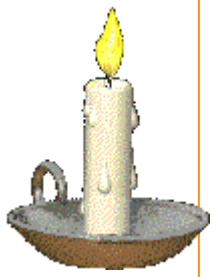
Sequence

- Introduction
- Aim
- Training Firefighter
- Fire & Smoke
- Causes & Classification Of Fire
- Fire Extinguishers- Types & Use
- Methods Of Extinguishing Fire
- Fire Detection & Extinguishing Fire
- React & Fire Emergency Principle
- What Must Know - DO’s & Don'ts
- PASS Method
- Evacuation
- Prevention
- Fire Fighting Teams
- State of Firefighting Equipment
- Emergency Telephone Numbers
- Demo

Fire Safety Instructions
Safety & Security Department IOBM



Introduction:

- This Presentation deals with the precautions needed to minimise the risk of fires, how fires are caused and how to extinguish them, with a focus on using fire fighting equipment and apparatus to extinguish various types and sizes of fires including rescue in smoke filled enclosed spaces.
- A well-trained employee with an on-site fire extinguisher can put out small, non-hazardous fires effectively. However, to do this safely, the employee must have knowledge of equipment and portable fire extinguisher limitations, in addition to the hazards associated with fighting fires. There may be situations where employee firefighting is warranted to give other workers time to escape, or to prevent danger to others by spread of a fire.

FIRE PREVENTION

AIM

The aim of this presentation is to develop a greater awareness of the hazards of fire and tackle small fires by providing periodical training to all staff & students.

- **Understand the nature of fire and how it spreads**
- **Identify the dangers of Smoke and Fire**
- **Identify specific hazard areas and reduce hazards**
- **Distinguish between different types of fire extinguishers and their suitability in attending to the different types of fires.**
- **Fire protection and Preventive measure**

FIRE PREVENTION

Objective

- Understand the nature of fire and how it spreads
- Identify the dangers of Smoke and Fire
- Identify specific hazard areas and reduce hazards
- Distinguish between different types of fire extinguishers and their suitability in attending to the different types of fires.
- Fire protection and Preventive measure

FIRE PREVENTION

Training

All employees, Students and guards should be trained to use fire extinguishers. It is recommended the training session cover how to handle; what type of extinguisher to use; and the PASS system of early-stage firefighting. It is also recommended that fire training be conducted periodically or different segments may be provided training as per their availability. They should be trained like a firefighter by providing them hands-on practice to extinguish a fire

FIRE PREVENTION

Firefighter

- A firefighter is a rescuer, primarily to extinguish hazardous fires that threaten life, property and the environment as well as to rescue people and equipment from dangerous situations.
- A well-trained security guard, student and employee with an on-site fire extinguisher can also put out small, non-hazardous fires effectively.
- However, to do this safely, the employee must have knowledge of equipment and portable fire extinguisher limitations, in addition to the hazards associated with fighting fires.
- There may be situations where employee firefighting is warranted to give other workers time to escape, or to prevent danger to others by spread of a fire. However the responsibility lies with security department to prevent and React against any Hazard.

FIRE PREVENTION

FIRE

Fire is a chemical reaction. Fire is created due to ignition in any inflammable material due to heat and uses oxygen to survive. Fire is the result of the reaction between the fuel and oxygen in the air. Ignition sources can include any material, equipment or operation that emits a spark or flame. It requires three elements to be present for the reaction to take place and continue. A fire burns due to the presence of three elements:

- Fuel
- Oxygen
- Heat

— often referred to as the fire triangle.

FIRE PREVENTION

Smoke

- The byproduct of fire is smoke. The smoke released by any type of fire (Paper, bush, crop, waste or wood burning) is a mixture of particles and chemicals produced by incomplete burning of carbon-containing materials. All smoke contains carbon monoxide, carbon dioxide and particulate matter.
- Smoke and poisonous gases in the smoke are very dangerous. Most often people are hurt by the smoke and the poisonous gases, not the flames. Smoke is irritating to the eyes, nose, and throat, and its odor may be nauseating. Inhaling carbon monoxide decreases the body's oxygen supply. Main danger from smoke is reduced visibility, while the adverse effect on body functions is chocking due to the acidic gases and vapors.
- Smoke can slow the escape from a burning building and prolongs the exposure to harmful effects of toxic products.
- Smoke normally spreads two to three feet above the ground, so try to walk on your four feet or crawl at lower level while passing through smoke filled area. Use wet towel on your mouth and nose.

