



GLOBAL TECHNICAL INSTITUTE

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In the name of God, the merciful
and compassionate.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Fire Watch

Completer Training Course

Course Duration 03 Days

Online / Face to Face Training

Fees for International Students : SAR 200/-

Fees for Pakistani Students : PKR 5000/-

FIRE WATCH

COURSE INDEX

1. Fire

2. Causes of Fire

3. Classification of Fire

4. Fire Extinguisher

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6. Colour Coding to identify Fire Extinguisher

7. How to Use Fire Extinguisher?

FIRE WATCH

8. Safe Handling of Fire

9. Fire Extinguishers used for different classes of Fire

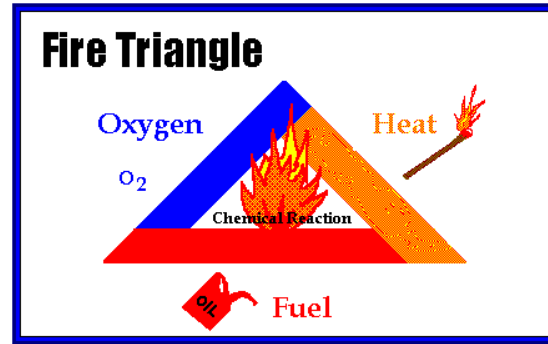
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FIRE



It can be defined as

“It is the chemical reaction of fuel, (Oxygen) air and source of ignition (Heat).”

It can be represented by a triangle and is called Fire Triangle.

Causes of Fire



Hot work



Chemical reactions



Electrical equipment



Deliberate ignition



Smoking



Unsafe use and storage of flammable liquids and gases



Cooking appliances



Mechanical Heat



Classification of fire

There are following classes/types of fire.

Class A: Solid combustible non-metals that leaves an ash. I.e. Wood, Paper, Clothes, Plastic etc.

Class B: Flammable liquids that boils or bubbles. I.e. Gasoline, Grease, oil etc.

Class C: Flammable Gases, i.e. Methane, Propane, LPG, LNG etc.

Class D: Metals Such as Magnesium, Potassium, Sodium, Aluminium, Iron etc.

Class K or F: Kitchen Fire, Cooking oil

Electrical Fire: Fire related to electrical equipment's.

Fire Extinguisher:



- A Fire Extinguisher is an active fire protection device used to control or extinguish small fire, often in emergency situation. It is not intended for use on an out of control fire.

Types of Fire Extinguisher



There are five types of fire extinguisher



Water Type Fire Extinguisher



Foam Type Fire Extinguisher



DCP Type Fire Extinguisher



CO₂ Type Fire Extinguisher



Wet Chemical Fire Extinguisher





Water type Fire Extinguisher

Water extinguishers are used on solid material such as wood, paper, fabrics and other A class fire risks. The water cools the fire and extinguishes it. Water fire extinguishers have a red label and a class a rating. They are suitable for fighting fires involving solid combustibles such as wood, paper and textiles. Never use a water extinguisher on electrical fires or any fire involving a flammable liquid.

Advantages of Water Extinguisher



Water is inexpensive and readily available. Zero impact on the environment. It is an effective fire extinguisher on Class A fires



Foam Type Fire Extinguisher

- It is also known as AFFF (Aqueous Film Forming Foams). Foam agents work well on combustible materials like wood, paper, and cloth as well as flammable oils, diesel fuel, and alcohols to name a few. They are non-toxic and extinguish the fire by forming a Foam fire extinguishers can be used on Class A and B fires. They are most suited to extinguishing liquid fires such as petrol or diesel and are more versatile than water jet extinguishers because they can also be used on solids such as wood and paper.

DCP type Fire Extinguisher



It puts out the fire by coating the fuel with a layer of powder and in this way the powder creates a barrier between the fuel and oxygen. They are also used for Class A fire, class B fire, Class C Fire, class D fire and Electrical Fire. A dry chemical fire extinguisher is one of the most commonly utilized by extinguisher types throughout the world.

CO₂ type Fire Extinguisher



CO₂ are designed for flammable liquid and electrical fires only. Carbon dioxide extinguishes work by displacing oxygen, or taking away the oxygen element of the fire triangle. The carbon dioxide is also very cold as it comes out of the extinguisher, so it cools the fuel as well. Suitable for class B flammable liquid fires (petrol, oil, solvents), and recommended for use on live electrical equipment.

