

# FIRE SAFETY



This education program provides a guideline for fire safety in the workplace. It is intended to give contractors and workers practical information relating to fire prevention and safety, in the workplace.

This education program contains general information. For specific regulatory requirements, please consult the appropriate Workplace Safety Health Act & Regulations adopted under the Workplace Safety and Health Act and the Local Fire Prevention Authorities.



## INTRODUCTION:

There is no second chance when it comes to fire. Work-related fires have taken the lives of hundreds of people and injured countless others. But fires are tragedies that don't have to happen. In this program, you'll learn:

- How fires start
- How fires are classified
- How to prevent fires
- How to identify the proper fire extinguishers
- How to use a portable fire extinguisher
- What are Fire Safety Procedures
- Fire extinguisher checklist



## HOW FIRES START

Fire is a chemical reaction involving rapid oxidation or burning of a fuel. It needs four elements to occur:

- Fuel-Fuel can be any combustible material-solid, liquid or gas.
- Oxygen- The air we breathe is about 21 percent oxygen. Fire only needs 16 percent to ignite.
- Heat- Heat is the energy needed for the fuel to generate sufficient vapors for ignition to occur.

- Chemical Reaction- When fuel, oxygen and heat come together in the right amounts and under the right conditions, a chemical chain reaction happens and a fire occurs.

**Take away any one of these factors, and the fire cannot exist.**

## **HOW FIRES ARE CLASSIFIED**

**Class A-** Ordinary combustibles such as wood, paper, cloth, rubber and some plastics.



**Class B-** Flammable or combustible gases and liquids such as gasoline, kerosene, paint, paint thinners or propane.



**Class C-** Energized electrical equipment such as appliances, panel boxes, switches and power tools.



**Class D-** Certain combustible metals such as magnesium, titanium, potassium or sodium. These metals burn at high temperatures and give off sufficient oxygen to support combustion. They may react violently with water or other chemicals, and must be handled with care.



## **HOW TO PREVENT FIRES**

### **Class-A Fires**

#### **(Ordinary combustibles):**

- Keep storage and working areas free of trash.
- Place oily rags and similar debris in covered metal containers away from any flame producing source.
- Empty all trash containers daily.

### **Class-B Fires**

#### **(Flammable liquids or gases):**

- Flammable liquids should only be used in well ventilated areas.
- Keep flammable liquids stored in tightly sealed, self closing and spill proof containers.
- Store flammable liquids away from spark producing sources.
- Don't refuel gasoline-powered equipment while it's hot.
- Standards and codes should be referred to concerning storage and amounts of flammable liquids at the work site.

### **Class-C (Electrical equipment):**

- Check electrical equipment for old or worn wiring and insulation and damaged fittings.
- Electrical motors should be clean and in good working order to prevent over heating.
- Never replace a fuse with a higher rated fuse rated for the circuit.
- Don't overload wall outlets, two outlets should have no more than two plugs.
- Investigate any appliance or electrical equipment that smells strange, unusual odors can be first signs of fire.

## HOW TO IDENTIFY FIRE EXTINGUISHERS

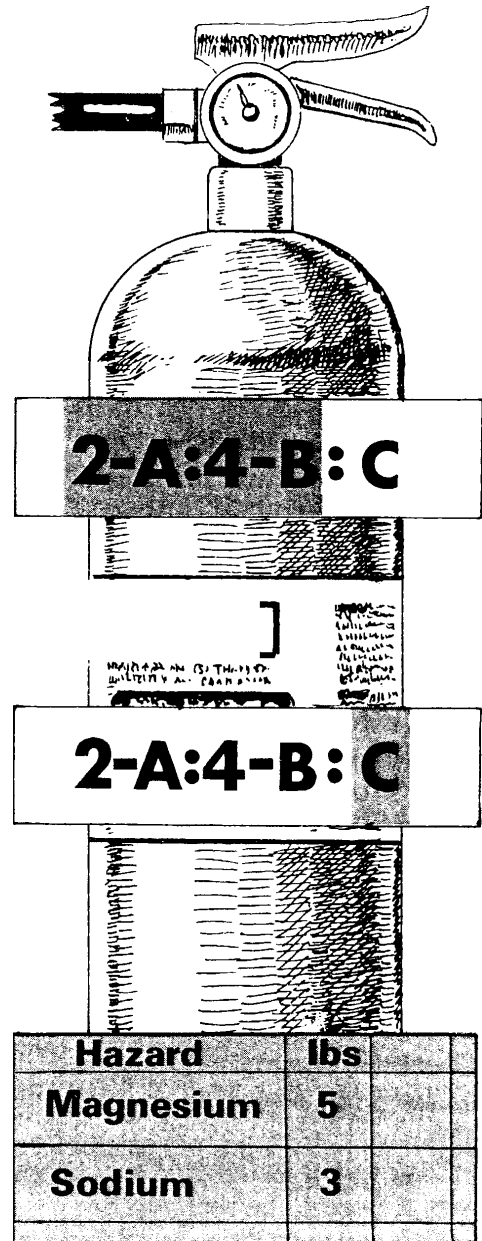
Each fire extinguisher displays a rating on the faceplate showing the class of fire it is designed to put out. Extinguishers are marked with multiple ratings such as **AB**, **BC**, or **ABC**. These extinguishers are capable of putting out more than one type of fire.



- **CLASS-A EXTINGUISHERS:** are effective on ordinary combustibles. Extinguishers capable of extinguishing Class A fires include pressurized water, foam, or multi-purpose dry chemicals agents. They carry a numerical rating that indicates how large a fire an experienced person can safely put out with that extinguisher.
  
