



Fire Angels India

Fire Safety Technical Education

Supported By



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WELCOME TO “FIRE SAFETY TRAINING MODULE”





THE FIRE TRIANGLE`



Take away any of these things and the fire will be extinguished

Three things are required at the same time to produce fire - Together they produce the chemical reaction that is called FIRE.

1. Enough OXYGEN to sustain combustion
2. Enough HEAT to reach ignition temperature
3. Some FUEL or combustible material





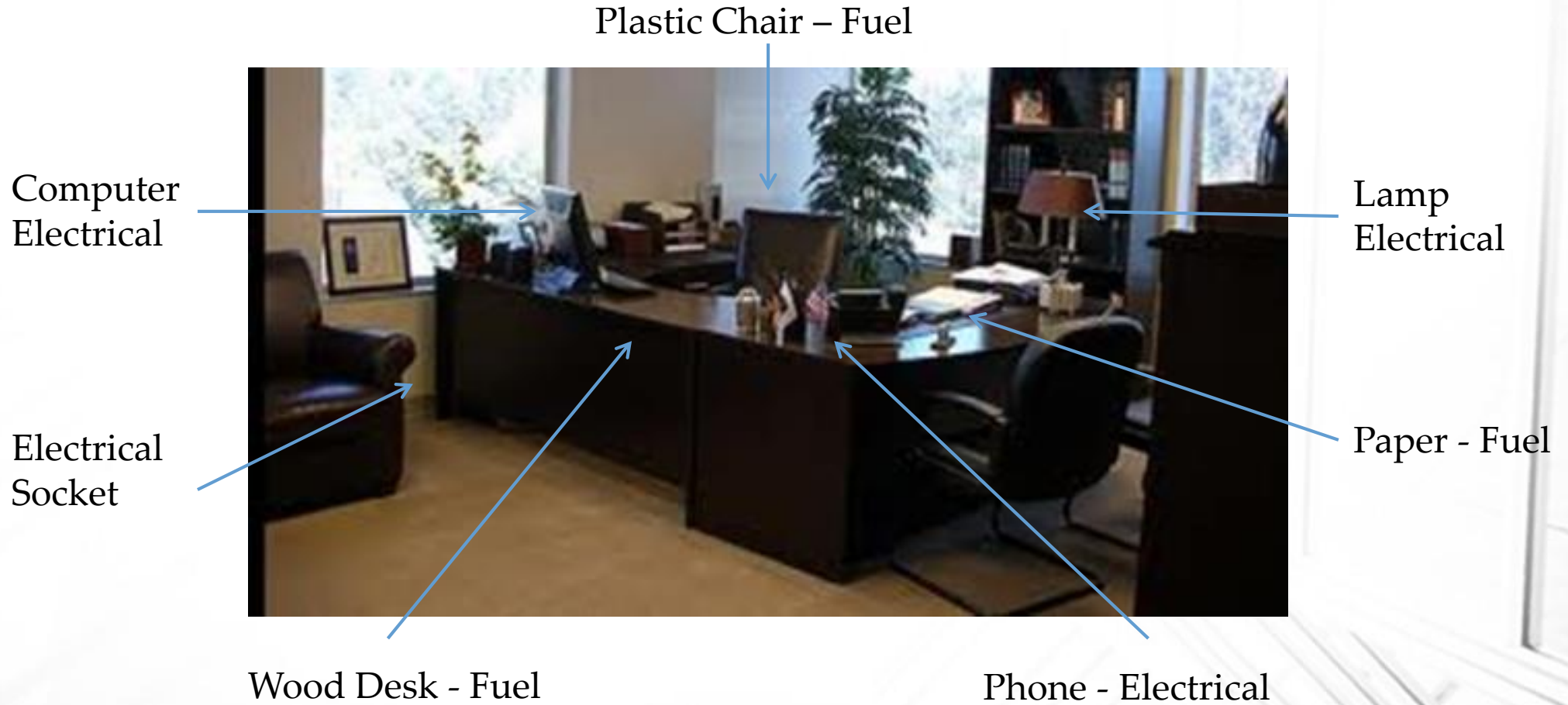
FIRE CLASSIFICATIONS

- Fire is classified according to the type of fuel that is burning. If you use the wrong type of extinguisher on the wrong class of fire, you might make the matters worse. It is very important to understand the five different fire (fuel) classifications:
 - **Class A:** Wood, paper, cloth, trash, plastics - solids that are not metals.
 - **Class B:** Flammable liquids - gasoline, oil, grease, acetone.
 - **Class C:** Flammable Gas Fires and Electrical started fire.
 - **Class D:** Metals, potassium, sodium, aluminum, magnesium. Requires special extinguishing agents.
 - **Class K:** Kitchen fires . Used in commercial cooking operations