FIRE PREVENTION

Causes of Fire

- Faulty Electrical wiring and equipment.
- Loose connections.
- Low quality extensions.
- Poor House Keeping i.e. stacking of inflammable material.
- Overloaded Electrical systems.
- Overheating of equipment.
- Careless handling of gas burners, cigarettes, naked flames and inflammable material.
- Spontaneous combustion-Sun / direct Heat.
- Playing with fire-Fire crackers.

FIRE PREVENTION

Classification of Fire

Types of fire are separated into different classes based on the fuel source involved. Knowing the classes of fire will help you choose the appropriate extinguisher.

A - Class- Solid (Wood, Paper, cloth, etc).

B - Class- Flammable liquids (Paint, Oil etc).

C - Class- Flammable Gases (Carbon Mono Oxide).

D - Class- combustible Metals (magnesium, sodium, potassium, Copper etc.). Water must not be used on metal fires.

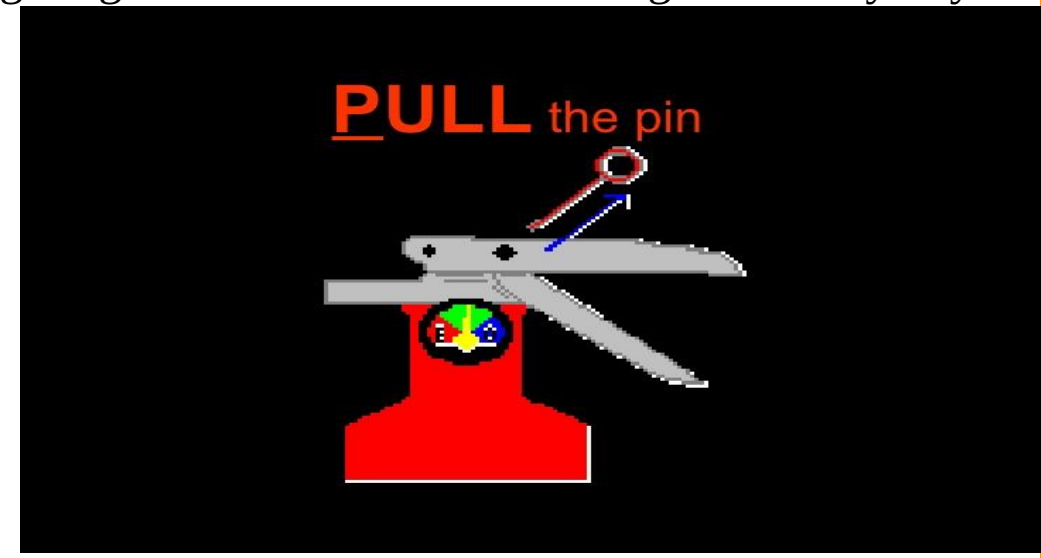
E - Class- Electrical Fire. (Electric wires & Cables).

FIRE PREVENTION

Fire Extinguishers

- **A fire extinguisher** is a portable cylinder coloured in red with white labeling. Normal capacity 1.5 to 25 lbs. Range: 3 to 15 Feet. Duration: Discharge in 5 to 30 sec.

- Use the right type of extinguisher for fighting the fire. Use the fire extinguisher only if you have attended training.
- Common Types are:-



