potential fire hazards, evaluating associated risks, and implementing strategies to prevent and manage fire outbreaks. The course also emphasizes the importance of fire safety measures, conducting fire drills, and ensuring compliance with fire safety regulations. Trainees will learn how to assess and control fire risks, modify the workplace to reduce hazards, and maintain ongoing compliance through regular evaluations.

### 1.2.10. Exercise

**1. Which of the following sectors in India is most prone to fire hazards due to the nature of its operations?**

- A) Manufacturing
- B) FMCG (Fast-Moving Consumer Goods)
- C) Oil & Gas
- D) Education

**2. What is the primary action to take when identifying a potential fire hazard in the workplace?**

- A) Ignore the hazard and continue working
- B) Assess the risk and report it immediately to management
- C) Wait for the fire to occur and then take action
- D) Proceed with the task without further consideration of the risk

**3. Which of the following is an example of a strategy to prevent fire hazards in the workplace?**

- A) Ensure electrical equipment is regularly inspected for faults
- B) Allow open flames near flammable materials for ease of use
- C) Place combustible materials near heat sources for convenience
- D) Reduce the number of fire exits in a building to make the area more secure

**4. What is the primary objective of conducting regular fire drills in the workplace?**

- A) To test employees' response times in an emergency
- B) To ensure employees memorize fire safety instructions

- C) To prepare employees to react quickly and correctly in case of a fire
- D) To comply with legal requirements without further action

**5. When making workplace modifications to reduce fire hazards, what is the most important consideration?**

- A) Reducing the number of employees working in high-risk areas
- B) Ensuring compliance with local fire safety regulations
- C) Reducing the number of fire extinguishers in the building
- D) Allowing smoking in designated areas to avoid restricting employee freedom

## 2. Occupational Safety :

### 2.1. Key Learning Outcomes

At the end of this module, the trainees will be able to:

- Recognize any situations, substances, or events that may have the potential to start a fire or increase the likelihood of a fire occurring.
- Evaluate the potential risks associated with the identified hazardous elements.
- Establish the most effective approaches to manage and control the identified risks.
- Ensure precautions, measures against fire hazards & conduct fire drills.
- Execute changes/modifications to the workplace that will efficiently decrease or eliminate the fire hazard.
- Ensure continuous compliance with fire safety regulations through regular assessments.

### 2.2. Unit 1: Introduction to Fire Hazards and Safety

#### 2.2.1. Unit Objectives

At the end of this unit, students will be able to:

1. Describe the circumstances, materials, and incidents that have the potential to ignite a fire or increase the likelihood of a fire occurrence.
2. Identify common fire hazards in various sectors such as manufacturing, FMCG, and oil & gas.
3. Explain the importance of fire safety regulations and compliance in different industries.
4. Understand the basic principles of fire prevention and safety protocols.

#### 2.2.2. Resources to be used

- Available objects such as Projection screen, whiteboard, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Attendance sheet
- Activities (role plays and games)

#### 2.2.3. Ask

- Identify materials or conditions that can increase fire risk.
- Recognize fire hazards in manufacturing, FMCG, and oil & gas.
- Explain the importance of fire safety regulations.
- Describe basic fire prevention practices.

#### 2.2.4. Do

- Discuss common fire hazards in different industries (e.g., manufacturing, FMCG, oil & gas).
- Show real-life examples or case studies of fire incidents and their causes.
- Explain fire safety regulations and compliance requirements for each sector.
- Demonstrate basic fire prevention measures and safety protocols.

### 2.2.5. Explain

- Describe materials or conditions that can increase fire risk
- fire hazards in manufacturing, FMCG, and oil & gas.
- importance of fire safety regulations.
- fire prevention practices.

### 2.2.6. Tips

- Go slow with information flow with participants.
- Observe each participant's body language.
- Keep a positive and supportive approach towards the candidates

### 2.2.7. Activity: Team Spot

- Divide students into small groups.
- Provide industry-specific scenarios (e.g., manufacturing, FMCG, oil & gas).
- Ask each group to identify potential fire hazards in their scenario.
- Have groups suggest preventive measures for the identified hazards.
- Each group presents their findings to the class.