FIRE PRONE AREAS





Fire related deaths in 2011 world wide

LOSS OF LIVES DUE TO FIRE

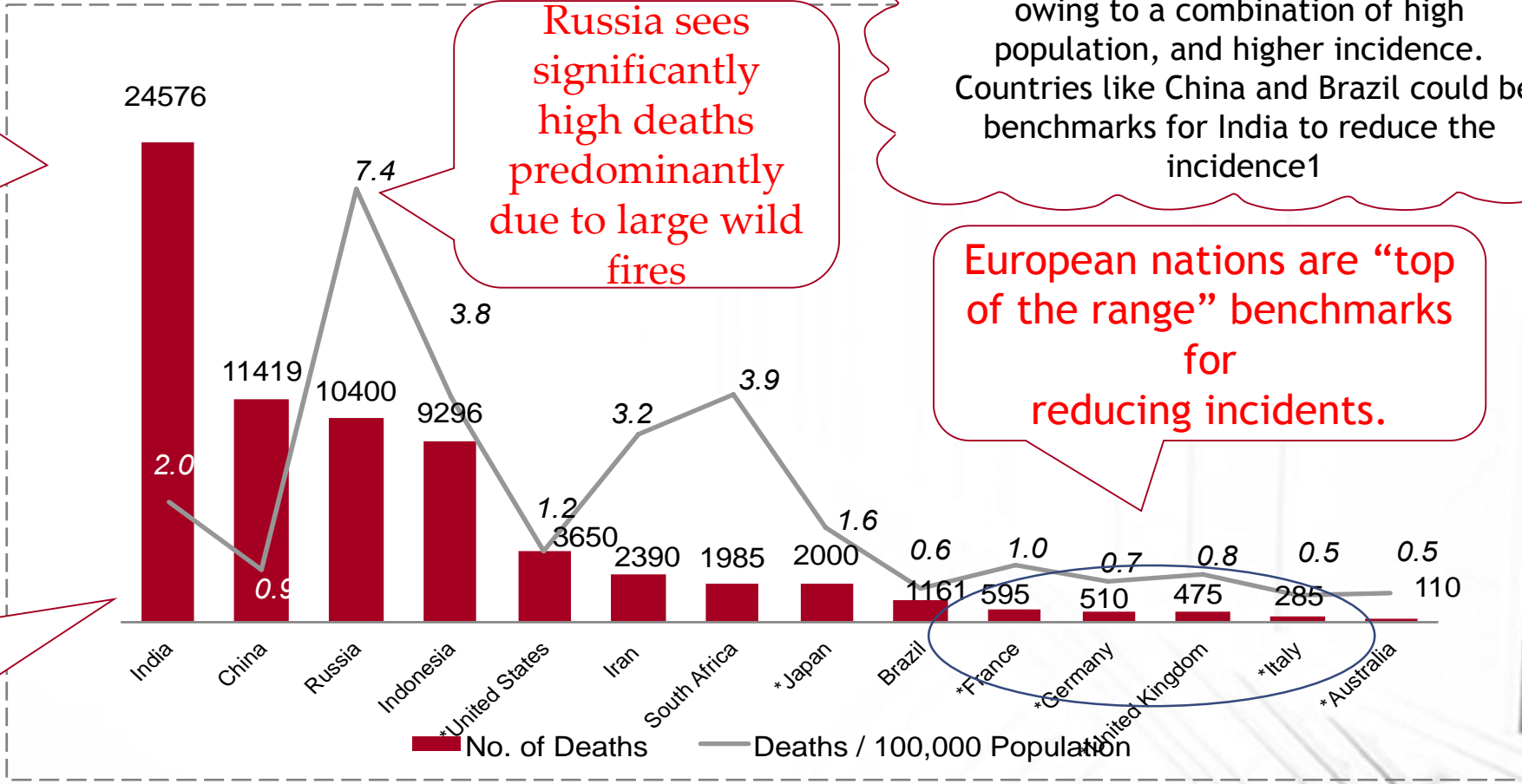
India faces one of the highest rate of deaths due to fires in the world

Despite a population higher than India, China loses fewer lives to fire

Russia sees significantly high deaths predominantly due to large wild fires

India tops the list in fire related deaths owing to a combination of high population, and higher incidence. Countries like China and Brazil could be benchmarks for India to reduce the incidence¹

European nations are “top of the range” benchmarks for reducing incidents.

