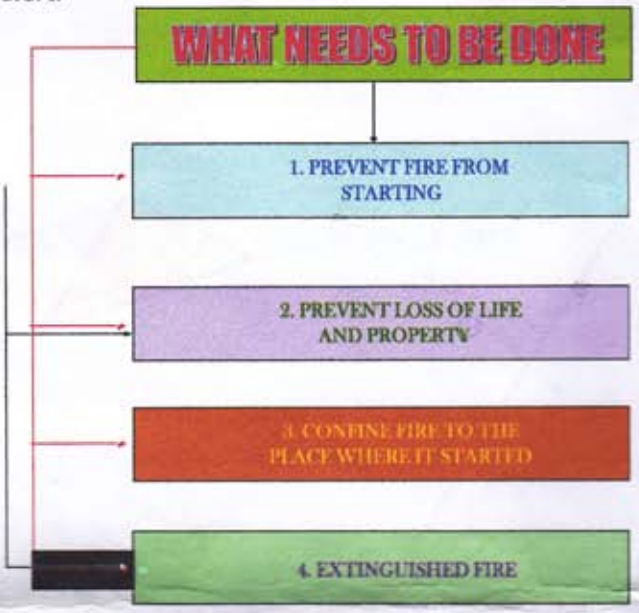


## Fire Outbreaks and Conflagrations

As a tropical country with a long dry season, the Philippines is very vulnerable to fire incidents. Almost its major cities and towns have been destroyed by fire at one time or another. So have its forest areas. The frequent fire outbreaks have been either caused by accidents or arson. The country's development and progress have often been stunted by the increasing fire incidents not counting the lives and injuries caused by fires.

### So what must the citizenry do?

There is a need for deeper concern and honest-to-goodness fire- safety consciousness on their part. The people should be more careful and civic-minded even as the authorities should be more vigilant and alert.



### Hazard Identification:

- 1. INSPECTION**
  - Conduct regular inspection to identify and correct fire hazards in the area.
- 2. RECOGNITION**
  - Identify and list fire hazards in the area.
  - Look at every situation in terms of the elements needed to start a fire.
- 3. EVALUATION**
  - Classify and prioritize the fire hazards by their degree of severity (minor, serious, major, catastrophic) and probability of occurrence (remote, low, moderate, high).
- 4. CONTROL**
  - List possible actions/alternatives to eliminate or reduce the fire hazards.
  - Compare cost effectiveness and time required for implementation.

### BASIC FIRE SAFETY REQUIREMENTS:

- 1. MEANS OF EGRESS OR ESCAPE
- 2. SIGNAGES
- 3. LIGHTING SYSTEM
- 4. ALARM SYSTEM
- 5. FIRE SUPPRESSION SYSTEM

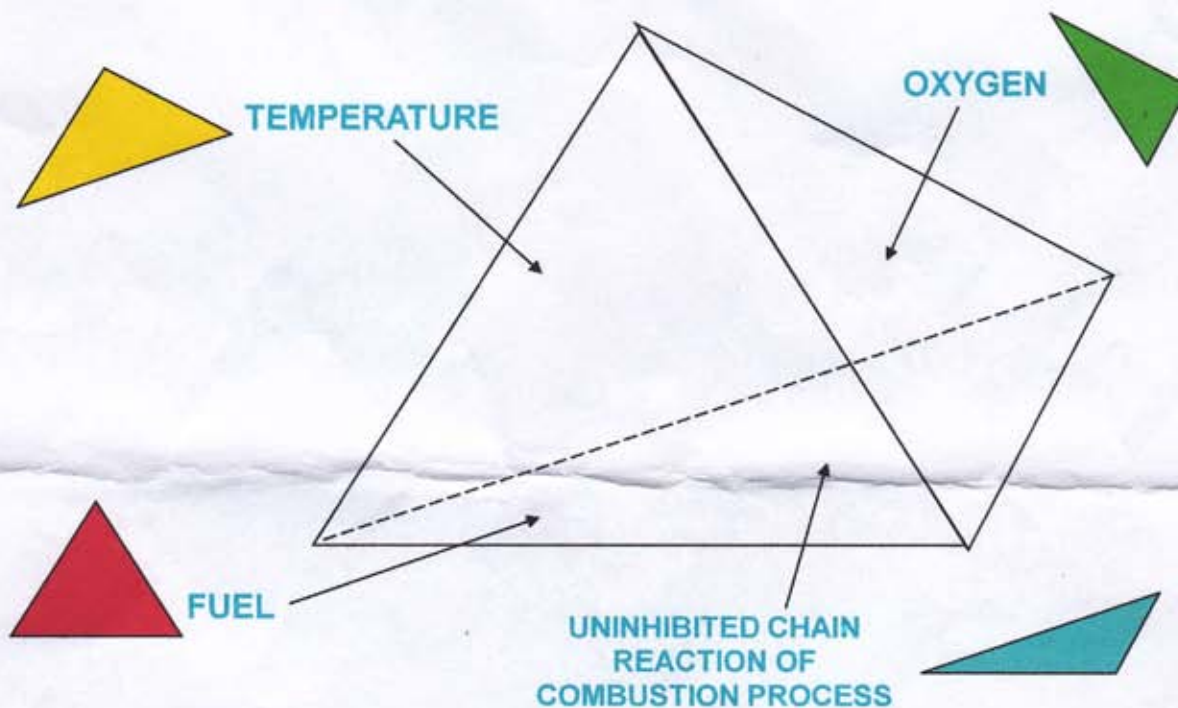
Fire safety education is designed to increase knowledge and to develop a change in attitude and behavior of men, women and children towards fire. Fire safety education may include home fire escape planning, babysitting fire safety, cooking fires, clothing fires, juvenile fire setters, first aid for burns, home fire hazards inspection, scald prevention, smoke detectors, fire extinguishers and sprinkler systems (home or at work).

