TAKE TIME FOR SAFETY

"Portable Fire Extinguishers"

Trainer Outline

1. **Goals: This safety session will teach employees to:**
   - Understand when to use a fire extinguisher.
   - Learn how to properly use a fire extinguisher.

   Fire is among one of the most deadly and costly accidents a company/entity can face. The Bureau of Labor statistics showed that in one recent year, more than 5,000 injuries requiring time off from work due to fires and explosions were reported.

2. **The fire triangle must be present for fire.**
   - Fuel: Paper, wood, flammable substances such as gasoline.
   - Oxygen: A gas present in the air.
   - Heat or Ignition Source: Flame, electricity, friction, spark, chemical reaction
   - To extinguish fire, you must use the appropriate fire extinguisher to eliminate one or more of the fire elements of the fire triangle.

   OSHA requires employers to have extinguishers present and provide training for designated employees. If there is a written emergency action plan and fire prevention plan (29 CFR 1910.38 and 1910.39) requiring immediate and total evacuation of employees from the workplace upon sounding of a fire alarm signal, employee training is not required.

3. **There are 4 types of fires.**
   - Class A: The most common fire, involves ordinary materials such as wood, paper, rubber and plastics. The common extinguishing agent is water, but dry chemicals are also effective.
   - Class B: Are comprised of flammable liquids, gases and greases. These are harder to extinguish and require the use of foam, carbon dioxide or dry chemicals to extinguish the fire.
   - Class C: Where there is an electrical charge present. Carbon dioxide and dry chemical extinguishers are required on Class C fires.
   - Class D: Fires caused by combustible metals including magnesium, titanium, potassium and sodium burn at high temperatures and have the ability to produce their own oxygen. Specialized techniques and agents, such as Class D extinguishers, are required to control and extinguish Class D fires.
   - Class K: Fires caused by cooking oils in kitchens. The extinguisher is charged with a potassium-based liquid that reacts with the burning oils to form a foam like substance. NEVER USE WATER ON THESE FIRES!
   - Extinguishers work because they contain an agent which eliminates one or more of the vital elements of the fire triangle. The extinguishing agent either reduces the temperature of the fire or smothers the fire eliminating the oxygen and the fuel.

4. **Types of fire extinguishers**
   - Class A: Extinguishers used to put out fires involving ordinary combustibles like wood, paper, rags, etc. Class A extinguishers may use water, foam or a multipurpose dry chemical to extinguish the fire. They may also have a number such as 1-A or 2-A which indicates the extinguisher's rated capacity. A 2-A extinguisher can handle twice as large a fire as a 1-A and a 3-A three times as large as a 1-A.
   - Class B: Extinguishers used to put out fires involving flammable liquids such as gas, oil, paint, solvents and grease. Class B extinguishers may use carbon dioxide, foam or dry chemicals to extinguish the fire by eliminating the oxygen. They may also have a number that tells how many square feet the extinguisher can handle. A 5-B extinguisher should be able to put out a five-square-foot fire and a 10-B a ten square foot fire, etc.
   - Class C: Extinguishers used to put out fires involving electricity. It is very important that you never use water on electrical fires as water conducts electricity and could cause a shock. Class C extinguishers may use carbon dioxide or a dry chemical to put out fires. These extinguishers do not have numbers.
   - ABC & BC: Combination extinguishers are used when a fire combines one or more of the three types of Class A, Class B and Class C type fires.
   - Class D: Extinguishers used to control/put out fires involving metals. They don't have numbers as they are considered for "special" hazard protection only.
   - Class K: Because of the higher heating rates of vegetable oils in commercial cooking appliances, Class K rating fire extinguishers are now required to be installed in all applicable restaurant kitchens. DO NOT USE WATER ON THESE FIRES!
   - Halotron: Does not damage electrical equipment, i.e. computers, copy and fax machines, printers, etc. while extinguishing a fire.

5. **Placement of fire extinguishers.**
   - Class A Extinguishers: Have to be no more than 75 feet from the area where they are likely to be used.
   - Class B Extinguishers: Are required to be no more than 50 feet from a possible Class B fire.
   - Class C Extinguishers: Are used for fires involving or surrounding electrical equipment. Class C extinguishers usually use carbon dioxide or a dry chemical to put out fires. It is very important that you never use water on electrical fires as water conducts electricity and could cause a shock. Are to be located within 50-75 feet from a possible Class C fire.
   - Class D Extinguishers: Are to be located within 75 feet from a possible Class D fire.
   - Class K Extinguishers: Are to be located within 30 feet from a possible Class K fire.
   - Highly visible signs indicating the location of extinguishers should be mounted 10 to 12 feet above the extinguisher.
   - All extinguishers should be mounted on brackets or placed in specially designed and marked cabinets.

6. **Who can use a fire extinguisher?**
   - Only authorized and trained employees are allowed to use fire extinguishers.
   - All other employees/occupants must evacuate on fire alarm activation.