CO₂ type Fire Extinguisher



Carbon Dioxide extinguishers are filled with non-flammable carbon dioxide gas under extreme pressure. You can recognize a CO₂ extinguisher by its hard horn and lack of pressure gauge.



CO₂ fire extinguishers don't have a pressure gauge because they use liquefied CO₂ (commonly known as dry ice).

Don't CO₂ Fire Extinguishers have a Pressure Gauge?

Wet Chemical Fire Extinguisher



These are usually supplied with a long lance which helps to safely deploy the foam. The wet chemical forms a thick soapy foam-like blanket over the surface of the burning oil/fat which stops oxygen from reaching the fire and smothers the flames. They are also used for Class A fire and class K fire.

Colour Coding to identify Fire Extinguisher



Water Type

RED



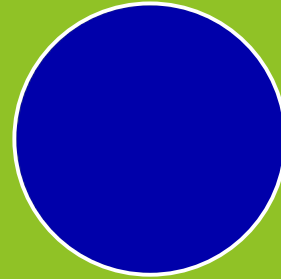
Foam Type

CREAM



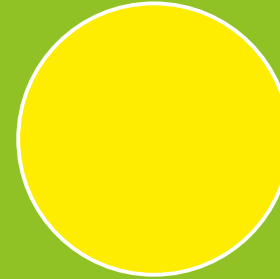
CO₂ Type

BLACK



DCP Type

BLUE

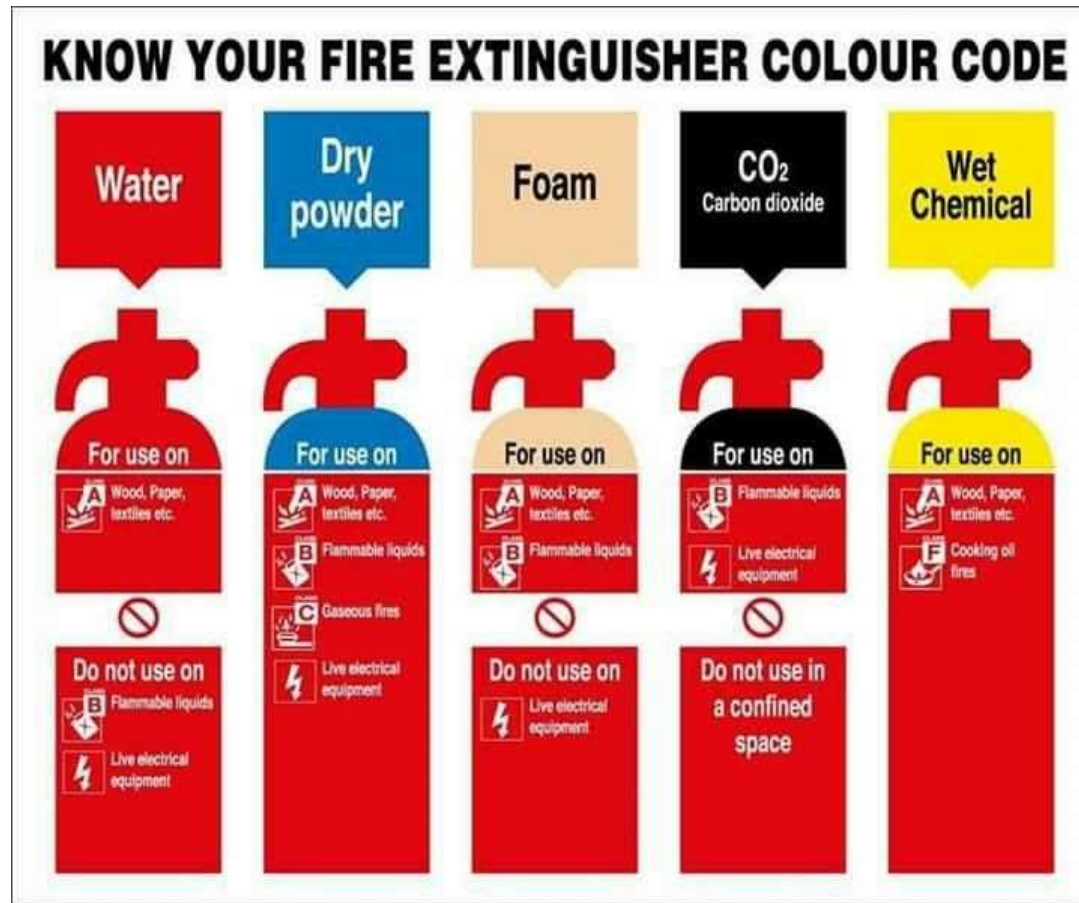


Wet Chemical

YELLOW



Colour Coding to identify Fire Extinguisher



How to Use Fire Extinguisher?



There is one formula used to extinguish the fire that is "PASS".



P= Pull the pin



A= Aim the Nozzle at base of fire.



S= Squeeze the Handle

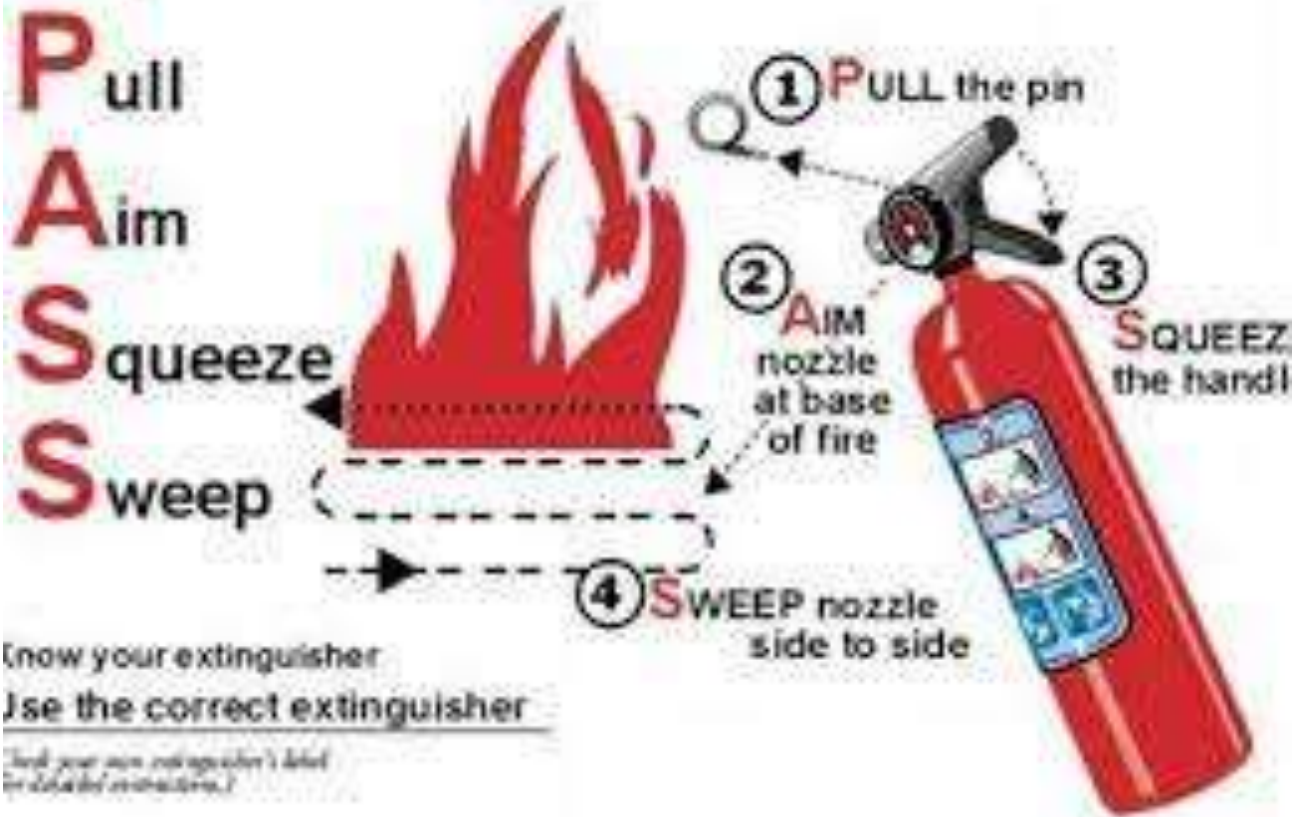


S= Sweep Nozzle from side to side



How to Use Fire Extinguisher?