- **Fire Hydrant**

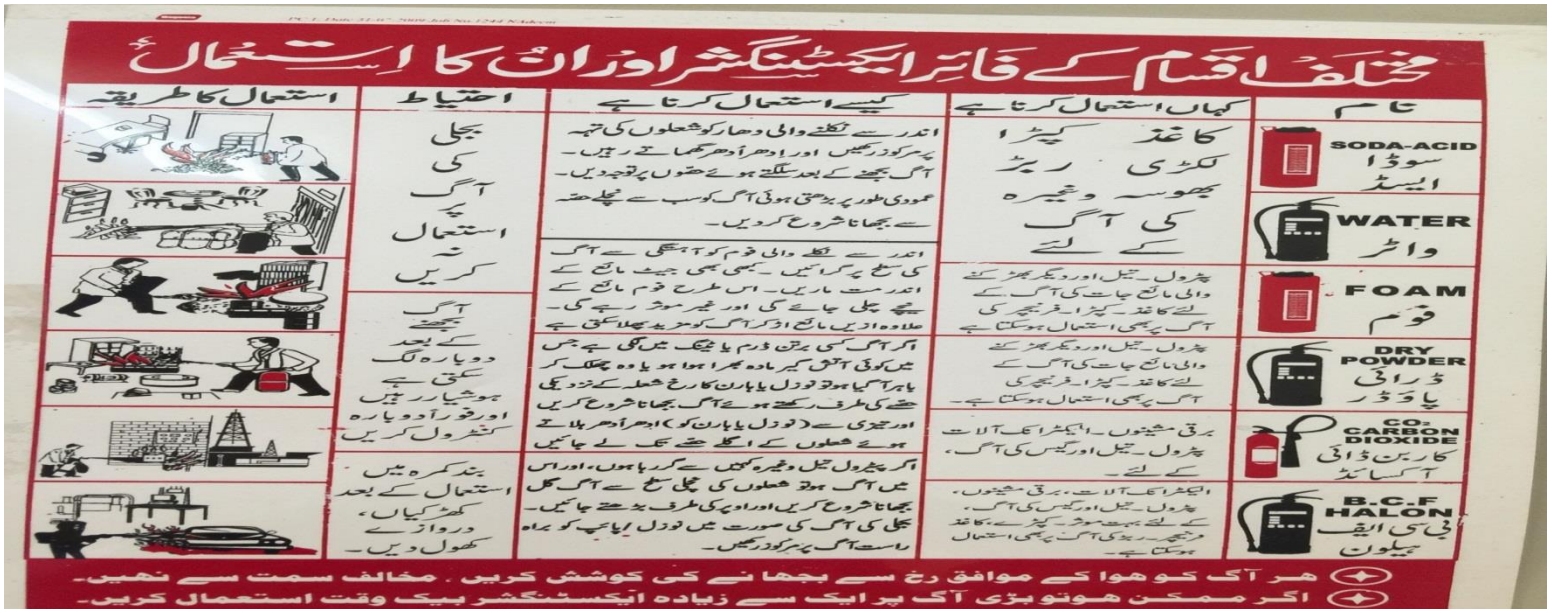
Fire Hydrant-30 Meter hose with nozzle are kept on each floor of a building.

Jet water will go up to 50 to 60 feet.

FIRE PREVENTION

Common Types of Fire Extinguishers & Its Use

- **Water** - wood, paper, Textile- Not for Electric & Oil Class A.
- **Soda Acid** - wood, paper, Textile- Not for Electric & Oil Class A.
- **Foam** - Oil, Metals- Not for electric Class A, B & D
- **Dry Powder** – Oil & Electric Class A, B & C
- **CO_2 & BCF Halon** – Electrical Fire Not for metals Class A, B & C



آگ یا حادثہ

۱۱۔ تپش ہوا آگ پکڑنے والی اشیاء اگر یہ تینوں چیزیں موجود ہوں تو آگ لگ سکتی ہے اگر آپ ان میں سے کسی ایک چیز کو روک دیں تو آگ بجھ سکتی ہے کہیں پر بھی ایسی کوئی آگ لگنے والی شے دیکھیں تو فوراً اطلاع کریں

۱۲۔ آگ کو دیکھتے ہی تیز تیز سیٹی بجایں یا با آواز بلند لوگوں کو خبردار کریں اور اپنے سنیئر کو اطلاع کریں

۱۳۔ تمام اہم ٹیلی فون نمبر کی لسٹ جیب میں موجود ہونی چاہئے بلکہ فائر بریگیڈ کے نمبر یاد ہونے چاہئیں تا کہ آگ لگنے کی صورت میں فائر بریگیڈ کو مطلع کرے

۱۴۔ ASO/SSS سے آگ بجھانے کے تمام آلات کا استعمال کرنا سیکھیں آگ کی صورت میں فوراً مناسب فائر انگسٹنگویشر کا استعمال کریں

۱۵۔ آگ یا حادثہ کی صورت میں بجلی کے مین سوئچ کو فوراً بند کریں اور لفٹ کے استعمال کو روکیں، تمام لوگوں کو بلڈنگ کے ایمرجنسی ایگزیٹ سے باہر نکالیں اور بلڈنگ کو فوراً خالی کروایں اور پھر قیمتی سامان بھی باہر نکالیں، اگر کوئی دروازہ یا کھڑکی ایمرجنسی کی صورت میں توڑنا پڑے تو توڑ دیں

۱۶۔ جب بھی کوئی خطرہ دیکھیں جس میں آپ سمجھتے ہیں کہ کوئی حادثہ رونما ہوسکتا ہے تو اس کو روکنے کی کوشش کریں اور اسکی اطلاع فوراً سینئر افسر کو دیں

Methods of Extinguishing Fire

- **Cooling** the fuel by removing heat (e.g., by applying water).
- **Smothering** by cutting off oxygen supply (e.g., by applying foam, carbon dioxide).
- **Starving** the fire by removing the fuel.(e.g., stopping gas flow during a pipeline fire).
- **Inhibition** by stopping the chain reaction.(e.g., by applying dry chemical powder).