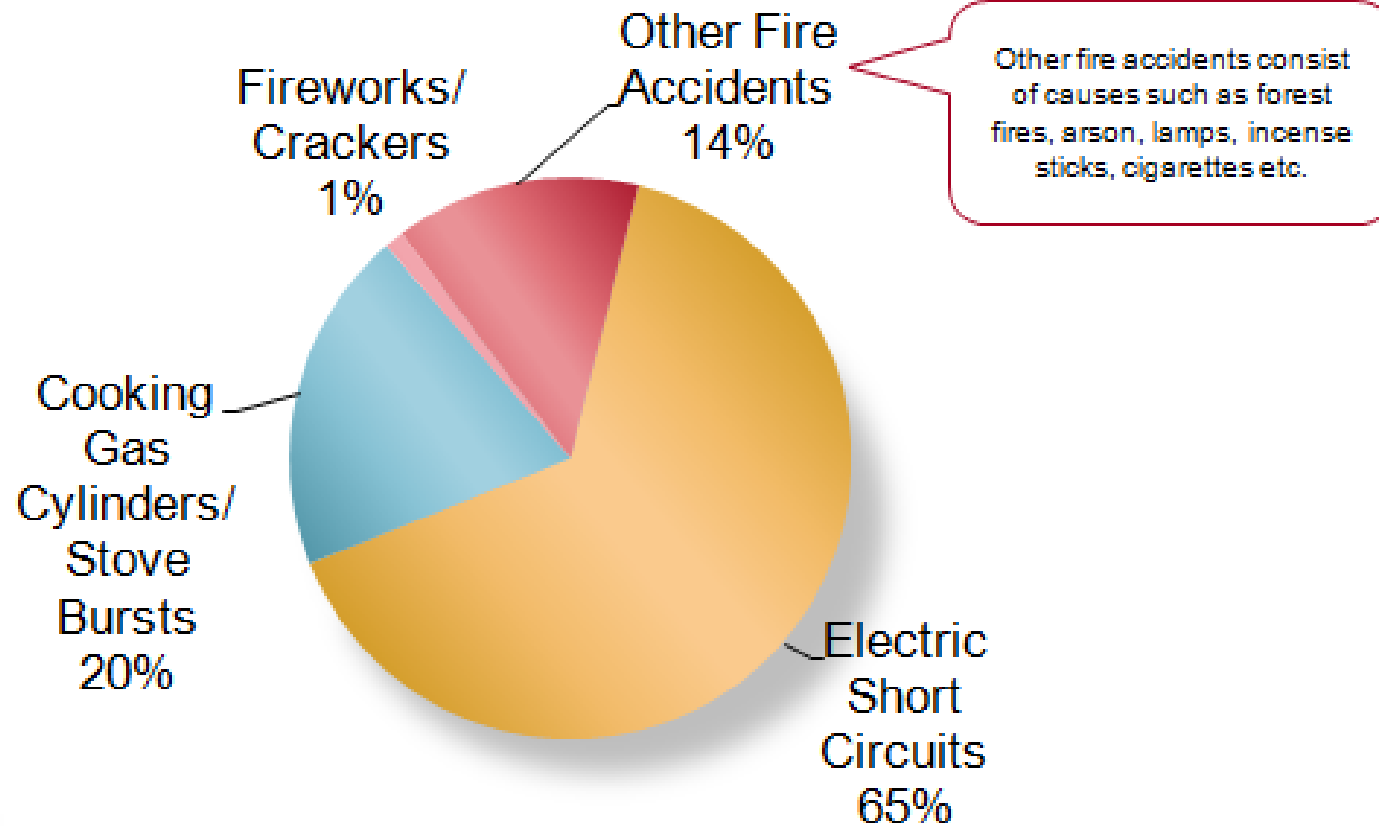


* Statistics for 2008 from- The Geneva Association World Fire Statistics 2011, Source: National Crime Records Bureau, NFPA 2010, The Geneva Association- World Fire Statistics 2011, Avalon Consulting Analysis





CAUSES OF FIRE





FUEL CLASSIFICATIONS

Class A: Non Metals



- Wood, paper, cloth,
- trash, plastics- solids

Class B: Flammable liquids



- Gasoline, Kerosene, Petrol,
- Diesel, lubricants, oil,
- grease, acetone etc.