- **CLASS-B EXTINGUISHERS:** are to be used on flammable liquids or gases. Their agents include foam, carbon dioxide, ordinary dry chemical, multi-purpose dry-chemical, halon\* or halon replacements. Similar to Class-A extinguishers numerical ratings indicate how large a fire an experienced person can put out.
  
- **CLASS-C EXTINGUISHERS:** are used specifically on electrical fires. Class-C extinguishers may contain carbon-dioxide, ordinary dry-chemical, multi-purpose dry-chemical, halon\* or halon replacement agents. Never use water extinguishers or any agents capable of conducting electricity on Class-C fires.  
  
Class-C extinguishers carry a letter rating only to indicate that the agent will not conduct electricity.
  
- **CLASS-D EXTINGUISHERS:** are only used on combustible metals. Their agents are specially designed for the materials involved. **Class-D fires react violently to water and other types of chemicals.**

## HOW TO IDENTIFY THE PROPER FIRE EXTINGUISHER

- All ratings are shown on the extinguisher faceplate.
- Some extinguishers are marked with multiple ratings such as AB, BC and ABC. These extinguishers are capable of putting out more than one class of fire.
- Class A and B extinguishers carry a numerical rating that indicates how large a fire an experienced person can safely put out with that extinguisher.
- Class C extinguishers have only a letter rating to indicate that the extinguishing agent will not conduct electrical current. Class C extinguishers must also carry a Class A or B rating.
- Class D extinguishers carry only a letter rating indicating their effectiveness on certain amounts of specific metals.



## FIRE SAFETY PROCEDURES:

If a fire starts, follow procedures outlined by your company. You may be able to put out a small fire before it spreads with a fire extinguisher. Only use an extinguisher when it is safe to do so, if by any means you are no longer able to safely fight the fire **LEAVE THE AREA IMMEDIATELY.**

Proper steps should be taken to notify fellow workers and the Fire Department.

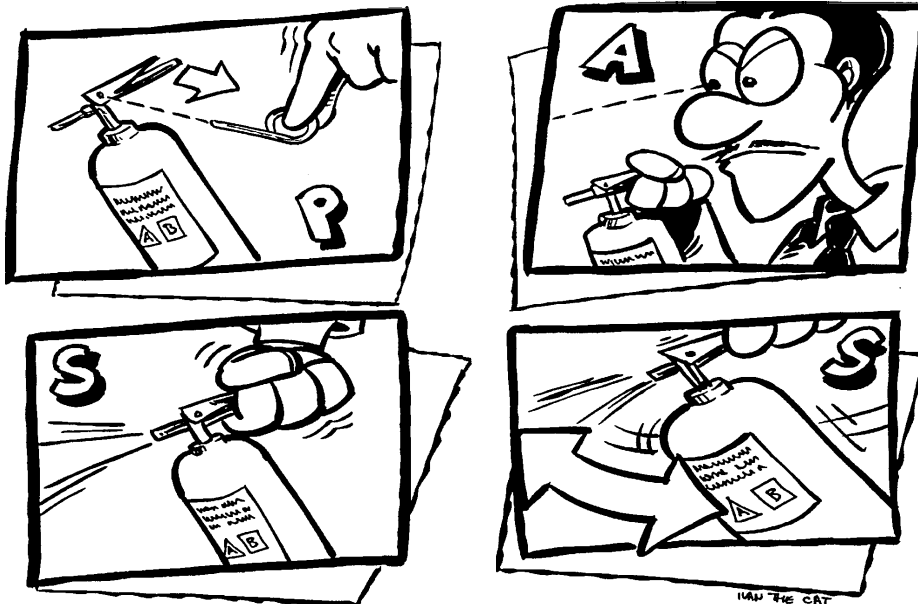
## REMEMBER:

- Should your path of escape be threatened
  - Should the extinguisher run out of agent
  - Should the extinguisher prove to be ineffective
  - Should you no longer be able to safely fight the fire
- **CLEAR THE AREA IMMEDIATELY!!!!**

## FIRE EXTINGUISHERS:

To operate a fire extinguisher, use the **PASS** method:

- **P**ull the pin.
- **A**im the nozzle at the base of the fire.
- **S**queeze the trigger.
- **S**weep the nozzle back and forth across the base of the flames, covering the area of the fire with the contents of the extinguisher.



## **FIRE EXTINGUISHER CHECKLIST**

Fire extinguishers are your first line of defence in most cases. Your life depends on the extinguisher and your ability to use it within seconds.

A fire extinguisher allows you to respond immediately to a fire. Going over a checklist can ensure that you are prepared for such a circumstance.

- Is the extinguisher easy to find and accessible in your workplace.
- Check for the type of Class rating for the extinguisher, is it safe to use on fires likely to occur in your workplace.
- Check the seal has the extinguisher been tampered with or used before.
- Look at the gauge, feel the weight, is it charged and ready for use.
- Report any missing, empty or damaged fire extinguishers to the person in charge.



# FIRE SAFETY

## REVIEW QUESTIONS

### True / False

T / F 1) Fire requires 3 elements for ignition fuel, oxygen and heat, without any one of these a fire can not occur.

T / F 2) Class A fires consist of wood, paper, cloth and some plastics.

T / F 3) Class B fires include energized electrical equipment.

T / F 4) Class C fires are fuelled by flammable or combustible liquids.

T / F 5) Fires involving electrical equipment can be put out with water sometimes.

T / F 6) Good housekeeping is the first step in fire prevention.

T / F 7) ABC fire extinguishers can only put out 1 type of fire.

T / F 8) When using an extinguisher the **PASS** method should be used.

T / F 9) A fire extinguisher checklist is a good idea, but not really necessary.

T / F 10) Fire Safety Procedures should be developed at every workplace.