Above can be achieved by:

- **Beating**
- **Blanketing**
- **Use of Sand**
- **Use of water**
- **Foam**
- **Carbon Di-Oxide**
- **Dry Chemical Powder**

Points to Consider On Fire Detection

- **IDENTIFY – Common classes of fires.**
- **SELECT – Proper type of extinguisher.**
- **EVALUATE - when it is safe to fight.**
- **REACT - React against any Fire Hazard**
- **APPLY PASS - Method to operate a Portable extinguisher.**

FIRE DETECTION AND WARNING

Fire & Security department and area supervisor will be notified immediately when a fire is spotted. If a person discover a fire follow the 3 A's i.e. **Activate, Assist** and **Attempt**. When fire is detected:

- **Activate** the buildings fire alarm system or call others and phone to notify emergency services
- All personnel will be alerted and evacuated as needed.
- The person spotted should start shouting "Fire", "Fire".
- Blow the whistle repeatedly.
- Use emergency phone list and try to call the concerned staff and Fire brigade.
- Break the glass & Press the call point button for sounding bells or sounders.

FIRE DETECTION AND WARNING

- In some buildings there will be bells and sounders linked with Smoke detection system. Try to activate alarm & detection system sounders. The alarm must be audible in all areas.

- **Assist** those who are in immediate danger or who are incapacitated. Do this without risk to yourself.
- Do not run & Don't Use lifts. Help handicap.

Attempt to fight a fire only after the first two steps have been completed and you feel confident in yourself to do so. Always have an exit to your back in case you need to escape. Never attempt to fight a fire if there is a heavy smoke condition. Smoke can be extremely toxic and will reduce your visibility. Only fight small fires, no larger than the size of a small waste basket. Small fires will grow big very fast.

- The PASS method will be used to extinguish the fire by those employees who have been properly trained.
- On hearing the alarm area or building will be evacuated immediately
- Follow the exit signs

REACT

- The responsibility lies with security department to prevent and **React** against any Fire Hazard with the help of security Teams of different buildings / departments.

- **Upon discovering a fire or smoke:**
  - **R – Remove person in immediate danger.**
  - **E – Ensure doors are closed to confine the fire and smoke.**
  - **A – Activate the building Alarm.**
  - **C – Call the Fire & Security Department.**
  - **T– Treat all fires as dangerous. Evacuate and go to your assembly point if necessary.**

Fire Emergency principles

- R – Rescue
- E – Exposure
- C – Containment
- E – Extinguishment
- O – Overhaul

Must Know

- How to sound Alarm 
- The place where Fire extinguishers and water hose reel are kept.

- The location of main fire points and hydrant.
- Emergency telephone numbers.
- Class of Fire and which type of extinguisher to use.
- The escape route or emergency exit.

- How Fire Extinguishers operate.

DO's and Don't's

- Do not allow to use lift. Use only staircase.
- Do not run to fire zone without extinguisher.
- Close doors and windows as you leave the fire zone.
- Do not panicky.
- Do not open closed doors if smoke coming out.
- Do not switch on any electric device or Exhaust fan.
- Leave the danger area quickly. Do not waste time to collect personnel belongings.
- Always leave yourself an exit and ensure it is clear.
- Never attempt to fight a fire unless it is Safe to do so.
- Remember it can be dangerous to use the wrong extinguisher.

- Do not move in smoke covered area while standing. Only crawl.
- Do not jump out of window at high floor.

