

Fire Safety

Fire:

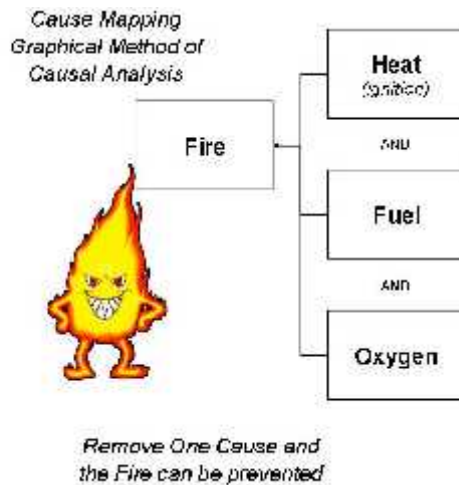
Fire is the rapid oxidation of a material in the exothermic chemical process of combustion, releasing heat, light, and various reaction product or Fire is a chemical reaction in which oxygen is combined with a gaseous or vaporous fuel.

Elements of Fire:

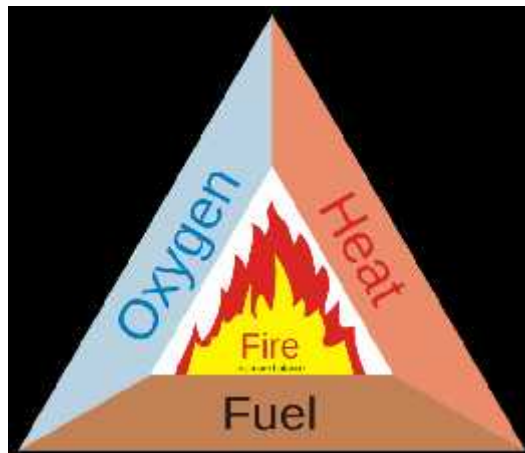
Fire can usually take place only when these three elements are present:

- Oxygen.
- Fuel.
- Heat (energy).

Preventing the combination of these elements will prevent a fire. If one of the elements is removed from the fire situation, the fire will be extinguished.



Fire Triangle:



Oxygen:

Oxygen is readily available. It makes up 21% of the air.

Fuel:

- Solid combustibles like paper, furniture, clothing and plastics.
- Flammable liquids like petrol, oils, kerosene, paints, solvents and cooking oils / fats.
- Flammable gases like natural gas, LPG, acetylene.

Heat:

- The heat given off by the oxidation reaction sustains the fire once it is established.
- But first, a heat source is required to produce ignition. Ignition sources include: Heating and cooking appliances, Faulty electrical equipment and Cigarettes.

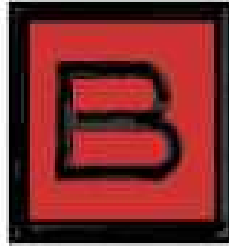
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TYPES OF FIRE:

- Pool fire.
 - Flash fire.
 - Jet fire.
 - Fire ball.
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- CLASS "A" - These fires are fueled by ordinary combustible materials, such as wood, cloth, paper, and many plastics. This type of fire is best extinguished by removing the heat side of the triangle.
 - Extinguishers suitable for Class "A" fires should be identified by a triangle containing the letter "A"; if color-coded, the triangle will be green.



- " CLASS "B " - These fires are fueled by flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols and flammable gases.
- This type of fire burns on the surface of the fuels, and is best extinguished by a blanketing or smothering action.
- A fire of this type is fast-spreading and capable of engulfing a large area in a very short time.
- Extinguishers suitable for Class "B" fires should be identified by a square containing the letter "B". If color-coded, the square is red.



- CLASS "C" - These fires occur in energized electrical equipment, where the electrical non-conductivity of the extinguishing media is of importance.
- Blanketing or smothering this type of fire with a non-conducting extinguishing agent is of prime importance.
- Water, or solutions containing water, is never to be used on a Class "C" fire.
- Extinguishers suitable for Class "C" fires should be identified by a circle containing the letter "C"; if color-coded, the circle is blue.