FUEL CLASSIFICATIONS

Class C: Includes



- flammable gases,
- electrical started fire

Class D: Metals Fire



- potassium, sodium, aluminum,
- Magnesium

Requires special extinguishing agents.



Materials: Combustible Metals

- Magnesium
- Titanium
- Zirconium
- Potassium
- Lithium
- Calcium
- Zinc



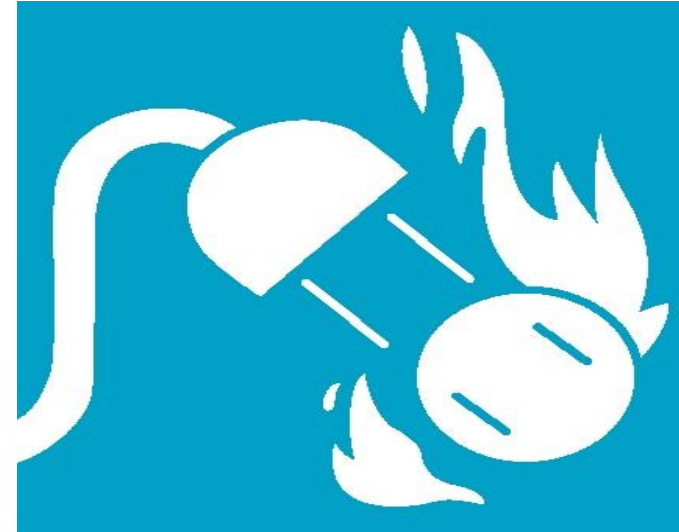


FUEL CLASSIFICATIONS

Class E: Electrical fire, (Internationally included in C)



CLASS F: Kitchen Fire(Food)





TYPES OF FIRE EXTINGUISHERS

Different types of fire extinguishers are designed to fight different classes of fire:

- ABC Dry Chemical Powder (MAP Type)- UL Listed
- Carbon Dioxide (Co2)
- Clean Agent HCFC
- Kitchen Fire
- Mechanical Foam (MF)
- Water Type
- Metal fire- Ex- Ammunition Fire
- Ceiling Mounted (Modular) – Automatic but Fixed
- APFE- Automatic and Portable Fire Extinguisher





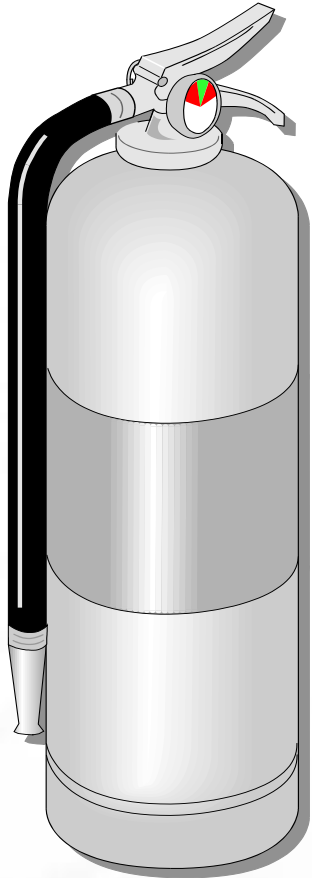
FIRE EXTINGUISHERS APPLICATION AS PER FIRE CLASSIFICATION

- Dry Chemical Powder - ABC
- Carbon Dioxide (Co2) – Class B & C
- Clean Agent HCFC – B, C Specially for server room
- Kitchen Fire – Specially for kitchen
- Mechanical Foam (MF) – A & B
- Water Type – only for Class A
- Metal fire Extinguisher - Only for D Class
- Ceiling Mounted (Modular) – ABC
- APFE - ABC





TYPES OF FIRE EXTINGUISHERS



A Trash Wood Paper



B Liquids Grease



C Electrical Equipment



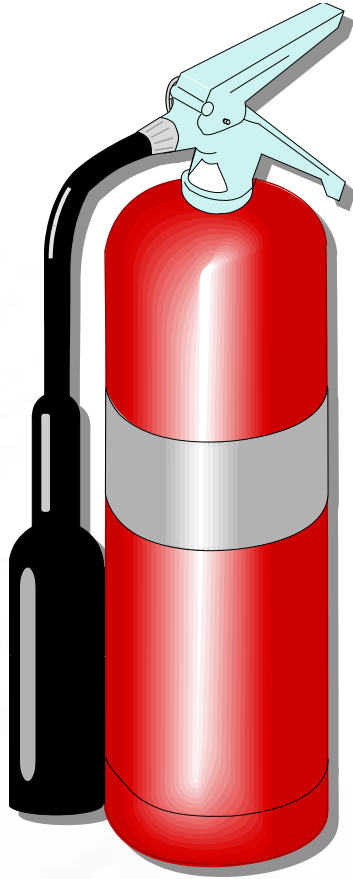
WATER TYPE

- Class “A” fires only
- 2.5 gal. water (*up to 1 minute discharge time*)
- Has pressure gauge to allow visual capacity check
- 30-40 ft. maximum effective range
- Can be started and stopped as necessary
- Extinguishes by *cooling* burning material below the ignition point





TYPES OF FIRE EXTINGUISHERS



A Trash Wood Paper



B Liquids Grease



C Electrical Equipment



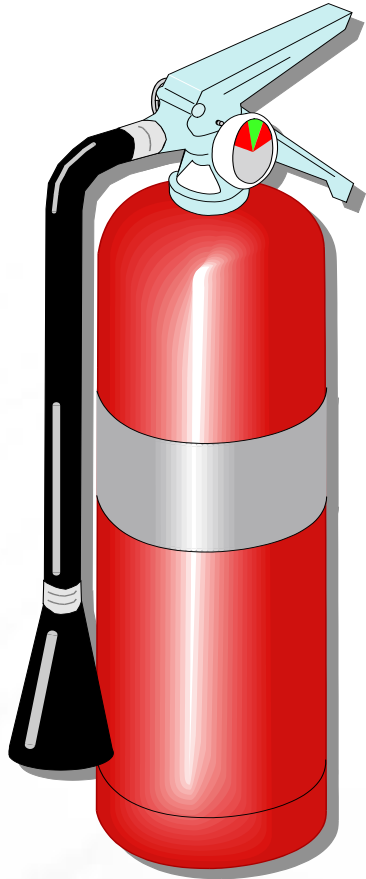
CARBON DIOXIDE (CO₂)

- Class “B” or “C” fires
- 2.5-100 lb. of CO₂ (8-30 seconds discharge time)
- Has NO pressure gauge--capacity verified by weight
- 3-8 ft. maximum effective range
- Extinguishes by smothering burning materials
- Effectiveness decreases as temperature of burning material increases