RISK ASSESMENT & USE OF Extinguishers

Risk Assessment Question	Characteristics of incipient stage fires or fires that can be extinguished with portable fire extinguishers	Characteristics of fires that SHOULD NOT be fought with a portable fire extinguisher (beyond incipient stage) - evacuate immediately
Is the fire too big?	The fire is limited to the original material ignited, it is contained (such as in a waste basket) and has not spread to other materials. The flames are no higher than the firefighter's head.	The fire involves flammable solvents, has spread over more than 60 square feet, s partially hidden behind a wall or ceiling, or can not be reached from a standing position.
Is the air safe to breathe?	The fire has not depleted the oxygen in the room and is producing only small quantities of toxic gases. No respiratory protection equipment is required.	Due to smoke and products of combustion, the fire can not be fought without respiratory protection.
Is the environment too hot or smoky?	Heat is being generated, but the room temperature is only slightly increased. Smoke may be accumulating on the ceiling, but visibility is good. No special personal protective equipment is required.	The radiated heat is easily felt on exposed skin making t difficult to approach within 10-15 feet of the fire (or the effective range of the extinguisher). One must crawl on the floor due to heat or smoke. Smoke is quickly filling the room, decreasing visibility.
Is there a safe evacuation path?	There is a clear evacuation path that is behnd you as you fight the fire.	The fire is not contained, and fire, heat, or smoke may block the evacuation path.

Use Of Fire Extinguisher- PASS Method

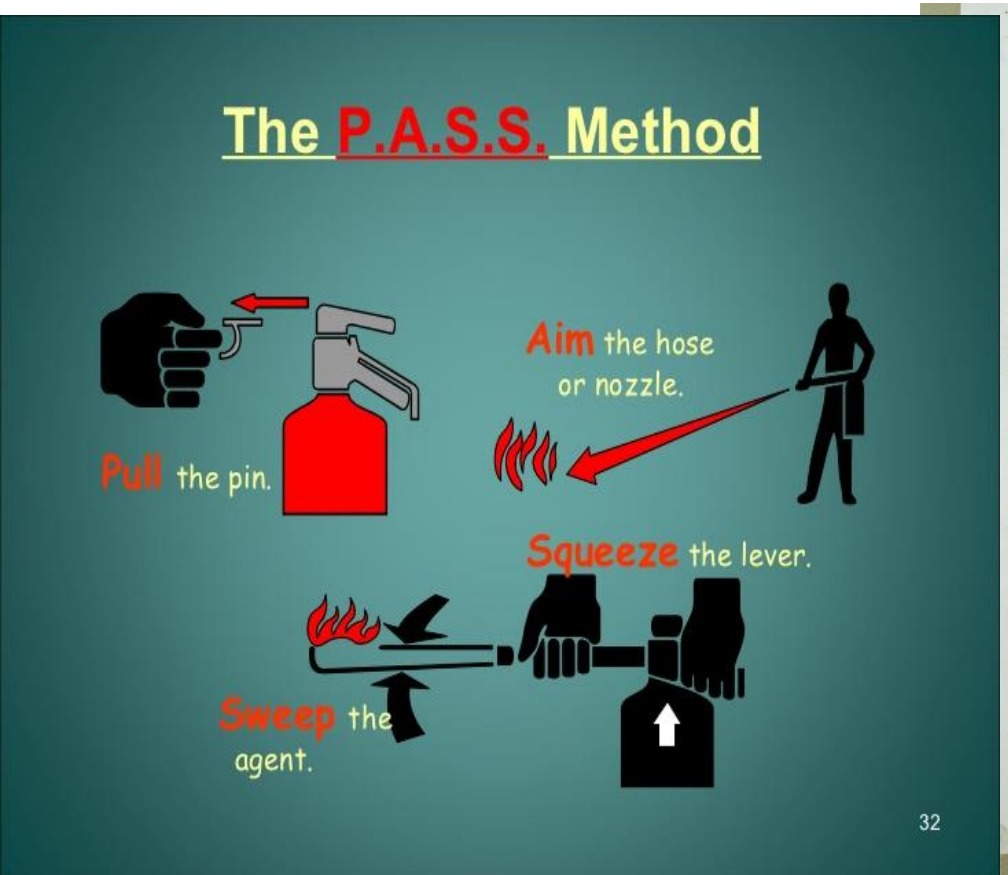
Remove the cylinder from wall hook and break the seal and:

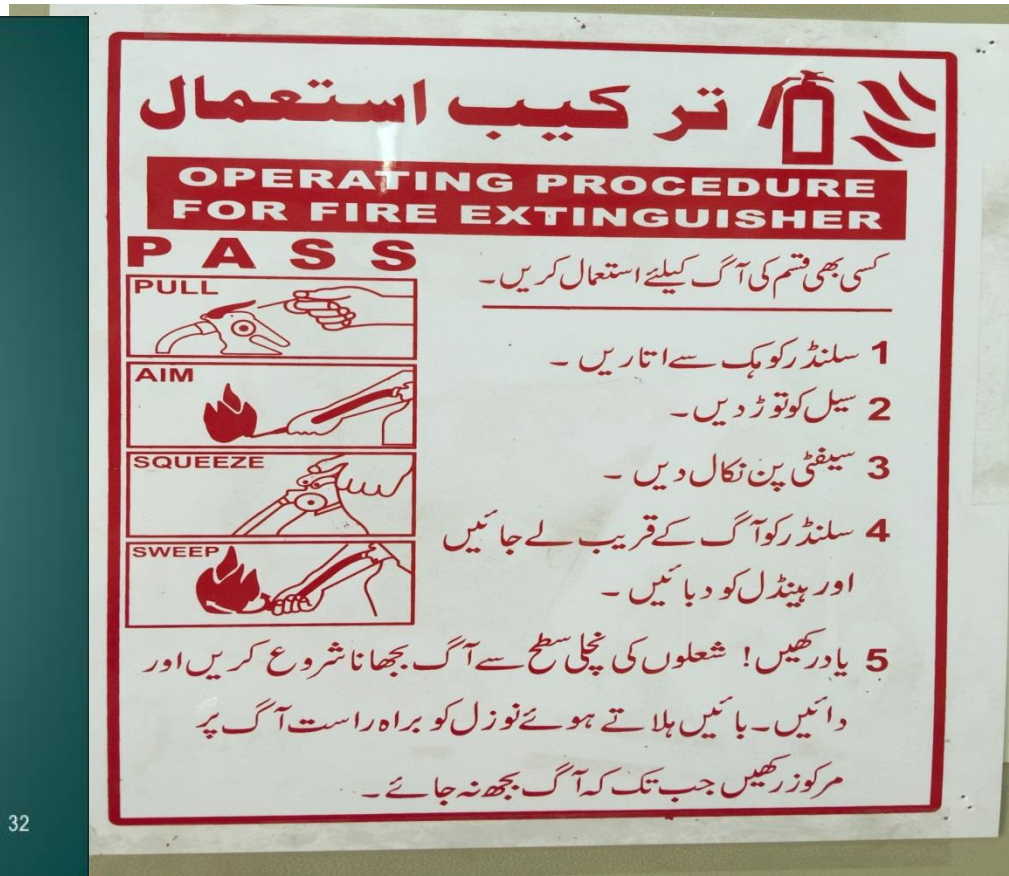
a. Pull the Pin.

b. Aim the nozzle at the bottom of fire.

c. Squeeze the lever to allow the agent to come out.

d. Sweep the nozzle from right to left or vice versa.





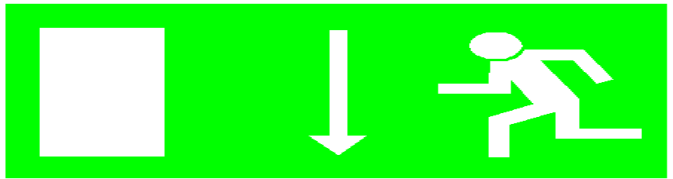
Other Fire Fighting Equipment

- Don't Use the Water to extinguish electricity cables fire, because Electrical Shock may pass through water.

- Don't Use the Water to extinguish Oil fire because water will go down and Oil will comes up.

EVACUATION

- If situation warrants or on orders of authorities begin evacuation
- Keep all emergency exit routes free from obstruction
- Use Your nearest available Fire Exit
- Crawl on four limbs if there is smoke. As smoke stays always above the ground.
- Keep wet cloth or mask on mouth, to save from choking due to inhaling of smoke & Poisonous gasses.
- Do not go back for personal belongings
- Do not use Lifts
- Do not re enter building till advised to do so
- Make your decision to leave before you are threatened. People do die in emergencies, often when they leave late\



Prevention

- Proper storage and handling of flammable and combustible materials will help prevent fires from occurring
- Prevent generation of Static electricity. It is important to dissipate this electric charge through grounding.
- Naked Flames be kept covered or switched off.
- **Inspections**. When justified by the size or nature of the operation, security services personnel or other assigned personnel must frequently inspect buildings, storage areas, employee quarters, and work areas.