### 2.2.8. Notes for Facilitation

- Revise the important points discussed in this unit.
- Clear the doubts of the students, if any. Encourage them to ask questions.
- Discuss the question with the class and answer their queries satisfactorily.
- Help participants identify how to apply the skills taught in the course to their work
- Praise participants and the group on improving their performance and developing new skills.
- Encourage participants to move through the initial difficulties of learning new skills, by focusing on steps in their progress and the importance of what they are learning to do.

### 2.2.9. Summary

#### Fire Risks:

Fire risks arise from certain conditions and materials that are highly susceptible to ignition. These include flammable substances (e.g., chemicals, gases), faulty electrical equipment, and improper handling or storage of hazardous materials. When these factors combine, they increase the likelihood of a fire occurring.

#### Industry Hazards:

Different sectors face unique fire hazards due to the nature of their operations. In manufacturing, machines may overheat or malfunction, creating sparks or fires. In FMCG, the use of combustible packaging materials and chemicals can lead to fires if not handled correctly. The oil & gas industry faces risks like fuel leaks, equipment failures, or ignition sources near flammable liquids or gases, increasing fire potential.

#### Regulations:

Fire safety regulations are crucial in all industries to ensure workplaces adhere to safety standards. These regulations are designed to prevent fire incidents, enforce proper safety practices, and maintain compliance with legal requirements, helping to safeguard both workers and property from potential fire hazards.

#### Prevention:

Fire prevention involves taking proactive measures such as proper storage of flammable materials, conducting regular equipment inspections to ensure everything is in working order, performing fire drills to prepare staff for emergency situations, and using appropriate fire safety equipment (e.g., extinguishers, sprinklers) to quickly manage fires before they spread. These measures significantly reduce the chance of a fire breaking out and ensure a safer work environment.

### 2.2.10. Exercise

- **Which of the following is a common fire risk in the manufacturing industry?**
  - A) Flammable packaging
  - B) Overheating machinery
  - C) Poor ventilation
  - D) Inadequate lighting
- **What is the main purpose of fire safety regulations in the workplace?**
  - A) To reduce energy consumption
  - B) To ensure fire equipment is available
  - C) To prevent and minimize fire-related risks
  - D) To increase production efficiency
- **Which of the following materials is considered a fire hazard in the FMCG sector?**
  - A) Non-flammable packaging
  - B) Heavy machinery
  - C) Combustible packaging
  - D) Water-based products
- **What is the most important fire prevention measure in the oil & gas industry?**
  - A) Regular fire drills
  - B) Proper storage of flammable liquids
  - C) Conducting routine inspections of electrical wiring
  - D) Using automatic sprinklers
- **Which of the following is NOT a basic fire prevention practice?**
  - A) Storing flammable materials properly
  - B) Conducting fire drills regularly
  - C) Ignoring regular equipment maintenance
  - D) Using fire extinguishers in case of emergency

## 2.3. Unit 2: Identification of Fire Hazards and Flammable Materials

### 2.3.1. Unit Objectives

**At the end of this unit, students will be able to:**

- Identify and categorize flammable materials commonly found in workplaces.
- Recognize hazardous substances, such as flammable gases, vapours, and chemicals, that increase the risk of fire.
- Explain the need for controls and procedures to manage and prevent fire incidents related to flammable substances.
- Understand the importance of gas detection equipment in detecting leaks and preventing fire hazards.

### 2.3.2. Resources

- Whiteboard, erasable marker, board cleaner, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Participant Manual
- Projection screen and PowerPoint presentations.
- Activities (role plays)

### 2.3.3. Say

- Describe about some common flammable materials found in your workplace or industry
- Describe about the identification of hazardous substances that increase the risk of fire
- Explain the importance of having procedures to manage and control fire risks from flammable substances
- Describe how gas detection equipment helps in preventing fire hazards

### 2.3.4. Explain

- Explain common flammable materials in workplaces, such as chemicals and gases.
- Describe the risks of hazardous substances like flammable vapours.
- Discuss the need for controls and procedures to manage fire risks.
- Highlight the role of gas detection equipment in preventing fire hazards.
- Stress the importance of proper storage and handling of flammable materials.

