

FIRE PREVENTION AWARENESS AND BASIC FIRE FIGHTING BY USE OF EXTINGUISHER

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INTRODUCTION

One of the most important responsibilities of everyone is the detection and prevention of fires. This information will help everyone to equip them with the knowledge and skills to detect and extinguish a fire by safe use of fire extinguishers only when it is safe to do so.

OBJECTIVES

Knowledge and skills to detect and extinguish a fire by safe use of fire extinguishers will help in attaining the working knowledge of the followings:

- A. The "Fire Triangle"
- B. Types of fires
- C. Types of fire extinguishers
- D. Fire extinguisher features
- E. Fire extinguisher operation
- F. Fire extinguisher Maintenance

A. The "Fire Triangle"

Fire is a "Triangle." If one of the three required elements is removed, there is no longer a fire.

The three elements of a fire are:

- i. Fuel
- ii. Oxygen
- iii. Heat



i. **FUEL**

Fires are classified by the type of fuel they burn. Fuel is everywhere but it requires oxygen and heat to burn.

- Anything that will burn
- Paper, wood, cardboard, plastic, etc.
- Fabric
- Electrical equipment/wires
- Flammable liquids/Cleaning material
- Gases and fumes

ii. **OXYGEN**

Oxygen is everywhere and cannot be easily controlled. Most fires are extinguished by removing the oxygen. This can be accomplished using something simple, such as:

- Pouring baking soda over a small stove fire
- Using an appropriate fire extinguisher (best approach)

iii. **HEAT**

Heat is the most readily controlled part of the fire triangle. But heat, to include a spark or a chemical reaction, is how all fires start. Heat sources include:

- Smoking Material
- Open flames
- Heat producing equipment (coffee maker)
- Faulty/overloaded electrical equipment or wiring
- Power tools
- Friction
- Sparks

B. TYPES OF FIRES

Which type of extinguisher should I use? First recognize that there are four different kinds of fires, and fires are classified by the type of fuel they burn. Depending on the type of fuel that is burning, this will determine what fire extinguisher will be used.

- Class A fires- Are ordinary combustible materials like burning paper, wood, rags, plastic etc.
- Class B fires- Involve flammable or combustible liquids such as gasoline, oil, grease and paint.
- Class C fires- Involve energized electrical equipment, such as office equipment, outlets, motors, power tools and heaters. Water is a particularly dangerous extinguishing medium for class C fires because of the risk of electrical shock.
- Class D fires- Involve combustibles metals, such as magnesium, aluminum, potassium and sodium. These material burn at extremely high temperatures and will react violently with water, air and/or other chemicals. Class D fires are usually found only in industrial settings, and should be extinguished with a dry powder chemical only.

Note: Some fires may be a combination of these. Your fire extinguisher should have an ABC rating on it. These ratings will often have numbers like 3-A:40-B:C. higher numbers mean more firefighting power. In this example, the extinguisher has a good firefighting capacity for class A, B, and C fires.

C. TYPES OF FIRE EXTINGUISHERS

1. Water Extinguishers- Are a convenient extinguishing agent but is only effective on Class A fires. The water cools the fuel thereby reducing the heat. The maximum range for water based fire extinguishers is 15 to 20 feet away from the fire.
2. Carbon Dioxide Extinguishers- Can be used on both Class B & C fires. It extinguishes primarily through a smothering action by establishing a cover between the fuel and the surrounding air. When using a carbon dioxide extinguisher, you should stand 3 to 6 ft away from the fire to gain the maximum effectiveness.
3. Dry Chemical Extinguishers- There are several different dry chemical agents. The most common of all is sodium bicarbonate, which is nothing more than baking soda. There is also monoammonium phosphate, which is considered a multi-purpose agent that can work on Class A, B, and C fires. The maximum range for this type of extinguisher is 12 to 20 feet away from the fire.
4. Dry Powder Extinguishers- Are designed to extinguish Class D fires, which are combustible metals such as, aluminum, magnesium, sodium, and potassium. Dry powder extinguishers are used on Class D fires only. The maximum range for this type of extinguisher is 12 to 20 feet away from the fire.

D. FIRE EXTINGUISHER COMPONENTS

- Carrying handle/operating lever
- Locking pin
- Pressure gauge (except for CO² extinguishers)
- Discharge nozzle or horn
- Instructional label
- Inspection tag

E. FIRE EXTINGUISHER OPERATION – P.A.S.S

P- Pull the safety pin, this will allow you to discharge the extinguisher.

A- Aim the extinguisher the base of the fire, this

will allow you to hit the fuel.

S- Squeeze the top handle or lever, this will release the pressurized extinguishing agent.

S- Sweep the extinguisher hose from side to side until the fire is completely out.

Whenever possible, use the buddy system when using a fire extinguisher. If you have doubt about your personal safety or if you cannot extinguish a fire, leave immediately and close the doors (do not lock them). Leave the area, but contact 911 to relay whatever information you have about the fire.

After pulling the pin on the fire extinguisher stand back several feet from the fire, depress the handle, and sweep back and fourth until the fire is completely out. Wait and carefully check that the fire is out and has not reignited. If it has reignited, spray again – but remember that a typical fire extinguisher usually provides only 60 seconds of extinguishing power.

F. FIRE EXTINGUISHER MAINTENANCE

- Fire extinguishers should be mounted on the wall to prevent being damaged.
- The area in front of the extinguisher shall be kept clear at all times.
- he pressure gauge should be in the green zone at all times.
- Fire extinguishers should be inspected on a monthly basis.
- Know the location of all fire extinguishers in your facility.

CONCLUSION

You are not required to fight a fire. If you have the slightest doubt about your ability to control the situation, do not fight the fire. Use this mental checklist to make a fight-or- flight decision.

Before attempting to use an extinguisher, make sure all of the following apply:

- The building is being evacuated and the fire department has been called.
- The fire is small, contained and not spreading beyond its starting point.
- The exit is clear, there is no imminent peril, and you can fight the fire with your back to the exit.
- Know what type of fuel is burning.
- The proper extinguisher is on hand and you know how to properly and safely use it.

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