To operate an extinguisher:



Safe Handling of FIRE

Check the direction of air

Position yourself at a location so that air flows from you towards the fire.

Cut off Gas/Power Supply.









































Select the right type of Fire Extinguisher.

Stay at distance (6-8 feet) from fire.

Try to contain Fire till such time Rescue arrives.

Fire Extinguishers used for different classes of Fire

Symbols found on fire extinguishers & what they mean

						
		Water	Foam spray	ABC powder	Carbon dioxide	Wet chemical
Wood, paper & textiles 						
Flammable liquids 						
Flammable gases 						
Electrical contact 						
Cooking oils & fats 						

Fire Extinguishers used for different classes of Fire

Type Extinguisher	Fire						Comments
	CLASS A Combustible materials (e.g. paper & wood)	CLASS B Flammable liquids (e.g. paint & petrol)	CLASS C Flammable gases (e.g. butane and methane)	CLASS D Flammable metals (e.g. lithium & potassium)	Electrical Electrical equipment (e.g. computers & generators)	CLASS F Deep fat fryers (e.g. chip pans)	
Water	✓	✗	✗	✗	✗	✗	Do not use on liquid or electric fires
Foam	✓	✓	✗	✗	✗	✗	Not suited to domestic use
Dry Powder	✓	✓	✓	✓	✓	✗	Can be used safely up to 1000 volts
CO2	✗	✓	✗	✗	✓	✗	Safe on both high and low voltage
Wet Chemical	✓	✗	✗	✗	✗	✓	Use on extremely high temperatures

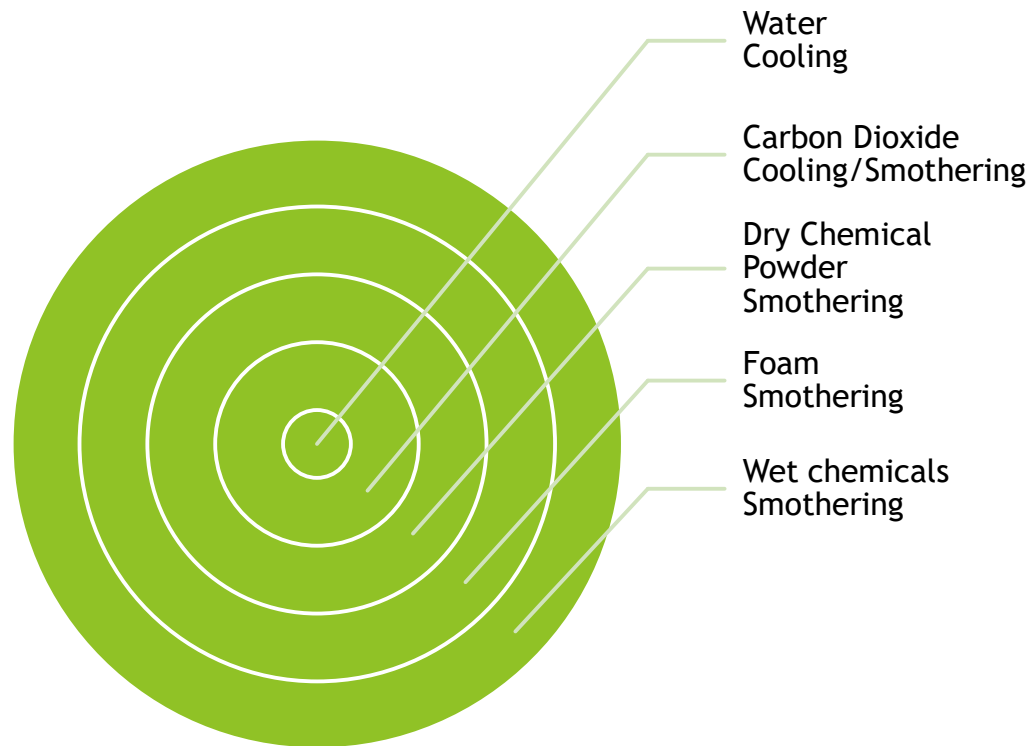
Fire is Basically Extinguished by three Methods

Starvation

Smothering

Cooling

Fire is Basically Extinguished by three Methods



Fire Watcher

A responsible person, who must have fire suppression equipment with them, performs a fire watch. The area to be watched for fire is patrolled by the fire watch personnel and action taken in the event of a fire.

Responsibilities of Fire Watcher

The fire watch is responsible for monitoring and maintaining fire safety equipment and procedures.

Fire watch can help workers prevent fires that could lead to property damage, serious injuries, or worse.

Fire watch is when a person is assigned to keep watch on hot work and fire hazards

A fire watch is even more important where hot works (work with welding and other fire hazards

Responsibilities of Fire Watcher

The fire watch ensures that if ignition occurs, it can be extinguished as soon as possible.

A fire watcher should not allow any Combustible material within a 15 meter radius of the work place.

Responsibilities of Fire Watcher

A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smouldering fires.



Responsibilities of Fire Watcher (SAUDI ARAMCO)

Flammable storage areas shall be secured (e.g., locked, fenced) and located at least 15 m (50 ft.) away from the nearest building or storage area for other combustibles. No other materials shall be stored with flammable liquids.

Flammable materials shall not be stored in direct sunlight



Responsibilities of Fire Watcher (SAUDI ARAMCO)

For flammable/combustible liquid storage areas located outdoors, portable fire extinguisher(s) suitable for the fire hazard involved shall be located not less than 7.6 m (25 ft) nor more than 23 m (75 ft) from the fire hazard.

The area around firefighting equipment (e.g., fire extinguishers, fire hydrants) shall be kept clear so that they are readily accessible in case of an emergency.



Responsibilities of Fire Watcher (SAUDI ARAMCO)

Appropriate warning signs (e.g., “Flammable Liquids,” “No Smoking,” “Flammable - Keep Fire Away”), which shall include an internationally recognized hazard pictogram(s) (see example), shall be posted at flammable storage areas.

Waste shall be removed from the work site at regular intervals and at the end of each work day.

Fire Detection and Firefighting Arrangements



**Smoke
Detector**

Fire Detection and Firefighting Arrangements



**Heat
Detector**

Fire Detection and Firefighting Arrangements



Infrared
detector

Fire Detection and Firefighting Arrangements



**FIRE
ALARM**

Fire Detection and Firefighting Arrangements



Water/
Fire
Hydrants

Fire Detection and Firefighting Arrangements



Emergency
Lights

Fire Detection and Firefighting Arrangements



**FIRE
Sprinkler
System**

Fire Detection and Firefighting Arrangements



Fire
hose

Fire Detection and Firefighting Arrangements



**FIRE
Hose**

Fire Detection and Firefighting Arrangements



FIRE
Blanket

Fire Detection and Firefighting Arrangements



Fire Detection and Firefighting Arrangements



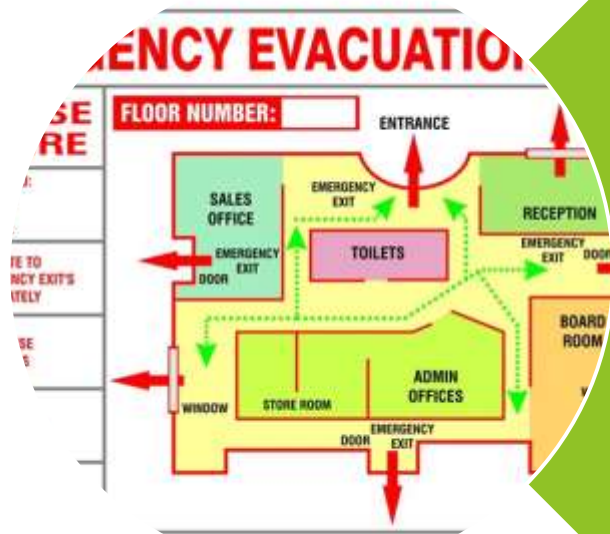
FIRE
Emergency
Exit Door

Fire Detection and Firefighting Arrangements



Emergency
Contact
Numbers

Fire Detection and Firefighting Arrangements



Emergency Evacuation Plan

Fire Detection and Firefighting Arrangements



FIRE
Fighting
Team

QUESTIONS?



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Thank You
for your
attention.

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