

CAL / OSHA: FIRE PREVENTION & RESPONSE FACT SHEET

LENGTH: 11 MINUTES

PROGRAM SYNOPSIS:

Fire safety and response is an important part of any organization's Injury and Illness Prevention Plan. Correcting fire hazards and knowing how to respond to a fire can prevent injuries and save lives. This program provides an overview of best fire safety practices recommended by California OSHA and explains how preventing and responding to fires appropriately can reduce the risk of property damage, injuries and fatalities.

Topics include the five classes of fires, good housekeeping, storage of hazardous and flammable materials, controlling electrical hazards, hot work precautions, responding to a fire and how to evacuate the premises safely.

PROGRAM OBJECTIVES:

After watching the program, the participant will be able to explain the following:

- What the different classes of fire are and how each can be extinguished;
- How to safely store hazardous and flammable materials;
- How to control electrical hazards to prevent fires;
- How and when to use a fire extinguisher to put out a fire;
- How to safely evacuate the premises in order to escape a fire.

INSTRUCTIONAL CONTENT:

BACKGROUND

- Overheated equipment, cluttered work areas, improperly stored materials and overloaded circuits—all are hazards that can increase the potential for a workplace fire, which can cause significant property damage and result in serious injuries or even deaths.
- Employers must implement controls and procedures for preventing fires, as well as a plan that outlines employee responsibilities in the event of a fire.

HOW A FIRE STARTS & BURNS

- Knowing how to prevent and respond to a fire starts with an understanding of how a fire starts and burns. A fire needs three elements to burn: fuel, oxygen and a heat source.
- The fire must have all three elements to continue burning. If any one element is removed, the fire will be extinguished.
- Common ignition sources include overheated equipment, faulty electrical components, chemical reactions and hot surfaces.
- Once ignited, a fire will continue to grow until its heat, fuel or oxygen are removed. This is commonly achieved through the use of a fire extinguisher.

CLASSES OF FIRE

- Fires are divided into different classes according to the types of materials that fuel them. Be aware that the proper extinguishing agent must be used for each class.
- Class A fires are fueled by solid combustibles such as trash, paper and wood. These types of fires can be extinguished with water, which reduces the temperature of the burning material, thus removing the heat source.
- Class A fires may also be extinguished using a class "ABC" fire extinguisher that uses a chemical powder to remove all the oxygen from the fire.
- Class B fires involve flammable liquids and some gases, including gasoline, propane and oil.
- Class C fires ignite from the heat generated by the flow of electrical current.
- There are specialty extinguishers designed to extinguish class B and class C fires; however, the common ABC type extinguisher will also extinguish these classes of fire.
- Class K fires involve vegetable oils, animal oils or fats in cooking appliances. They are extinguished with potassium acetate discharged in a fine mist that displaces its oxygen while preventing the spread of grease and helping to cool the appliance after the fire is out.

- You should learn which types of fire extinguishers are used at your facility and which classes of fire they are designed to put out.

GOOD HOUSEKEEPING

- To prevent fires, you must follow your organization's safe work practices that keep fuels and ignition sources separated. No two workplaces are the same. Each have their own hazards and potential risks and causes of fires.
- Good housekeeping must be a top priority. Keep your work area neat and organized. Organize tools and supplies in a manner that will not expose them to an ignition source.
- Only keep the amount of work materials you need for your shift on hand since they can become fuels for fires.
- Keep aisles and travel paths clear of obstacles and debris. Also, make sure doors and exits are clearly marked and not locked or blocked.

STORAGE OF HAZARDOUS & FLAMMABLE MATERIALS

- Storing hazardous and flammable materials properly is another important aspect of fire prevention.
- Refer to the label and Safety Data Sheet for safe handling and storage procedures of all flammable substances.
- Always keep these materials a safe distance from sources of ignition. They must be stored in approved containers, which should be retained in fireproof cabinets when not in use.
- Flammable liquids such as gasoline should be stored in containers equipped with flame arrestors. Flame arrestors prevent sparks and flames from entering the mouth of the can and igniting vapors and liquids inside.
- Areas where flammable and ignitable substances are used or stored must be properly ventilated.
- Some materials are unstable and may combust spontaneously or react violently when exposed to air, water or other substances. Extra caution must be taken when working with these types of materials.