### 2.3.5. Activity

- Provide students with a scenario that includes a workplace setting (e.g., a chemical storage room or a manufacturing floor).
- Ask students to identify all potential fire hazards and hazardous materials in the scenario.
- Have them categorize the materials as highly flammable, moderately flammable, or non-flammable.
- Instruct them to propose safety measures and controls to reduce the fire risk.
- Afterward, have students share their assessments and safety measures with the class for discussion.

### 2.3.6. Notes for Facilitation

- Summarize the important points and terms explained in the session.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer questions, as needed, providing concrete and brief answers.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answers all the questions.

### 2.3.7. Summary

- **Flammable Materials:**  
Students will be introduced to different types of flammable materials commonly found in workplaces, including solids, liquids, and gases. They will learn how to categorize these materials based on their combustion properties and understand the risks associated with each type. Examples include chemicals used in manufacturing, cleaning solvents in offices, and fuel sources in industries like oil & gas.
- **Hazardous Substances:**  
The unit will highlight hazardous substances that are more likely to ignite and cause fire incidents, such as flammable gases (e.g., propane, acetylene), volatile vapours, and certain chemicals that can easily catch fire. Students will recognize how these substances can be present in everyday work environments and the need for careful handling and storage to minimize fire risks.
- **Fire Risk Management:**  
Students will understand the critical need for implementing fire safety controls and procedures to reduce fire hazards. This includes safe storage practices, ensuring proper ventilation, maintaining equipment to prevent malfunctions, and using fire-resistant materials. The unit emphasizes how proactive risk management can prevent fire incidents and protect both employees and assets.
- **Gas Detection:**  
A key focus will be on the importance of gas detection systems in identifying flammable gases and vapours before they can cause an explosion or fire. Students will learn how these systems work, the types of detectors used, and the role of early detection in preventing fire hazards, especially in industries like oil & gas or chemical manufacturing where gas leaks are a significant risk.

### 2.3.8. Exercise

- **Which of the following is a common flammable material in a manufacturing setting?**  
A) Plastic containers  
B) Water  
C) Gasoline  
D) Wood

- **What type of substance is acetylene considered to be?**
  - A) Non-flammable gas
  - B) Flammable liquid
  - C) Flammable gas
  - D) Combustible solid
- **Why is it important to store chemicals properly in the workplace?**
  - A) To reduce workplace clutter
  - B) To prevent chemical reactions that can cause fires
  - C) To make it easier to access
  - D) To save space
- **Which of these is an example of a fire prevention control measure?**
  - A) Ignoring safety equipment maintenance
  - B) Properly storing flammable materials
  - C) Leaving chemicals unattended
  - D) Using open flames in storage areas
- **What is the primary function of gas detection equipment in the workplace?**
  - A) To measure temperature levels
  - B) To detect leaks of flammable gases and vapours
  - C) To monitor noise levels
  - D) To track air pressure

## 2.4. Unit 3: Fire Safety Measures and Risk Assessment

### 2.4.1. Unit Objectives

At the end of this unit, students will be able to:

- Conduct risk assessments based on the possibility of fire occurrence due to flammable materials or environmental factors.
- Explain the significance of proper fire safety protocols and risk mitigation strategies.
- Provide separate storage areas for hazardous materials, such as chemicals and gas cylinders, to minimize fire risks.
- Identify common fire hazards, including overloaded electrical systems, combustible storage areas, and faulty appliances.

### 2.4.2. Resources

- Whiteboard, erasable marker, board cleaner, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Participant Manual
- Projection screen and PowerPoint presentations.
- Activities (role plays)

### 2.4.3. Say

- Describe risk assessments
- Describe fire safety protocols
- Describe for separate storage
- Describe common fire hazards

### 2.4.4. Explain

- Describe how to conduct risk assessments based on fire risks from flammable materials or environmental factors.
- Describe the importance of fire safety protocols and risk mitigation strategies.
- Describe the need for separate storage of hazardous materials like chemicals and gas cylinders.
- Describe common fire hazards such as overloaded electrical systems and faulty appliances.

### 2.4.5. Activity

- Assign each student a role (e.g., safety officer, worker, supervisor, emergency responder).