Prevention

- Prohibit smoking and other sources of ignition. No-smoking signs should be posted in all regulated areas'.
- All work areas will be kept free of debris and other combustible materials.
- Do not burn waste materials inside the premises.
- Don't allow rubbish and waste to accumulate.
- Each fire extinguisher will be inspected periodically to make sure it is in its designated location and has not been tampered with or actuated.
- Each fire extinguisher will be clearly visible with nothing obstructing or obscuring it from view.

Prevention

- All Electrical equipment should be subject to Checking / Testing for faults by specialists.
- Extensions leads should be tested and ensure they are not being overloaded.
- Loose connections should be tapped.
- Post emergency telephone numbers and reporting instructions at the job site.

Making Fire fighting Teams

The Basic tasks of firefighting Teams include:

- **Fire suppression, rescue, fire prevention, basic first aid, and investigations.**
- **All Deans are responsible to nominate their office staff for these teams on yearly basis.**
- **Firefighting is further broken to extinguishing, ventilation, search and rescue, salvage, containment, mop up and overhaul.**
  - **Fire Prevention Team (Will take all measures to prevent fire)**
    - **Responsible to check any inflammable material inside building**
    - **Responsible to inspect fire fighting equipment of their building**
  - **Safety Team**
    - **In case of Fire they have to give alert to all. Call to all emergency numbers.**
    - **Switch Off the main Electric Panel,**
    - **Call fire brigade**
  - **Extinguish Team**
    - **This team should be trained & attempt to extinguish the fire.**
  - **Salvage**
    - **This team should help to people or handicapped to rescue.**
    - **Check for the trapped people.**
  - **Search & Rescue Team**
    - **Search and rescue the public. Conduct rescue using breathing apparatus and rescue lines**
  - **Evacuation & Medical Team**
    - **Responsible to mark evacuation route with signs & will manage evacuation.**
    - **Take care of injured & handicapped.**

State - Fire Extinguishers

EXTINGUISHER TYPE	Capacity	Quantity	Location	DOE 15-11-17	Rem
AFFF (Foam)	50 Ltr	02		15-11-18	
Dry Chemical Powder	50 kg	02		15-11-18	
Dry Chemical Powder	01 kg	02		15-11-18	
Dry Chemical Powder	06 kg	46		15-11-18	
CO2	03 kg	38		15-11-18	
CO2	06 kg	08		15-11-18	
CO2	35 kg	01		15-11-18	
HFC -236 Halotron	04 kg	46		15-11-18	
TOTAL		145			
Trolleys					
Buckets		12			
Fire Blankets					
Fire Alarm					
Fire Control Panel					
Smoke Detectors					
Fire Alarm – Manual Call point					
Fire Points		05			
Fire Hose Reel Point			SSK		
Water Hydrant					

Locations of Fire Extinguishers

S. #	Location	Qty	Type
1	Main Gate	05	ABC powder 03 ,C02 02
a	SAM Office	1	
b	ASO Office	1	
c	Main Guard Room	3	
d	Total	05	ABC powder – 03 C02 - 02
2	Admin Building	07	CO2 ,07
a	Gr Floor (Both Sides)	2	
b	1st Floor	2	
c	2nd Floor (Purchase)	3	
d	Total	07	CO_2 - 07
e			
f			
g			
3	Academic Building	05	ABC Powder ,02 CO2, 03
a	Basement	1	
b	Ground Floor (Left Side)	2	
c	First Floor (Left Side)	2	
d	Total	05	ABC Powder=02 CO2=03

S. #	Location	Qty	Type
4	IT Building	08	ABC Powder 08
a	Ground Floor (Both Sides)	2	
b	1st Floor (Both Sides)	2	
c	2nd Floor (Both Sides)	2	
d	3rd Floor (Both Sides)	2	
e	Total	08	ABC Powder 08
f			
g			
h			
5	Library Building	12	ABC Powder, 12
a	Basement (Right Sides)	2	
b	Basement (Left Side)	2	
c	Ground Floor (Left Side)	2	
d	Ground Floor (Right Side)	5	
e	(Ground Floor) AC Shop	1	
f	Total	12	ABC Powder, 12