CONTROLLING ELECTRICAL HAZARDS

- Another common fire hazard in our workplaces is electricity. In fact, there are more electrical fires at work than any other type.
- Overloaded circuits are the cause of many fires. Don't plug too many cords into one outlet because it can be easily overloaded and result in a fire.
- Check cords, outlets and plugs regularly to make sure they are in good condition. Equipment found to have a damaged cord or plug must be removed from service so it may be repaired or replaced.
- Extension cords should be rated to carry the current required for any equipment you plug into them.
- If an extension cord is designed to have a ground pin, it must be present and in good condition.
- Extension cords should never be run under mats, rugs or carpet. The cord's insulation can be damaged by pedestrian traffic.
- Damaged insulation may expose live wires and allow heat from the flow of electric current to ignite a fire.
- Equipment and machines must be kept clean to prevent fires. Be on the lookout for the accumulation of dirt, dust, oil and other byproducts on equipment that could cause it to overheat and start a fire.
- Static electricity can be created and spark a fire when transferring liquids from one container to another. To prevent sparks from igniting a fire during these operations, always use proper bonding and grounding procedures.

HOT WORK PRECAUTIONS

- Fire prevention precautions are also required when welding, cutting and other hot work is being performed.
- Make sure that all conditions listed on any required hot work permit are met before beginning the work.
- Before performing hot work, remove all flammable materials within 35 feet or cover them with fireproof blankets.
- Have a trained co-worker stand by as a fire watch during these operations. The fire watch should be on the lookout for any signs of fire and continue to do so for at least 30 minutes after the work has been completed.

RESPONDING TO A FIRE

- Even if all fire prevention procedures are followed, the possibility of a workplace fire always exists. It's important that you know how to respond to such emergencies.
- If a fire is small and in its beginning stage, known as an incipient stage fire, it may be possible to extinguish it with a fire extinguisher; however, never attempt to use a fire extinguisher unless you are trained and authorized by your organization; you have the appropriate extinguisher for the class of fire; and, you can put the fire out without risking your life.
- If you decide to use an extinguisher, first make sure someone has sounded the fire alarm and that you have a safe path to escape the fire.
- After sounding the alarm, remove the extinguisher from its mount.

- Approach the fire and use the PASS method to extinguish the fire:

Step 1: Pull the pin.

Step 2: Aim the nozzle at the base of the fire.

Step 3: Squeeze the trigger to discharge the extinguishing agent.

Step 4: Sweep the nozzle from side to side.

- To ensure the fire has been completely extinguished, you should continue discharging the extinguisher at the base of the fire until the extinguisher is empty.
- Maintain a fire watch over the area until the fire department arrives and make sure the fire has been fully extinguished.

SAFE EVACUATION OF THE PREMISES

- Your first choice in the event of a fire should be to evacuate rather than attempt to fight the fire. Many organizations do not allow employees to use fire extinguishers or they have a specially trained fire response team. If you are not authorized to use an extinguisher or feel it is unsafe to do so you should evacuate the premises immediately.
- If you see a fire or smoke, activate the nearest fire alarm and warn co-workers as you evacuate.
- If you hear a fire or smoke alarm, evacuate the premises immediately. Stay calm and walk out in an orderly manner.
- Check doors for heat with the back of your hand before opening. If a door feels hot, there is likely fire on the other side and you should find another escape route.
- If there is an abundance of smoke, get close to the floor to avoid inhaling the smoke. If possible, cover your mouth and nose with a damp cloth and take short breaths.
- Once outside, go to the designated place or rally point for employees to meet during evacuations.
- Make sure you are accounted for by management or emergency personnel and do not leave the area until given permission to do so.

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ANSWERS TO THE REVIEW QUIZ

1. d

2. c

3. b

4. a

5. a

6. b

7. c

8. e

9. a

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REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. Which of the following is NOT required for a fire to start and continue to burn?
 - a. An ignition source
 - b. Fuel
 - c. Oxygen
 - d. Carbon dioxide

2. Which class of fire is ignited by heat generated by the flow of an electric current?
 - a. Class A
 - b. Class B
 - c. Class C

3. Class K fires are extinguished with _____ discharged in a fine mist.
 - a. Sodium bicarbonate
 - b. Potassium acetate
 - c. Monoammonium phosphate

4. You should only keep the amount of work materials needed for your immediate task on hand.
 - a. True
 - b. False

5. Flammable substances must be stored in approved containers.
 - a. True
 - b. False

6. Extension cords should only be run under mats, rugs or carpet when they are going to be used for a short time and then removed.
 - a. True
 - b. False

7. During hot work operations, all flammable materials within _____ feet should be removed from the area or covered with a fireproof blanket.
 - a. 10
 - b. 15
 - c. 35

8. Which of the following conditions must be met before using a fire extinguisher to put out a fire?
 - a. The fire is in its beginning stages
 - b. You are trained and authorized to use a fire extinguisher
 - c. You have the appropriate extinguisher for the class of fire
 - d. You can put out the fire without risking your life
 - e. All of the above

9. Your first choice in the event of a fire should be to evacuate rather than attempt to fight the fire.
 - a. True
 - b. False