

Portable Fire Extinguishers

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Knowledge Objectives

State the primary purposes of fire extinguishers

Define Class A fires

Define Class B fires

Define Class C fires

Define Class D fires

Define Class K fires

Explain the classification and rating system for fire extinguishers

Explain the labeling system for fire extinguishers

Select the proper class of fire extinguisher

Define the P.A.S.S method

Apply the P.A.S.S method



Purposes of Fire Extinguishers



- Extinguish *incipient fires*
- Control fires where traditional methods are not recommended
- Available for immediate use on small, *incipient fires*

Extinguishing Incipient Stage Fires

- One **advantage** of fire extinguishers is their *portability*.
- The primary **disadvantage** of fire extinguishers is that they are “*one-shot*” devices.
 - If the device does not control the fire, some other device or method is needed.
 - Call **911 / FD** regardless of successful extinguishment or not



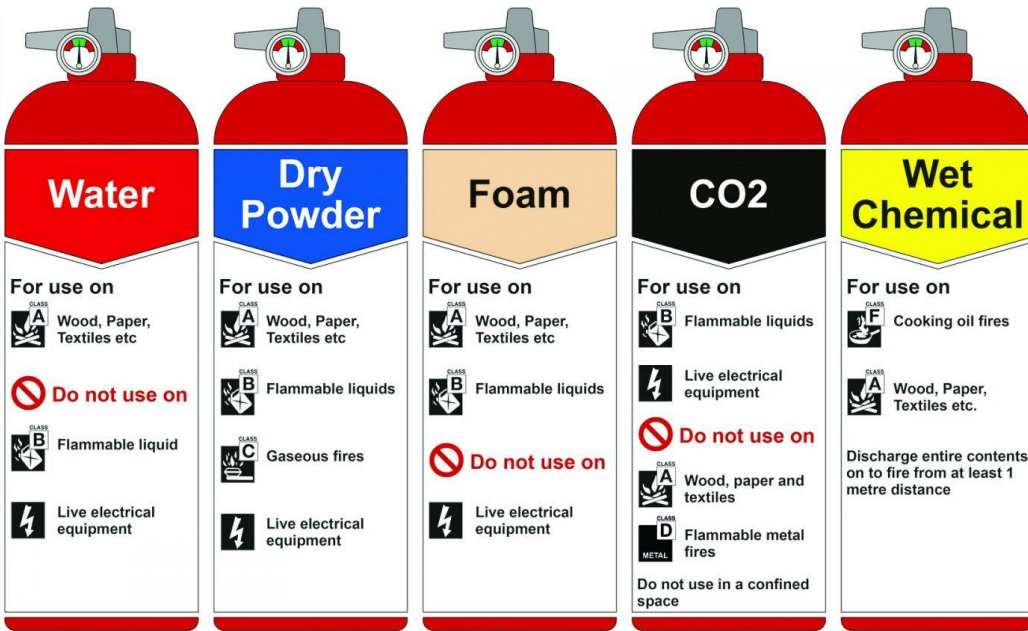


Methods of Fire Extinguishment

Extinguishers stop burning by:

- Cooling the fuel
- Cutting off the supply of oxygen
- Interrupting the chain reactions

Using The Correct Fire Extinguisher



- Essential to match extinguisher and fire
 - Some agents are more efficient on certain fires.
 - Some agents will not control certain fires.
 - Some agents are dangerous when applied to certain fires.
- Before selecting a fire extinguisher, ask yourself, *“Which class of fire am I fighting?”*

Classes of Fires

Class A Fires

- Involve **ordinary combustibles** and **natural vegetation**
- Water is the most common extinguishing agent.



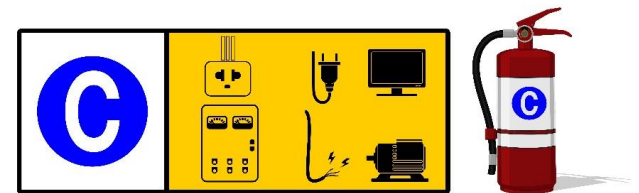
Class B Fires

- Involve **flammable or combustible liquids and flammable gases**
- Several different types of extinguishing agents are approved.



Class C Fires

- Involve **energized electrical equipment**
 - Can generate tremendous heat that ignites nearby Class A or B materials
- Agents that will not conduct electricity must be used.



Class D Fires

- Involve **combustible metals**
- Special techniques and agents are required.
 - Normal agents can react violently.



Class K Fires



- Involve combustible **cooking oils and fats**
- Required the development of a new class of agents



Classification of Fire Extinguishers

Standard test fires are used to rate the effectiveness of fire extinguishers.

- Testing may involve different agents, amounts, application rates, and methods.
- Fire extinguishers are rated for their ability to control a **specific type** of fire and prevent rekindling.
- A rating is only given if the extinguisher completely extinguishes the standard test fire and prevents rekindling.