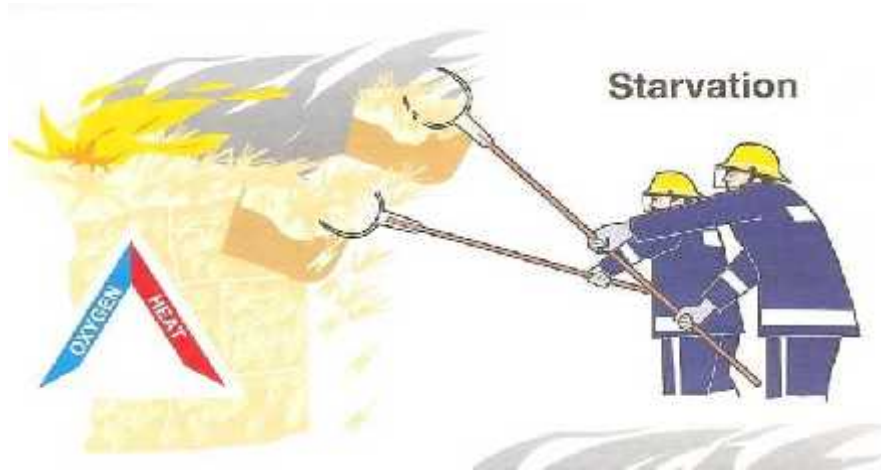
- CLASS "D" - These fires involve combustible metals, such as magnesium, titanium, zirconium, sodium, lithium and potassium.
- Generally the extinguishing agent is referred to as DRY POWDER.
- These extinguishers should be identified by a star containing the letter "D", if color-coded, the star is yellow.



Principles of Fire Extinction:

1. Starvation:

Removal of un-burnt material from fire area.



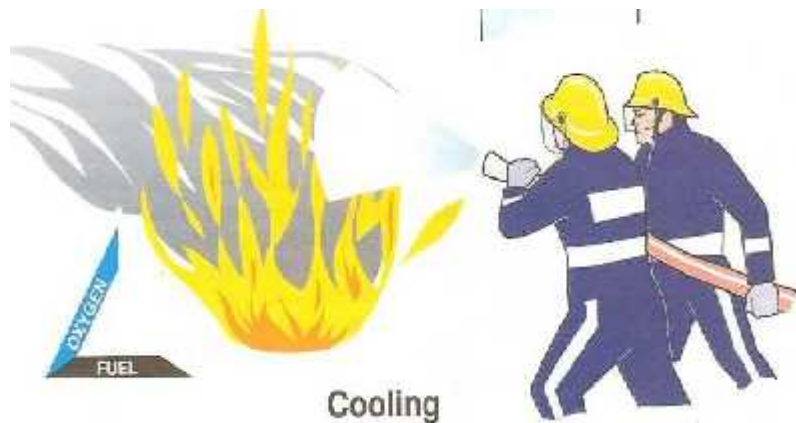
2. Smothering:

Cutting off the supply of oxygen from fire area.



3. Cooling:

Removal of burning material/fire



heat from the area.

Fire protection systems

There are two types of Fire protection systems,

a. Passive protection system

- Compartmentation.
- Fire resistant materials.
- Fire retardant structures.

b. Active protection system

- Fire extinguishers.
- Fire hydrant systems.
- Fire sprinkler systems.
- Fire alarm and detection systems.

Correct method of using Fire Extinguishers:

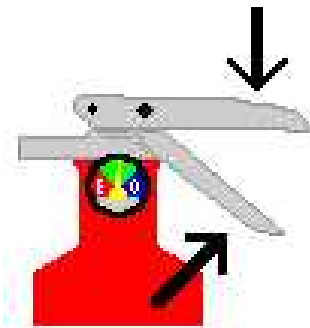
1. Pull the pin:



2. Aim at the base of the fire:



3. Squeeze the lever:



4. SWEEP from side to side slowly:

