

Lecture 3

Industrial Safety and Fire Risks

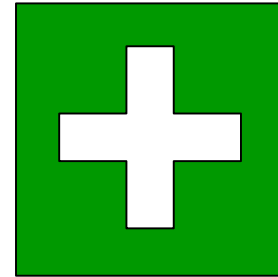
Personal Protective Equipment (PPE):

- ☐ Personal Protective Equipment (PPE) offers protection from one or more risks to a person's health or safety.
- ☐ The personal protective equipment at work regulations require that (PPE) is supplied and used whenever risks to health and safety cannot be controlled in other ways. And it must:
 - ☐ Ensure your PPE is appropriate to your job/task.
 - ☐ Check that it's in good condition.
- ☐ **PPE Examples:**
 - ☐ Hard Hat (Helmet).
 - ☐ Safety Glasses.
 - ☐ Safety Boots.
 - ☐ HI-VIZ Clothing.

Safety Signs:



Blue/White = Must Do



Green/White = Safety Information



Red/White = Must NOT Do



Yellow/Black = Health & Safety Hazard Warning

Safety Signs:

Blue + White = Mandatory or Must Do



Overalls Must Be Worn



Safety Gloves Must Be Worn



Ear Defenders Must Be Worn

Safety Signs:

Blue + White = Mandatory or Must Do



Foot Protection Must Be Worn

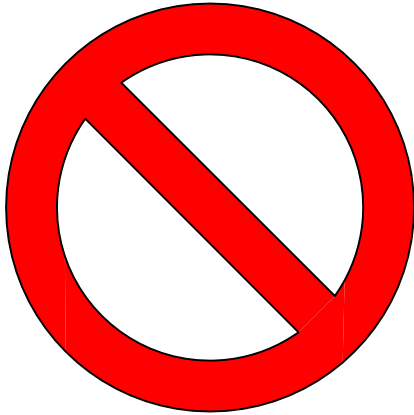


High Visibility Vest Must Be Worn



Safety Helmet Must Be Worn

Safety Signs:



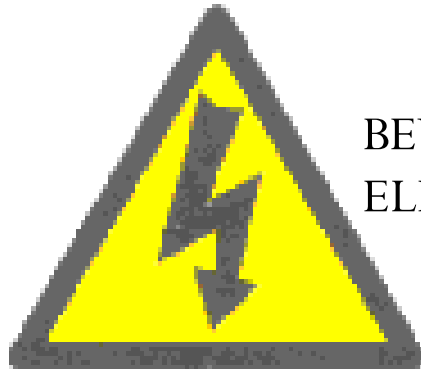
**Any Red and White sign with a line through means:
“Not Allowed or Must Not”**



NO SMOKING

Safety Signs:

Yellow + Black = HAZARD WARNING



BEWARE:
ELECTRICITY



TOXIC



EXPLOSIVE

Safety Signs:

Yellow + Black = HAZARD WARNING



FLAMMABLE SUBSTANCE



WARNING - LASER BEAMS

Safety Signs:

Green + White = SAFETY Information



Safe Route to Fire Exit



First Aid Kit

The Fire Triangle:

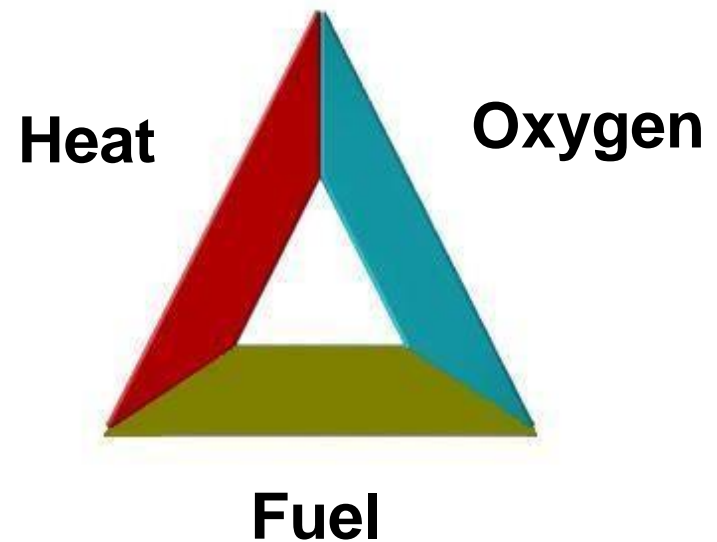
- There are 3 elements that must be present for a fire to burn; Fuel, Heat and Oxygen.