### Common Causes of Fire:

1. Children playing matches
2. Use of jumpers
3. Open flames
4. Native stoves
5. Unattended flat iron
6. Leaking LPG
7. Faulty electrical Wiring
8. Electrical overload

### FIRE EXTINGUISHMENT THEORY

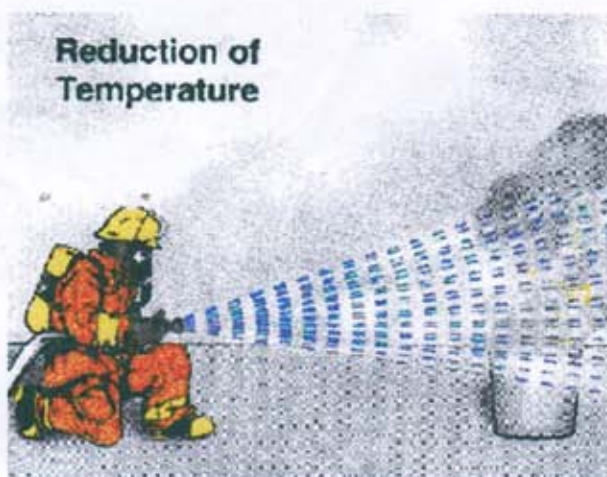
Fire is extinguished by limiting or interrupting one or more of the essential elements in the combustion process (fire tetrahedron).



A fire may be extinguished by reducing its temperature, eliminating available fuel or oxygen, or stopping the self-sustained chemical chain reaction.

1. Reduction of temperature
2. Fuel removal
3. Oxygen exclusion
4. Inhibition of chain reaction

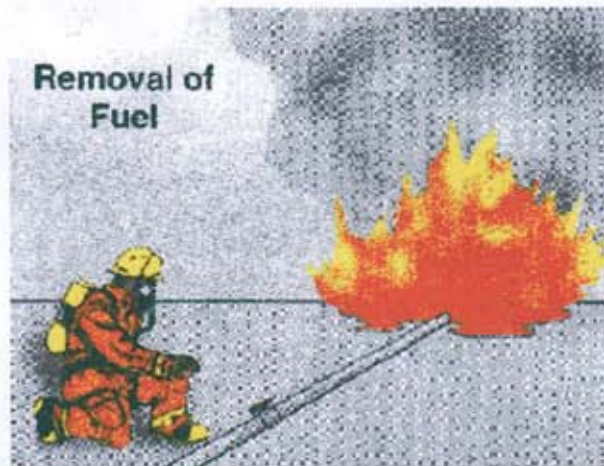
### TEMPERATURE REDUCTION



The use of water for cooling is also the most effective method available for the extinguishment of smoldering fires.

To extinguish a fire by reducing its temperature, enough water must be applied to the burning fuel to absorb the heat being generated by combustion.