- Present a fire hazard scenario, such as a chemical spill in a laboratory or a malfunctioning electrical system.
- Ask students to act out their roles, demonstrating the correct fire safety protocol and risk mitigation strategies for the scenario.
- After the role-play, have the class discuss what went well and what could be improved in terms of fire safety response.
- Summarize the key fire safety practices demonstrated during the activity.

#### 2.4.6. Notes for Facilitation

- Summarize the important points and terms explained in the session.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer questions, as needed, providing concrete and brief answers.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answers all the questions.

#### 2.4.7. Summary

This unit focuses on the identification and implementation of fire safety measures through proper risk assessment and hazard control techniques. By the end of this unit, students will gain critical knowledge in assessing and managing fire risks in different workplace settings.

##### 1. Conducting Risk Assessments

Students will learn to conduct thorough risk assessments by evaluating potential fire hazards caused by flammable materials, chemicals, and environmental factors like temperature, humidity, and ventilation. They will understand how to identify fire risks based on material properties, workplace layout, and operational conditions.

##### 2. Fire Safety Protocols and Risk Mitigation

The unit will emphasize the importance of implementing fire safety protocols, including proper fire prevention measures, emergency procedures, and safety equipment usage. Students will also learn risk mitigation strategies to prevent fire incidents, including regular inspections, employee training, and the installation of safety systems like alarms and sprinklers.

##### 3. Separate Storage for Hazardous Materials

The unit will cover the importance of providing dedicated storage areas for hazardous materials, such as chemicals, gas cylinders, and flammable substances. Students will understand the necessity of segregating these materials to reduce the risk of cross-contamination, leaks, and potential fire outbreaks.

##### 4. Identifying Common Fire Hazards

Students will be taught how to identify and address common fire hazards found in workplaces, such as overloaded electrical circuits, combustible storage areas, and faulty appliances. They will learn how to evaluate these risks and develop strategies to eliminate or reduce them, such as regular maintenance, proper wiring, and clear storage practices.

#### 2.4.8. Exercise

- Which of the following is a key element in conducting a fire risk assessment?**
  - Identifying only electrical hazards
  - Assessing only the fire extinguishers
  - Evaluating flammable materials and environmental factors
  - Ignoring environmental conditions
- Why is it important to have separate storage areas for hazardous materials?**
  - To save space
  - To minimize the risk of fire or chemical reactions
  - To make them easier to access
  - To prevent inventory loss
- Which of the following is a common fire hazard related to electrical systems?**
  - Overloaded circuits
  - Fire alarms

- C) Proper grounding
  - D) Proper insulation
4. **What is the primary purpose of fire safety protocols?**
    - A) To increase production speed
    - B) To reduce the risk of fire and ensure a safe response
    - C) To save money on insurance
    - D) To improve product quality
  5. **Which of these is a risk mitigation strategy for preventing fire hazards in the workplace?**
    - A) Ignoring maintenance of electrical appliances
    - B) Storing flammable materials near heat sources
    - C) Conducting regular fire drills and inspections
    - D) Using damaged equipment

## 2.5. Unit 4 : Fire Protection Equipment and Emergency Procedures

### 2.5.1. Unit Objectives

**At the end of this unit, students will be able to:**

- Ensure fire protection equipment is accessible, easily identifiable, and functional in the workplace.
- Train employees on how to use fire protection equipment, such as extinguishers and alarms.
- Develop and implement emergency and evacuation plans to prevent damage and ensure the safety of workers during a fire.
- Assess the role of regular maintenance services for fire protection equipment to ensure they remain up to code.

### 2.5.2. Resources

- Whiteboard, erasable marker, board cleaner, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Participant Manual
- Projection screen and PowerPoint presentations.
- Activities (role plays)

### 2.5.3. Say

- Describe about Identification of Fire Protection Equipment
- Describe about Employee Training
- Describe about Evacuation Plan
- Describe about Regular Maintenance
- Describe about Fire Drills and Preparedness

### 2.5.4. Explain

- How fire protection equipment is accessible and clearly identifiable in the workplace.
- How to Train employees properly so they can use fire protection equipment, such as extinguishers and alarms
- How to Develop and implement emergency evacuation plans to protect workers and minimize damage during a fire.
- The importance of regular maintenance services to ensure fire protection equipment remains up to code and functional.
- The significance of fire drills and preparedness to minimize fire-related risks and ensure safety.