- All 3 are needed for a fire, so if

- you take one away the fire will not burn.

Oxygen is almost always present as we need it to breathe. Therefore we only have control over 2 elements.

The rule is to never mix fuel and heat.



Fire Risks:

□ Destructive Risk:

Destructive Risk:

Destructive meant danger is what happens in the destruction of buildings and facilities as a result of fire.

□ The difference in the intensity of destruction depends on the contents of the building materials



Fire Risks:

□ Exposed Risk:

- The risks to the sites near the fire place so-called external risk.
- Doesn't require that there be direct contact between the fire and the site at risk.



Some Causes of Fire:

Improper Storage.

Housekeeping.

Machinery.

Cleaning Supplies.

Construction.

Electricity.

Unattended Cooking.

Careless Smoking.

Flammable Liquids.

Combustible Liquids.

Some Causes of Fire:

IMPROPER STORAGE



HOUSEKEEPING



Some Causes of Fire:

MACHINERY



CLEANING SUPPLIES



Some Causes of Fire:

CONSTRUCTION

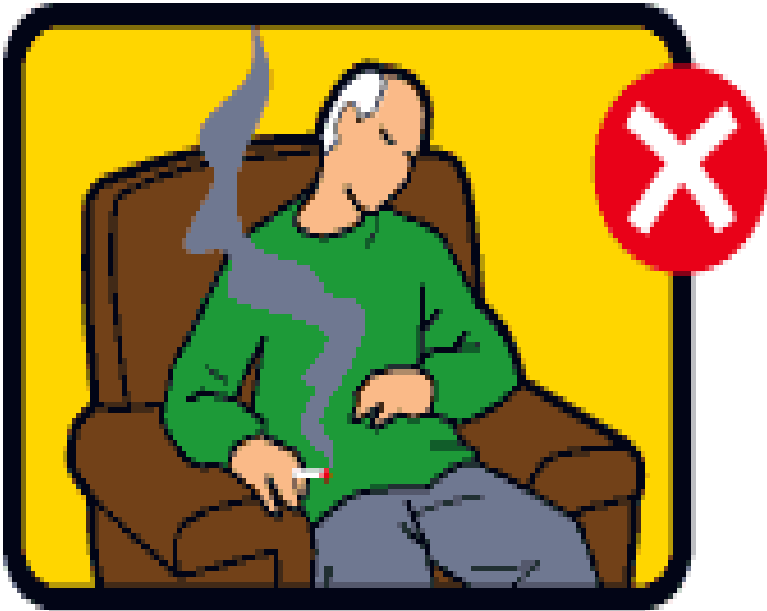


ELECTRICITY



Some Causes of Fire:

CARELESS SMOKING



UNATTENDED COOKING



Classification of Fire:

CLASS A

Ordinary Combustibles

This includes fuels such as wood, paper, plastic, rubber, and cloth.



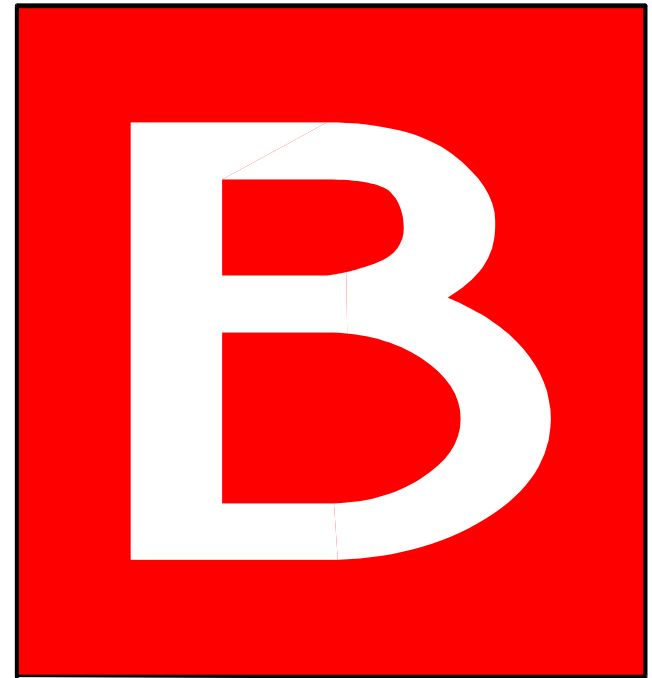
Green Triangle

Classification of Fire:

CLASS B

Flammable and Combustible Liquids and Gases

This includes all hydrocarbon and alcohol based liquids and gases that will support combustion.