7. **When to use a fire extinguisher: "fight".**
   - The fire alarm/notification has been made.
   - The fire is small and confined.
   - You can fight the fire with your back toward an unrestricted escape.
   - Your extinguisher matches the type of fire you face.
   - You are trained and confident that you can put out/control the fire.

8. **When not to use a fire extinguisher: “flight”.**
    - The fire is already large or has grown beyond the original confined space.
    - Your escape route is threatened.
    - You are not sure if your extinguisher is the right type for the fire.

9. **How to use a fire extinguisher: “pass”.**
    - Pull the pin, stand back 8 to 10 feet.
    - Aim at the base of the fire.
    - Squeeze the handle to release the extinguishing agent.
    - Sweep the base of the fire with the extinguishing agent. If you aim high at the flames, you won’t put out the fire.

10. **Fire extinguisher care and maintenance.**
    - Keep extinguisher clean.
    - Replace if damaged.
    - Recharge immediately after use.
    - Have hydrostatic testing done.
    - Remove non-rechargeable extinguishers after 12 years.

11. **Extinguisher inspection.**
    - Documented monthly inspections.
    - Annually serviced.
    - Extinguisher is not blocked and is accessible.
    - Pressure is acceptable.
    - Pin and tamper seal are intact.
    - No dents, rust or damage.

12. **Discussion Points:**
    Ask if employees know the location of the fire extinguishers throughout the facilities and in their vehicles and/or equipment.

13. **Conclusion:**
    In using a fire extinguisher the first decision that you have to make is “fight” or “flight”. Your training could make the difference in saving lives, minimizing injuries and reducing property loss. If you decide to try to extinguish the fire, remember the acronym, **“PASS”**.

14. **Test Your Knowledge**
    Have your employees take the Fire Extinguisher quiz. By testing their knowledge, you can judge their ability to understand how to reduce losses caused by fires and whether they need to review this important topic again.

This document is for informational purposes only. It is not expected to identify or anticipate every hazard, risk, code violation, potential area of liability or violation of safe practices. No party should rely on this information as a comprehensive identifier of every potential worker’s compensation or liability situation. Following the recommendations herein does not guarantee, assure, or warrant a member’s compliance with any Federal, State or Local laws, statutes, or regulations.

FIRE EXTINGUISHER QUIZ

1. The 3 elements of a fire are:

a) Oxygen, charcoal and lighter fluid.
b) Oxygen, heat and fuel.
c) Carbon dioxide, heat and fuel
d) Oxygen, fuel and water.

2. The significance of the "fire triangle" lies in the fact that?

a) If you add hydrogen, you can generate nuclear power.
b) It links both theology and physics.
c) If you take away one of the elements, you can put the fire out.
d) None of the above.

3. Before you attempt to put out a fire with a portable extinguisher you should?

a) Sound the fire alarm.
b) Determine you have the right type of extinguisher and the fire is small enough to be contained with a fire extinguisher.
c) Make sure you have an unobstructed route of escape.
d) All the above.

4. The acronym "PASS" stands for?

a) Ponder, access, stand, scream.
b) Pull, aim, squeeze, sweep.
c) Push, aim, sweep, swift.
d) None of the above.

5. The most common type of fires involves wood, paper, rubber and plastics.

a) True b) False

6. Fire Extinguishers must be inspected once a year?

a) True b) False

7. Class C fires are caused by combustible metals such as magnesium, titanium, potassium and sodium.

a) True b) False

8. Class B extinguishers are used to put out fires involving flammable liquids such as gasoline, oil, paint, solvents and grease?

a) True b) False

9. Non-rechargeable fire extinguishers have a 12-year shelf-life?

a) True b) False

10. Do you know where your emergency evacuation/fire plan is located and have you read it?

a) Yes b) No

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Quiz Answers

ANSWERS TO PORTABLE FIRE EXTINGUISHERS QUIZ

1. b. Oxygen, Heat, Fuel.

2. c. If you take away one of the elements, you can put the fire out.

3. d. All the above.

4. b. Pull, Aim, Squeeze, Sweep.

5. True.

6. False. Fire extinguishers should be inspected once a month and serviced annually.

7. False. Class C is electrical fires; Class D is metal fires.

8. True.

9. True.

10. Yes.

How and When to Use a Fire Extinguisher

Fire Triangle

Elements needed to sustain fire:

- Fuel: Paper, wood, flammable substances such as gasoline.
- Oxygen: A gas present in air.
- Heat or Ignition Source: Flame, electricity, friction, spark, chemical reaction.

Types of Fire Extinguishers

- Class A: Used to put out fires involving ordinary combustibles.
- Class B: Used to put out fires involving flammable liquids.
- Class C: Used to put out fires involving electricity.
- ABC & BC: Used when a fire combines one or more of A, B, or C fires.
- Class D: Used to put out fires involving metals.
- Class K: Used to put out fires involving kitchen greases.
- Halotron: Used to put out fires involving electrical equipment.

How to Use a Fire Extinguisher: PASS

- **P**ull pin, stand back about eight to 10 feet.
- **A**im at the base of the fire.
- **S**queeze the handle.
- **S**weep the base of the fire with extinguishing agent.