### 2.5.5. Activity

- Divide the class into small groups and assign each group a specific fire protection equipment (e.g., fire extinguisher, fire alarm, emergency exit plan).
- Each group will research and prepare a short presentation on their assigned equipment, explaining its purpose, proper usage, and maintenance procedures.

- After presentations, conduct a fire drill simulation where students practice using fire extinguishers (if available), activating alarms, and following evacuation procedures based on the emergency plan.
- Discuss the outcomes of the drill and gather feedback on what worked well and areas for improvement.
- Conclude by emphasizing the importance of regular drills and equipment maintenance to ensure workplace safety during emergencies.

### 2.5.6. Notes for Facilitation

- Summarize the important points and terms explained in the session.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer questions, as needed, providing concrete and brief answers.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answers all the questions.

### 2.5.7. Summary

This unit focuses on the key elements of fire safety in the workplace, emphasizing the importance of accessible, functional fire protection equipment and well-prepared emergency procedures.

1. **Accessibility and Identification of Fire Equipment:**  
Fire protection equipment, such as extinguishers, alarms, and sprinklers, must be easily accessible, clearly identifiable, and well-maintained to ensure a swift response in case of fire emergencies.
2. **Employee Training:**  
Proper training on how to use fire protection equipment, including extinguishers and alarms, is essential. Employees should be trained to act efficiently and confidently during a fire emergency, reducing panic and damage.
3. **Emergency and Evacuation Plans:**  
Developing and implementing comprehensive emergency evacuation plans is critical. These plans help ensure worker safety during a fire and minimize damage by establishing clear procedures for evacuation and emergency responses.
4. **Regular Maintenance:**  
Regular maintenance and inspections of fire protection equipment are crucial to keep it functional and up to code. This ensures that all fire safety equipment will work properly when needed most, reducing the risk of malfunction during a fire.

By mastering these concepts, students will be able to ensure fire protection equipment is in place, train employees properly, and develop effective emergency response strategies, creating a safer work environment.

### 2.5.8. Exercise

- **Which of the following is a key requirement for fire protection equipment in the workplace?**
  - A) It should be expensive
  - B) It should be accessible and identifiable
  - C) It should be stored in a hidden location
  - D) It should only be available for the fire department
- **Why is employee training on fire protection equipment important?**
  - A) To improve product quality
  - B) To reduce panic and ensure quick response during emergencies
  - C) To save money on equipment
  - D) To make employees feel safer in the workplace
- **What is the purpose of an emergency evacuation plan?**
  - A) To guide employees in case of a fire

- B) To make the workplace look organized
- C) To reduce energy consumption
- D) To enhance product delivery
- **Which of the following should be done regularly to ensure fire protection equipment is functional?**
  - A) Conduct maintenance and inspections
  - B) Leave it untouched
  - C) Store it away in a remote location
  - D) Paint it a different color
- **What is a critical aspect of developing an effective evacuation plan?**
  - A) Including employee seating preferences
  - B) Establishing clear routes and procedures
  - C) Making it complicated to follow
  - D) Allowing employees to ignore it

## 2.6. Unit 5: Safe Handling, Storage, and Disposal of Hazardous Materials

### 2.6.1. Unit Objectives

- Explain the safe storage, handling, and disposal of flammable substances and hazardous waste.
- Describe how to store hazardous materials in a dry, well-ventilated area to reduce the risk of fire.
- Train workers on proper disposal methods of hazardous waste to ensure safety.
- Implement safe practices for managing waste materials and prevent fire outbreaks related to improper handling.

### 2.6.2. Resources

- Whiteboard, erasable marker, board cleaner, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Participant Manual
- Projection screen and PowerPoint presentations.
- Activities (role plays)

### 2.6.3. Say

- Importance of handling flammable material.
- Importance of stored hazardous materials.
- Train workers on proper disposal methods
- Safe practices for managing waste materials
- Regular safety checks

### 2.6.4. Explain

- Explain the importance of safely storing and handling flammable substances and hazardous waste to minimize fire risks.
- Describe how hazardous materials should be stored in dry, well-ventilated areas to reduce the chance of fire.
- Train workers on proper disposal methods for hazardous waste to ensure safety and prevent environmental harm.
- Discuss safe practices for managing waste materials, focusing on preventing fire outbreaks due to improper handling.
- Highlight the need for regular safety checks to ensure hazardous materials are stored and disposed of correctly.