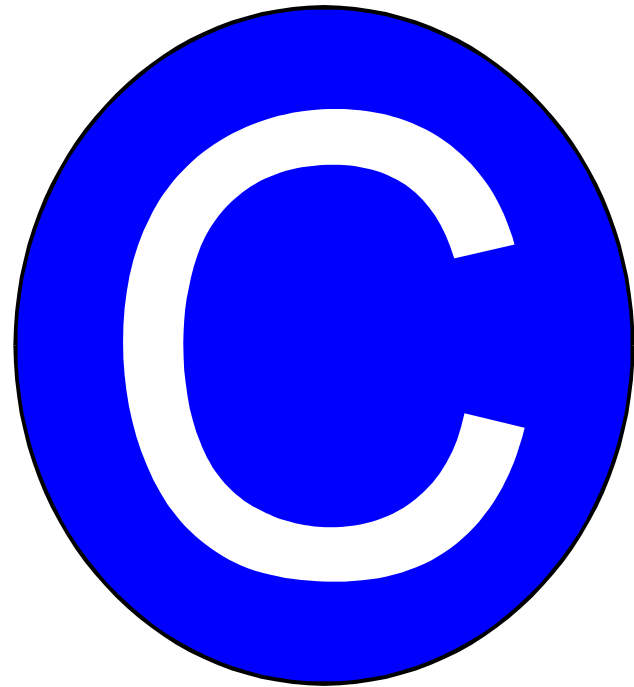
Red Square

Classification of Fire:

CLASS C

Electrical

This includes all fires involving energized electrical equipment.



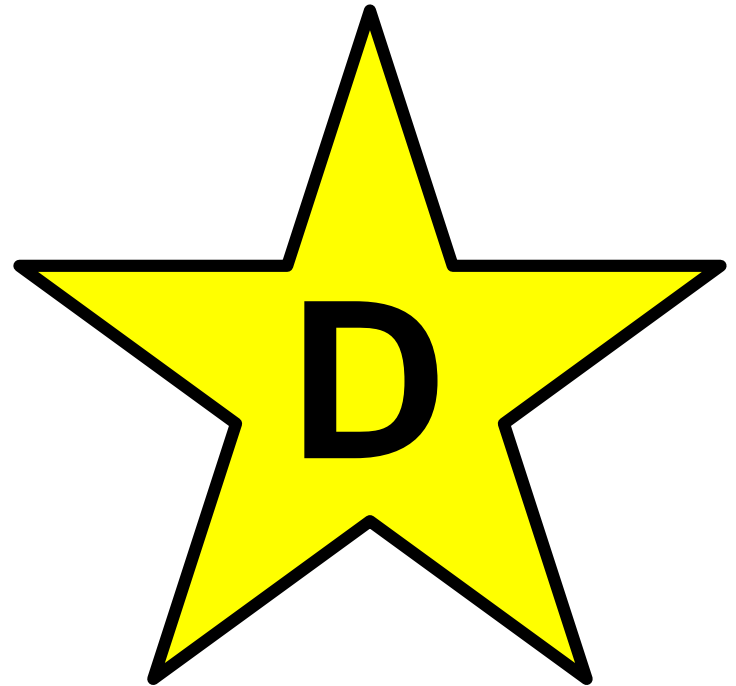
Blue Circle

Classification of Fire:

CLASS D

Combustible Metals

Examples of these types of metals:
zirconium, titanium, potassium,
and magnesium.



Yellow Star

Water Extinguishers:

- Red body.
- Suitable for wood fires, furniture and paper etc.
- Not suitable for combustible liquids, Oil, Petrol, cooking fats, etc.
- Not safe to use on fires involving electricity.
- Extinguishes by cooling.



Foam Extinguishers:

- Red body with cream label.
- Suitable for Flammable liquids, petrol, solvents etc.
- Not suitable for use on fires involving Electricity.
- Extinguishes by cooling and sealing the surface of a burning liquid.



Powder Extinguishers:

- Red body with blue label.
- Safe to use on any type of fire.
- Works by chemically Interfering with the combustion reaction.



Carbon-dioxide (CO₂) Extinguishers:

- Red body with black label.
- Safe to use on any type of fire.
- Safe to use on fires involving electricity.
- Extinguishes by reducing oxygen levels and cooling.



Fire Safety Signs:



Press here to sound the
fire alarm



Fire hose reel