### FUEL REMOVAL

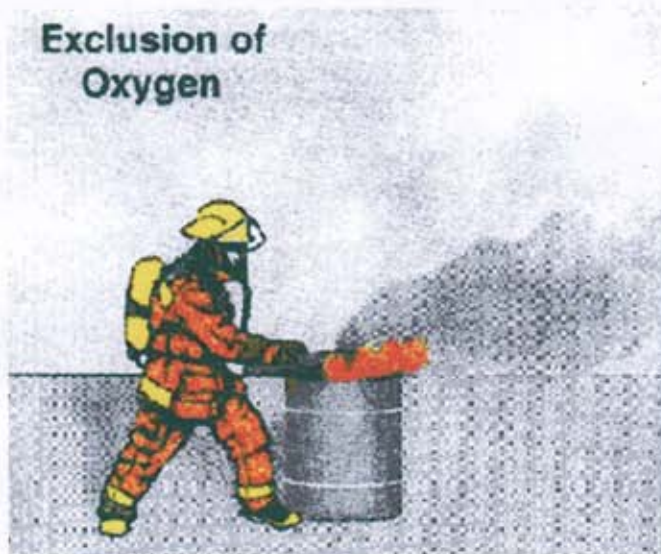


Removing the fuel source effectively extinguishes some fires.

The fuel source may be removed by stopping the flow of liquid or gaseous fuel or by removing solid fuel in the path of a fire.

Another method of fuel removal is to allow a fire to burn until all fuel is consumed.

### OXYGEN EXCLUSION



Reducing the oxygen available to the combustion process reduces a fire's growth and may totally extinguish it over time.

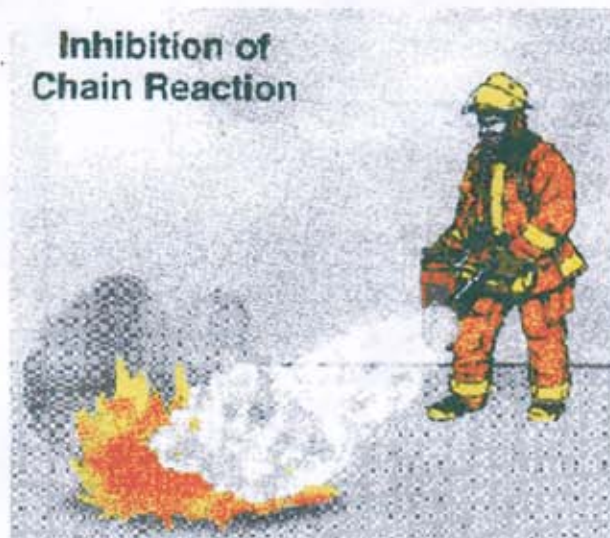
In its simplest form, this method is used to extinguish cooking stove fires when a cover is placed over a pan of burning food.

Oxygen can also be separated from fuel by blanketing the fuel with foam.

Of course, neither of these methods works on those rare fuels that are self-oxidizing.

The oxygen content can be reduced by flooding an area with an inert gas such as carbon dioxide, which displaces the oxygen and disrupts the combustion process.

## CHEMICAL FLAME INHIBITION



Extinguishing agents such as some dry chemicals and halogenated agents (halons) interrupt the combustion reaction and stop flaming.

This method of extinguishment is effective on gas and liquid fuels because they must flame to burn.

### MANAGING FOR FIRE PROTECTION

1. Identify fire risk. Organize task group on fire protection to include managers, supervisors and worker representatives.
2. Have a plan to ensure that all necessary precautions against risks of fire are effectively implemented.
3. Establish a written emergency plan detailing emergency assignments for all persons in the enterprise.
4. Assure that the emergency plan detailing emergency assignments for all persons in the enterprise.
5. Periodically request the local fire brigade to review the emergency action plan.

### INCORPORATING FIRE SAFETY IN BUILDINGS

1. Make sure that the over all layouts of the company premises do not provide any fire risk.
2. Make sure there are adequate walls and fire resistant doors to restrict movement of smoke/fire by products.
3. With the advise of qualified personnel, check whether the structure of the building is solid to prevent collapse in case of fire, explosions, earthquakes or floods.

### MINIMIZING FIRE RISKS

1. Isolate flammable solids, liquids and gases from sources of ignition such as open flames, heated surface or unprotected electrical wiring ( e.g. adequate marking, suitable fire resistant containers, paper ventilation).
2. Restrict the distribution of flammable materials used for daily work to only the minimum amount necessary.
3. Design fuel storage facilities in a clearly marked location well separated from areas where personnel are working. Keep flammable substances or combustible materials isolated from hot surface such as machines, equipment and furnaces.
4. When hazardous chemical are present, put into practices fire protection measures as indicated on chemical safety data sheet.
5. Take adequate precaution when open flames are present (i.e. welding, smelting, cutting). Isolate sources of fuel or combustible materials from open flames. The correct fire extinguisher should be at hand.
6. Safely install and maintain all electrical circuits. All electrical wires should be enclosed in solid casing to prevent damage except portable tools and lighting.

