

BASIC FIRE SAFETY AT WORKPLACE

Introduction

One of the most important responsibilities of everyone is the detection and prevention of fires. When appropriate, staff, visitors, intern, and all GAM members should be trained in the proper and safe use of fire extinguishers. This information is to equip us with the knowledge and skills to detect and extinguish a fire only when it is safe to do so.

How does a fire works?

In order to understand how fire extinguishers work, we need to know the basic principle of fire. The three elements of a fire “Triangle” are Fuel, Oxygen, and Heat. Fire extinguisher will put out fire by taking away one or more elements of the fire triangle.

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



Sources of ignition (heat) – a heat or ignition source is essential to start the combustion process. Once combustion has started it generates its own heat which is usually sufficient to keep the fire burning other chemicals.

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

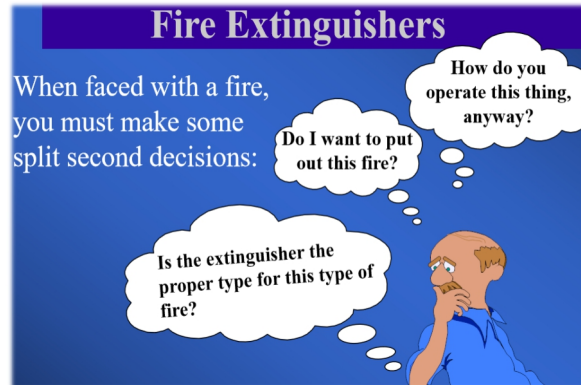
- Anything that will burn
- Paper, wood, cardboard, plastic, etc.
- Fabric
- Electrical equipment/wires
- Flammable liquids
- Cleaning material
- Gases and fumes

Once a FIRE has started it will produce heat, a flame (the zone where oxygen and flammable vapors are chemically combining in the combustion process) and smoke. The exact composition of the smoke will vary but typically smoke is made up of hot combustion gases such as carbon monoxide (CO) and carbon dioxide (CO₂) and small particles (soot).

How to determine type of fire extinguisher to be used?

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 Class of fire and type of fuel that is burning, this will determine what fire extinguisher to be used.



There are 4 Classes of fire :



Class A: Ordinary combustible & fibrous material, such as wood, paper, cloth, rubber, and some plastics



Class B: Flammable liquids such as gasoline, kerosene, paint, paint thinners, propane, and greases



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



Class D: Flammable metals, such as magnesium, titanium, potassium, lithium, calcium, zinc, and sodium.

There are 4 common types of fire extinguisher :



After recognize type of fuel and class of fire, determine the correct Fire Extinguisher. Refer to table below for better understanding :

Type of fire extinguisher

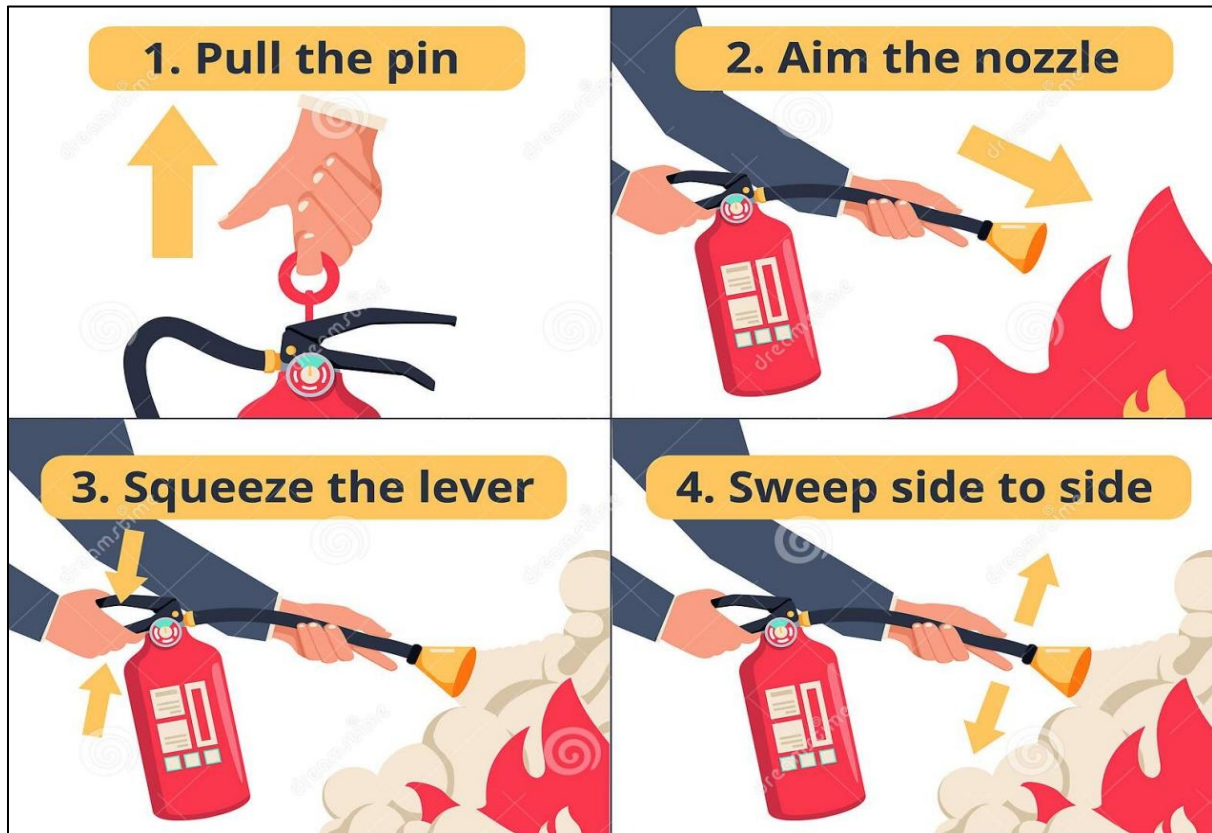
How to choose Fire Extinguisher	WATER	FOAM SPRAY	CO2	ABC POWDER
Wood, paper and textiles	✓	✓	✗	✓
Flammable liquids.	✗	✓	✓	✓
Gaseous fires.	✗	✗	✗	✓
Cooking oils and deep fat fires.	✗	✗	✗	✗
Live electrical equipment.	✗	✗	✓	✓

Type of fuel & Class of fire

* Most of GAM facilities are using ABC Powder and CO₂ depending on workplace and surrounding material.

How to use a fire extinguisher?

P.A.S.S. Method



1. **Pull The Pin** : This will allow you to squeeze the handle in order to discharge the extinguisher
2. **Aim the nozzle** : Aiming at the middle will do no good. Shoot to the base of fire.
3. **Squeeze the lever** : This will release the pressurized extinguishing agent
4. **Sweep side to side** : Cover the entire area that is on fire. Continue until fire is extinguished. Keep an eye on the area for re-lighting.



Remember when you want to pull out fire !

- You must keep an exit to your back
- Only fight a fire in the incipient stage



When NOT to Fight a Fire !

- **Don't have the proper extinguisher or equipment**
- **Fire has spread beyond its point of origin**
- **Your instincts tell you GET OUT**