TYPES OF FIRE EXTINGUISHERS



A Trash Wood Paper



B Liquids Grease



C Electrical Equipment



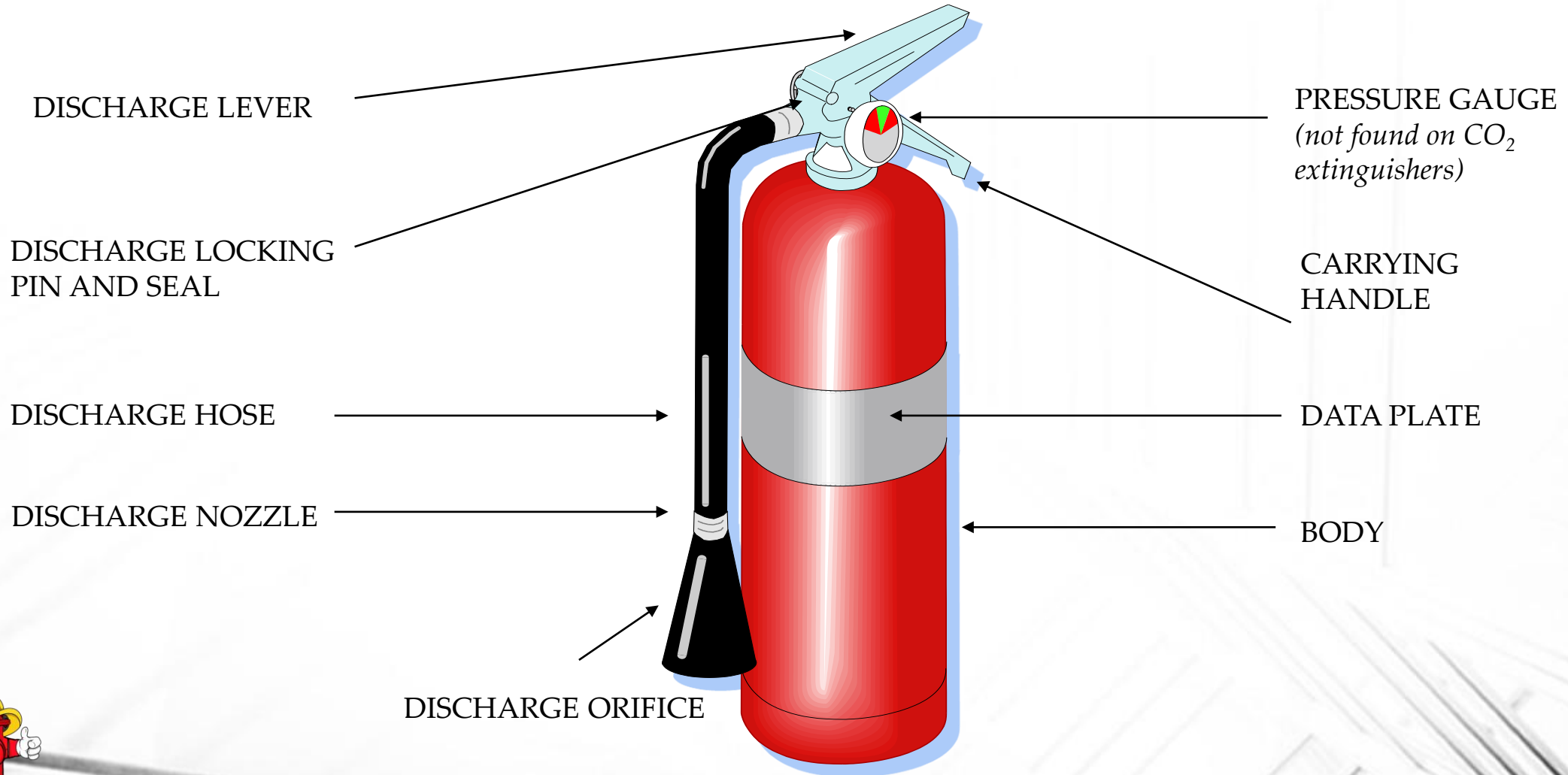
DRY CHEMICAL

- Class “A”, “B”, or “C” fires
- 2.5-20 lb. dry chemical (*ammonium phosphate*) 8-25 seconds discharge time)
- Has pressure gauge to allow visual capacity check
- 5-20 ft. maximum effective range
- Extinguishes by smothering burning materials.





FIRE EXTINGUISHERS ANATOMY





HOW TO USE A FIRE EXTINGUISHER

It's easy to remember how to use a fire extinguisher if you remember the acronym **PASS**:

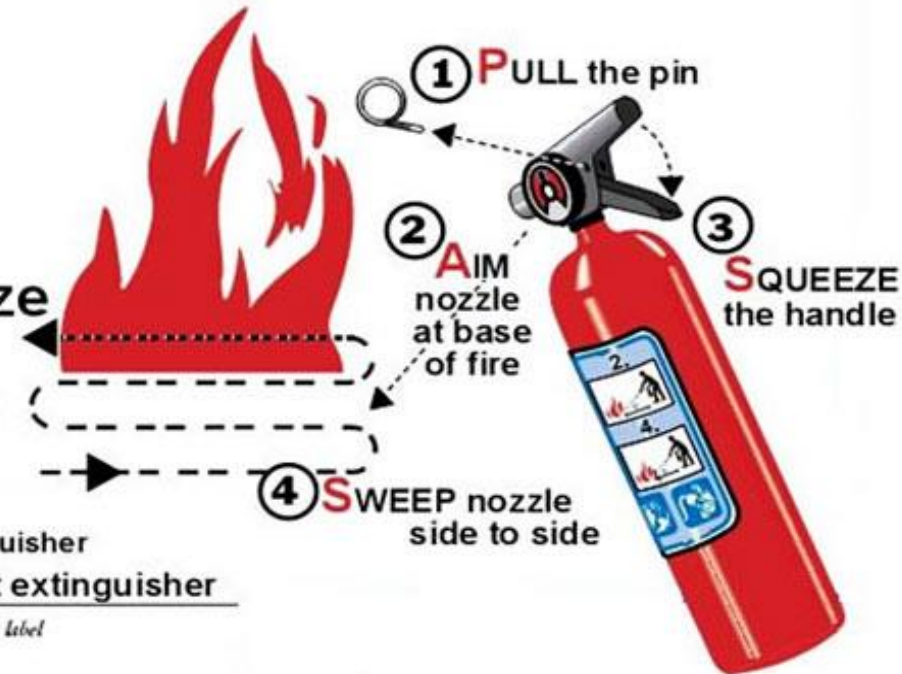
To operate an extinguisher:

Pull

Aim

Squeeze

Sweep



Know your extinguisher

Use the correct extinguisher

(Check your own extinguisher's label for detailed instructions.)



AUTOMATIC & PORTABLE FIRE EXTINGUISHER



- Automatic and Portable Fire Extinguisher
- Weight: 1 Kg and 2 Kg
- Types – DCP and MF
- Extinguishing Agent – MAP 90 or AFFF Foam





SPECIFICATIONS OF APFE

- Automatic Activation
- Light in weight
- Compact in size
- Mobile
- Extremely easy to use
- Negligible installation
- Non Toxic
- Lightning fast in operation
- Non Hazardous
- Bio-degradable
- Ozone friendly
- 0% false alarm
- Electrically non Conductive
- Gives an alarm alerting you of danger
- Low clean up required
- Not harmful to humans, animals & environment
- Works on fires inside and outside
- No wiring and ducting required
- Designed to work automatically and manually
- No maintenance required
- Any age group can activate
- 5 Years warranty



UNIQUE FEATURES OF APFE

- It operates automatically when fire flames touch the apparatus
- It activates and covers the area with dry extinguishing Mono Ammonium Phosphate (MAP) powder and cuts oxygen thereby extinguishing the fire in few seconds
- It's a unique product - Effective for A, B & C types of Fire
- No manual intervention required to operate it
- No maintenance during its life cycle of 5 years
- Easy to use
- Easy to install - Compact and Light weight 1kg and 2kg
- Eco friendly - Harmless to Humans & Animals.
- It can be thrown into the fire to make way for evacuation also





APPLICATIONS OF MANUAL CYLINDERS

- Staircases
- Corridor
- Near lift area
- UPS rooms
- Near transformer
- Exit gate



APPLICATIONS OF APFE

- In door Out Door Electrical Panels
- Gen-Set
- Car Bonnet
- Kitchen
- Unmanned Area Like Ware Houses, LT, HT electric rooms, UPS rooms
- Near transformer area
- Battery Rooms