### 2.6.5. Role play

Roles:

Warehouse Worker (**W**)

Safety Officer (**SO**)

**Supervisor (S)**

A chemical spill occurs in the warehouse due to improper storage of flammable materials. The warehouse worker needs to follow proper procedures to handle the situation.

Scene: The warehouse worker notices a spill near flammable materials.

**W:** (Noticing the spill) There's a chemical spill! I need to call the Safety Officer.

(W calls SO)

**W:** There's a spill near the flammable storage area. What should I do?

**SO:** Stay calm. Make sure the area is clear. Open the ventilation, and I'll be there shortly.

(SO arrives)

**SO:** Good job clearing the area. Let's assess it. We need to contain the spill using absorbent materials.

**S:** (Enters) Is everyone safe? What's the status?

**W:** Yes, everyone's clear. The Safety Officer is here to help.

**SO:** We'll contain the spill with absorbents, check the SDS for the chemical, and clean it up properly.

**S:** Let's inspect the storage area and make sure chemicals are stored in a safe, ventilated space.

**W:** I'll handle the clean-up and dispose of the waste correctly.

**SO:** Great. Once cleaned, we'll file a report and review storage practices to prevent future incidents.

### 2.6.6. Notes for Facilitation

- Summarize the important points and terms explained in the session.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer questions, as needed, providing concrete and brief answers.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answers all the questions.

### 2.6.7. Summary

This chapter emphasizes the importance of safely handling, storing, and disposing of hazardous materials to reduce fire risks and ensure workplace safety.

#### Safe Storage and Handling

Hazardous materials should be stored in dry, well-ventilated areas to prevent fires. Proper containers and protective equipment must be used to handle chemicals and flammable substances safely. Workers need training on how to manage these materials properly.

#### Waste Disposal

Hazardous waste must be disposed of according to safety regulations. Workers should be trained to segregate and dispose of chemicals safely to avoid contamination and fire hazards. Special disposal services are necessary for flammable substances.

#### Fire Prevention

Proper storage, ventilation, and segregation of hazardous materials help prevent fires. Materials should be kept away from ignition sources, and fire suppression systems should be in place.

#### Training and Safe Practices

Regular worker training on handling, storing, and disposing of hazardous materials is essential. Safe practices and routine inspections ensure safety and minimize the risk of accidents and fire hazards.

### 2.6.8. Exercise

#### 1. Which of the following is the safest method to store flammable materials?

- In an open, high-temperature area
- In a dry, well-ventilated area away from ignition sources
- In a poorly ventilated storage room
- In a regular office drawer

#### 2. What personal protective equipment (PPE) should be worn when handling hazardous chemicals?

- No PPE needed

- b) Gloves, goggles, and protective clothing
- c) Only gloves
- d) Only goggles

**3. What is the primary goal of proper hazardous waste disposal?**

- a) To keep the waste in the warehouse for longer periods
- b) To avoid environmental contamination and fire risks
- c) To reduce storage costs
- d) To allow for reuse of the materials

**4. Why is ventilation important when storing hazardous materials?**

- a) To prevent fumes from building up
- b) To increase the temperature of the storage area
- c) To allow workers to store more materials
- d) To create an open space for easy access

**5. Which of the following is essential for preventing fire outbreaks in areas where hazardous materials are stored?**

- a) Storing materials in an open area with no fire extinguishers
- b) Keeping materials away from ignition sources and using fire suppression systems
- c) Storing materials next to electrical appliances
- d) Ignoring proper storage practices.