ORDINARY

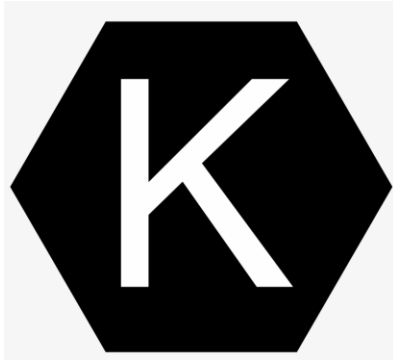


COMBUSTIBLES

ELECTRICAL



EQUIPMENT



FLAMMABLE



LIQUIDS

COMBUSTIBLE



METALS

Traditional
Lettering
System

A



B



C



K



D



Universal Pictograph System

Fire Extinguisher Placement

Extinguishers should be mounted so they are readily visible and easily accessed.



Portable Fire Extinguisher Components

6 basic parts:

- Cylinder
- Carrying handle
- Nozzle or horn
- Trigger
- Locking mechanism
- Pressure indicator



Stored-Pressure Water-Type Fire Extinguishers

- 2.5 gal (9.5 L) 2-A rating
- Used on incipient Class A fires
- Solid stream, range 35-40 feet (9-12 m), through a nozzle on a short hose
- Discharges for 55 seconds
- Contents can freeze



Dry Chemical Extinguishers

- Deliver a stream of **very finely ground particles** onto a fire.
 - Varying capabilities and characteristics
- First, the finer particles of the chemical vaporize when they reach the flame and release a vapor that **interrupts flame chemistry**.
- Particles shield the fuel surface from the **flame radiation**, thereby reducing the rate at which the burning fuel is being **pyrolysed or vaporized**.
- It can **smother the fire** by forming an insulating blanket.



Dry Chemical Extinguishers

Ammonium phosphate

- Rated for **Class A, B, and C fires**
- They are effective on Class B (flammable liquids and gases) fires.
- They can be used on Class C (energized electrical equipment) fires because the chemicals are nonconductive.
- They are not subject to freezing.



Dry Chemical Extinguishers: Disadvantages

- The chemicals, particularly the multipurpose dry chemicals, are **corrosive** and can **damage electronic equipment**.
 - The fine particles are carried by the air and settle like a fine dust inside the equipment.
 - During a period of months, the residue can corrode metal parts, causing damage.
- Chemicals may make breathing more difficult when discharged in an enclosed environment.



Ensure Your Personal Safety

- Approach fire with an exit behind you.
- Have a planned escape route.
- Never let fire get between you and exit.
- Never turn your back on the fire.
- Watch fire for rekindle.
- Keep the wind at your back.



Basic Steps of Fire Extinguisher Operation

PASS acronym:

- **P**ull the safety pin.
- **A**im the nozzle at the base of the flames.
- **S**queeze the trigger to discharge agent.
- **S**weep the nozzle across the base of the flames.



PASS

1 Pull
the pin



2 Aim at
the base
of the fire



3 Squeeze
the handle



4 Sweep
from side
to side



REPORTING EMERGENCIES

- **CALL Campus Safety and Security: 510-723-6666**
- **CALL 9-1-1**
- **BE CALM** and identify yourself.
- **IDENTIFY YOUR LOCATION**, Identify the location of the incident and describe as clearly as possible the nature of the problem (crime, fire, disaster, medical emergency)
- **REMAIN ON THE LINE**, The dispatcher will be sending proper emergency personnel to the scene. (Police Officer – Ambulance – Fire Department). The dispatcher will then advise you when all of the proper information has been obtained. Do not hang up; let the dispatcher hang up first

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EVACUATION PROCEDURES

- Be aware of all the marked exits from your area and building. Know two paths out of buildings.
- When the building evacuation alarm is sounded or when you are ordered to leave by your supervisor/manager or an administrator, walk quickly to the nearest marked exit and ask others to do the same.
- Assist/direct people with physical disabilities to the exits
- Outside, proceed to a clear area that is **at least 150 feet away from the buildings** Keep driveways to the building clear for emergency vehicles.

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EVACUATION PROCEDURES continued

- To the best of your ability, and without re-entering the building, assist administrators in their attempt to determine that everyone has evacuated safely.
- **Take roll of employees/students**
- If an Incident Command Post or an Emergency Operations Center may be set up near the emergency site. Keep clear of the incident command post/EOC unless you have important information to report.
- **DO NOT RETURN TO A BUILDING UNTIL YOU ARE TOLD TO DO SO OR UNTIL THE 'ALL CLEAR' HAS BEEN ANNOUNCED**



SHELTER-IN-PLACE/LOCK DOWN

In some emergency situations it is safer to seek shelter than it is to evacuate. Sheltering-in-place is often the appropriate choice for dynamic, threatening, and quickly changing conditions as a result of criminal activity or a hazardous materials incident.

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SHELTER-IN-PLACE PROCEDURES

- Do not open doors unless instructed to do so by recognized staff or positively identified public safety personnel.
- Alert others in the building
- If possible shut ventilation
- Seal large gaps in doors and windows with clothes, plastic etc...
- Listen to a portable radio for news (KCBS 740AM) and Emergency Alert System updates. Follow all instructions provided by public safety personnel.
- Remain sheltered until public safety personnel have determined that it is safe to leave.

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Let's go
practice!