WHERE TO INSTALL APFE



Car Engine



Outdoor Electric Board



Indoor Electric Board



Generator



Kitchen



Electric Panel





WHERE TO INSTALL CEILING MOUNTED



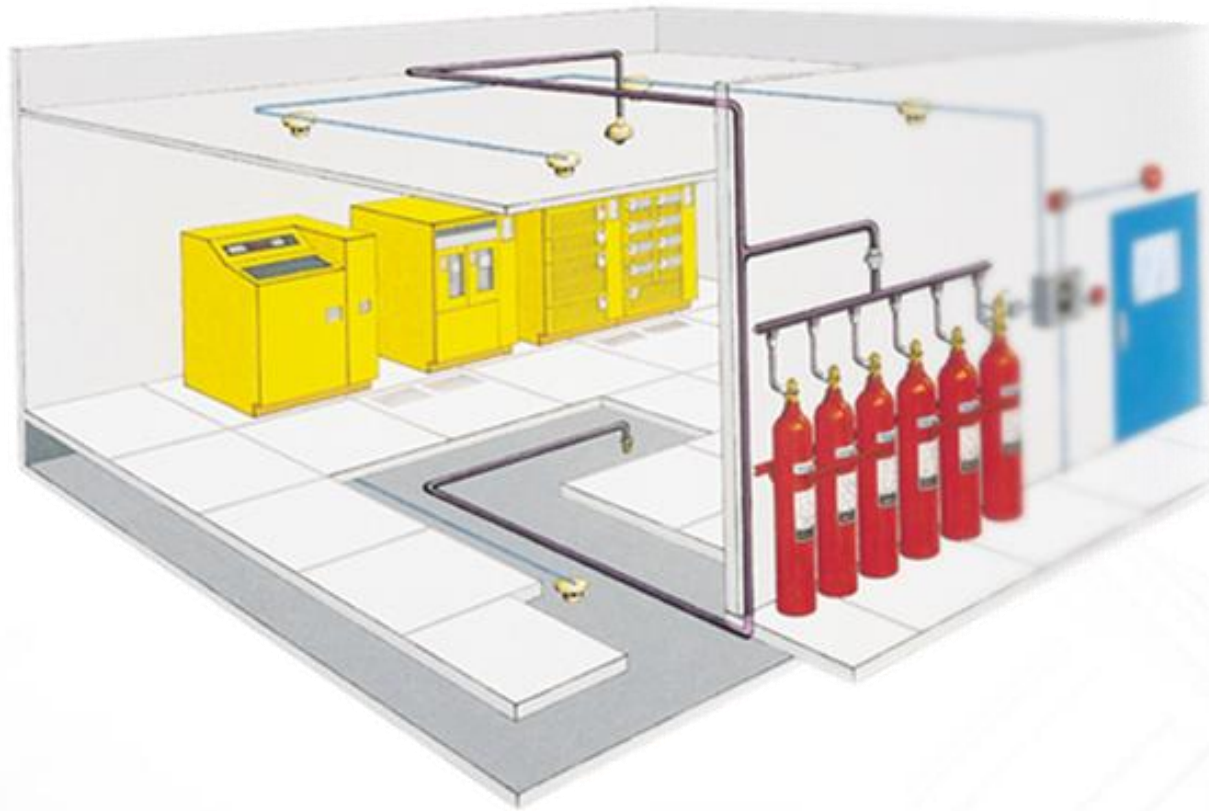


WHERE TO INSTALL MANUAL CYLINDERS





GAS FLOODING SYSTEM





GAS FLOODING SYSTEM

- Heavy costing
- Maintenance required
- Heavy installation cost
- Need to do Monthly checkup
- Need to change battery in every six months.





FIRE SAFETY SURVEY

A **fire safety Survey** is an examination of the premises to ascertain how the premises are being managed with regards to **fire safety**. It is good practice to document your **fire safety** measures and during the **audit** our engineers will fill the **Fire Risk Assessment** of customer's premises and based on that report, we suggest the kind and number of fire extinguishers in that premises to make it fire safe.

Some important points to be noted at the site :-

- To identify unsafe acts and unsafe conditions
- Note hazardous area like electrical panels, gen set, etc.
- Check existing Fire Extinguisher's pressure gauge
- Note Fire Extinguisher rifting date
- Visual inspection should be done on Fire Extinguishers on site
- Due to corrosion, rusting if any damage is found, it should be suggested to be replaced rather than refilling





FIREFIGHTING DECISION CRITERIA

- Know department emergency procedures and evacuation routes
- Know locations of extinguishers in your area and how to use them
- Always sound the alarm regardless of fire size
- Avoid smoky conditions
- Ensure area is evacuated

- Don't attempt to fight unless:
 - Alarm is sounded
 - Fire is small and contained
 - You have safe egress route (can be reached without exposure to fire)
 - Available extinguishers are rated for size and type of fire
 - If in doubt, evacuate!

- “DON'T ATTEMPT TO FIGHT UNLESS YOU ARE TRAINED”



LET US PLEDGE TO MAKE INDIA FIRE SAFE



Become a **Fire Angel**



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www.instagram.com/FireAngelsIndia



<https://www.fireangelsindia.com>



<https://www.youtube.com/channel/UCNQsAOnr9IDXJGS1Tt8tSPQ>