Locations of Fire Extinguishers

S. #	Location	Qty	Type
6	Eng. Building	04	ABC Powder 04
a	Ground Floor (Right)	2	
b	Ground Floor (Left)	1	
c	Gr Floor Wksp (Left)	1	
d	Total	04	ABC Powder 04
7	Old Exam. Building	07	ABC Powder 01 Halatron 06
a	Basement (Exam Hall)	2	
b	Ground Floor (Right)	1	
c	1st Floor (Right Side)	3	
d	Top Floor (AC Shop)	1	
e	Total	07	ABC Powder 01, Halatron 06
f			
8	SAC	07	ABC Powder 04 CO2 03
a	Ground Floor (Both Sides)	2	
b	Ground Floor (Sitting Hall)	2	
c	Ground Floor (Kitchen)	1	
d	1st Floor (Both Sides)	2	
e	Total	07	ABC Powder 04, CO2 03

S. #	Location	Qty	Type
09	Generator Room	08	CO2 08
a	Main Hall (Entrance)	2	
b	Main Hall (Beside Generators)	2	
c	Main Hall (Operator Loc)	4	
d	Total	08	CO2 08
e			
f			
g			
h			
10	M.S.Bilding (Old)	05	ABC Powder 05
a	Main Entrance	5	
b	Total	05	ABC Powder 05
	TOTAL	122	
11	CHS	54	ABC Powder=16, Halation= 38
	G.TOTAL	145	

Emergency Phone Numbers

NAME	PHONE NO.
IOBM - Exchange	021-35090961-7 then Dial Extn **PTCL-Inquiry : 1217**
IOBM - Universal Number	111-00-2004 then Dial Extn
HOD Security Major Nadeem	03333451968, Extn 345, 021-35092663
Snr Security Offr Major Asad	03458252111 Extn 775
ASO Security Warrant Offr Faheem	03473546226 Extn 362
ASO Security Ms. Uzma	021-35090961-7 Extn 362
Security Supervisor Sub Arif	03226940643 , Extn 222 / 399 ,021-35092663
Security Supervisor Sub Iqbal	03092989114 , Extn 222 / 399 ,021-35092663
Security Supervisor Mr.Naseer Alam (Night)	03003586526 Main Gate Extn 222 & Gate 4 Extn 399
IOBM Area Police Station (PS-Ibrahim Haidri)	Exch #: 021-35090066, HM: Iftiqhar 0333-3016369 , SHO #: Sohail Akber: 0300-9207045
84 Wing Bhitai Rangers COD Company (IOBM Area)	Exchange: 021-34494201 – 0310-8484047 Adjutant: DSR Masood 03003210110 Wing Comd: Lt.Col.Fawad Raza 0316-1238484 Second In Comd: Maj.Mumtaz 0345-3777873 DSR: (Area) Asghar: 0313-9996815
Help Lines	Police 15, Rangers 1101, Army-1135, Traffic 1915, CPLC 1102
Hospital	Indus: 021-35112717 , NMC: 111-222-662, Civil: 99215740, 99215960, Agha Khan: 34930051 Extn 1091
Ambulance	Aman 1021 , Chipa 1020, Edhi 115
Traffic Police Ibrahim Haidri	SO Ashraf Mughal: 0300-2208234, Majeed: 0302-9256928
Utilities	KE: 118, Electrician Waheed: 0333-3595473 , Nafees: 0333-2353761, Admin Arif Sh: 0300-2461746, Railway: 117
Fire Brigade Korangi Industrial Area	16, 021-35066260-1, Landhi: 35015888-988
Fire Brigade-Central Fire Station	CFO: 021-37773252, 99215007-8, 37724891-2
Bomb Disposal Squad (021-99212690)	39212680, 39212690, 39212646,39212655,32416626, 37722645
CPLC / CM Complaint Office	CPLC Korangi: 35114444, DSP : 0300-3060476,
Civil Defense	32412222, 32415111

DEMO

How Fast the Fire Is

Fire Eqpt pics

Fire Detector

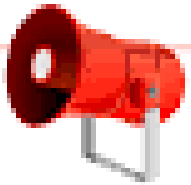
An automatic fire detector is designed to detect the unwanted presence of fire by monitoring environmental changes associated with combustion.

Fire Detector

Top level fire protection.
An automatic fire-detector is designed to detect the unwanted presence of fire by monitoring environmental changes associated with combustion.

Fire Alarm

A fire alarm notification appliance is an active fire protection component.



Horn Loudspeakers

Are a very effective way to broadcast messages using a low powered amplifier.

Fire Bucket

A fire bucket is a bucket filled with water or sand which is used to prevent or extinguish fires.

Fire Extinguisher

A fire extinguisher, flame extinguisher, or simply an extinguisher, is an active fire protection device used to extinguish or control small fires, often in emergency situations.