## 2.7. Unit 6: Fire Prevention Strategies and Workplace Safety Culture

### 2.7.1. Unit Objectives

**At the end of this unit, students will be able to:**

- Identify and implement strategies to reduce fire risks in common workplace environments (kitchens, offices, industrial areas).
- Monitor electrical systems, cooking appliances, and heating systems to ensure they do not pose a fire hazard.
- Develop a workplace safety culture focused on fire prevention, employee training, and ongoing hazard identification.
- Ensure proper checks and audits are conducted to prevent workplace fires and maintain safety standards.

### 2.7.2. Resources

- Whiteboard, erasable marker, board cleaner, projection screen, laptop, speaker, notebook, pen, participant handbook, etc
- Flip chart
- Participant Manual
- Projection screen and PowerPoint presentations.
- Activities (role plays)

### 2.7.3. Say

- Identify common fire hazards
- Monitor systems
- Develop a fire safety culture
- regular checks and audits

### 2.7.4. Explain

- Identify common fire hazards in different work environments like kitchens, offices, and industrial areas.
- Monitor systems like electrical, cooking, and heating to ensure they don't pose fire risks.
- Develop a fire safety culture where prevention is prioritized, and employees are regularly trained.
- Conduct regular checks and audits to ensure fire safety protocols are followed and hazards are addressed.

### 2.7.5. Activity

- Divide the class into three groups. Each group will focus on a specific workplace environment: kitchen, office, or industrial area.
- Each group will identify potential fire hazards specific to their assigned environment, such as electrical issues, cooking equipment, heating systems, or flammable materials.
- Groups will develop fire prevention strategies, including monitoring electrical systems, safe appliance usage, and proper storage of materials to reduce fire risks.
- Each group will create a plan to build a fire safety culture, incorporating employee training, regular safety drills, and ongoing hazard identification.
- Groups will present their fire prevention strategies and safety culture plans to the class, followed by a discussion and feedback session.

### 2.7.6. Notes for Facilitation

- Summarize the important points and terms explained in the session.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer questions, as needed, providing concrete and brief answers.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answers all the questions.

### 2.7.7. Summary

This unit focuses on reducing fire risks in the workplace and promoting a safety culture to prevent fire hazards.

The first objective is to identify and implement strategies for fire risk reduction in various work environments such as kitchens, offices, and industrial areas. This includes understanding specific hazards related to each setting and creating targeted prevention measures.

Monitoring key systems, such as electrical, cooking, and heating equipment, is essential to ensure they do not pose fire risks. Regular inspections and maintenance are necessary to avoid electrical faults, overheating appliances, or other potential fire causes.

Building a strong workplace safety culture is critical. This includes training employees on fire safety, hazard recognition, and emergency protocols. Employees should be encouraged to actively engage in fire prevention efforts.

Finally, conducting regular checks and audits is vital to ensure safety standards are met and maintained. These assessments help identify potential hazards, confirm that safety procedures are followed, and ensure that the workplace is prepared for emergencies.

### 2.7.8. Exercise

- 1. Which of the following is an important step in reducing fire risks in an office environment?**
  - a) Store flammable materials near electrical outlets
  - b) Regularly inspect electrical systems for faults
  - c) Use multiple extension cords in the same socket
  - d) Leave appliances running unattended
- 2. What should be done to prevent fire hazards in a kitchen setting?**
  - a) Use high-heat appliances without checking for faults
  - b) Ensure that cooking appliances are regularly cleaned and maintained
  - c) Store flammable materials near cooking equipment
  - d) Avoid installing smoke detectors in the kitchen
- 3. Which of these is a key element of building a fire safety culture in the workplace?**
  - a) Ignoring regular safety drills
  - b) Regularly training employees on fire prevention practices
  - c) Limiting communication about fire safety risks
  - d) Allowing employees to store flammable materials wherever convenient
- 4. What is the best practice for managing electrical systems to prevent fire risks?**
  - a) Regularly check for frayed wires and overloading circuits
  - b) Leave electrical issues unaddressed until they cause a problem
  - c) Use outdated or faulty electrical appliances
  - d) Ignore periodic inspections of electrical equipment

5. **What is a critical part of maintaining fire safety standards in the workplace?**
- a) Perform regular fire drills and safety checks
  - b) Store fire extinguishers in inaccessible areas
  - c) Remove fire alarms from areas with high foot traffic
  - d) Allow employees to bypass safety protocols when needed