7. Protect each electrical circuit with an adequate fuse or circuit breaker located near the work station. Ensure that each circuit is properly labelled. Do not use extension cords. Use fixed wiring circuits instead. Never use multiple plugs to avoid overloading of circuits.
8. Arrange switches in such a way that individuals can rapidly shut down the work station in case of an emergency.
9. Effective housekeeping prevents fires. Organize storage areas ( i.e. racks, shelves, or in containers) to prevent unorganized accumulation of materials.
10. Mark and clear passageway to allow for easy movement of materials and personnel. Encourage the use of cart, hand trucks and mobile racks when moving materials,
11. Provide an adequate number of waste receptacles for each work station; remember to cover receptacles for combustible materials like paper, wood, plastic, fabrics and rags.
12. Designate specific smoking areas and make sure that they are free from flammable and combustible materials. Clearly indicate non-smoking areas by sign.
13. Provide ashtray in designated smoking areas. A sand bucket or specially designed receptacle maybe used for cigarette butts.

### PREPARING FOR FIRE EMERGENCIES

1. Where curtains are used, assure they are fire resistant.
2. Make sure there are at least two exit ways in every floor to a safe area outside the building. **Never** use an elevator during a fire.
3. Mark **EXIT WAY** and provide adequate lighting for day and night use.
4. Provide an adequate number of exit stairways for rapid evacuation.
5. Post **FIRE EXIT** diagrams at every work station.
6. Make sure all exit ways are free from obstruction and always unlocked. Ensure all **EXIT** doors open outward during an evacuation. Clearly mark doors that are not exits with a sign: **NOT AN EXIT.**
7. Handicapped workers need special attention in emergencies. Assign a specific individual to assist and accompany them to a safe area.
8. Assign a specific individual or group on shift to notify the fire brigade to back up the alarm system.
9. Train workers on when and how to use fire extinguishers.
10. Conduct at least one fire drill per year. Evaluate the results of the evacuation drill to improve evacuation performance.

### Learn How To Operate A Fire Extinguisher



## FIRE EXTINGUISHER Parts Identification



- Lever
- Seal
- Pin Lock (Ring at the back)
- Handle
- Pressure Gage
- Inspection Tag
- Hose
- Label
- Cylinder
- Nozzle

MMP- MONO AMONIUM  
PHOSPHATE

HYDRO CHORO FLURO CARBON

### HOW TO OPERATE A FIRE EXTINGUISHER?

It's easy to remember how to use a fire extinguisher. If you can remember the acronym **PASS**, which stands for **P**ull, **A**im, **S**queeze, and **S**weep.

1. **Pull the Pin.** This will allow you to discharge the extinguisher.
2. **Aim at the base of the fire.** If you aim at the flames (which is frequently the temptation), the extinguishing agent will fly away right through and do no good. You want to hit the fuel.
3. **Squeeze the top handle or lever.** This depresses a button that releases the pressurized extinguishing agent in the extinguisher.
4. **Sweep from side to side until the fire is completely out.** Start using the extinguisher from a safe distance away, and then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

### Classification of Fires and its Extinguishments Methods

1. Class "A" Fires – Are fires involving ordinary combustible materials such as wood, cloth, paper, rubber and many plastics.

Method of extinguishments - Cooling or quenching effect to reduce the temperature of the burning materials.

2. Class "B" Fires – are fires involving flammable and combustible liquids, greases and gases such as gasoline, oils, lacquers, paints and alcohol.

Methods of extinguishments - Smothering or blanketing removes the oxygen

3. Class "C" Fires – are fires involving energized electrical equipment. These Fires can sometimes be controlled by a non- conducting extinguishing agent such as halon, dry chemical or CO<sub>2</sub>.
4. Class "D" Fires – are fires involving combustible metals such as aluminum, magnesium, titanium,

**IN CASE OF FIRE**

# REACT

**R**emove persons from immediate danger if possible

**E**nsure door(s) is closed to confine fire and smoke

**A**ctivate the fire alarm system / use nearest fire station

**C**all the Fire Department, Dial 911

**T**ry to extinguish the fire or concentrate on further evacuation

**REMAIN CALM**

[www.safetymedia.com](http://www.safetymedia.com) SI04REX

### Reporting Fire Call Assistance

1. Give the exact location
2. Tel. number of caller
3. Name of caller
4. Status of fire
5. What is involved

### CONTACT NUMBER IN CASE OF FIRE:

**160 OR 161** (PLDT MARATEL)

**16011** (GLOBE LINE)