

Burlington Fire Department

215 S Church Street, Burlington, NC 27215

336-229-3132

Fire Extinguishers



Objectives



- Understanding Fire
- Classes of Fire
- Types of Extinguishers
- Extinguisher Ratings
- Inspection/Maintenance
- Proper use



Theory of Fire



- Three things must come together to have a flame
 - Fuel/vapor
 - Heat
 - Oxygen
- Combustible products are heated until they produce a vapor



Theory of Fire

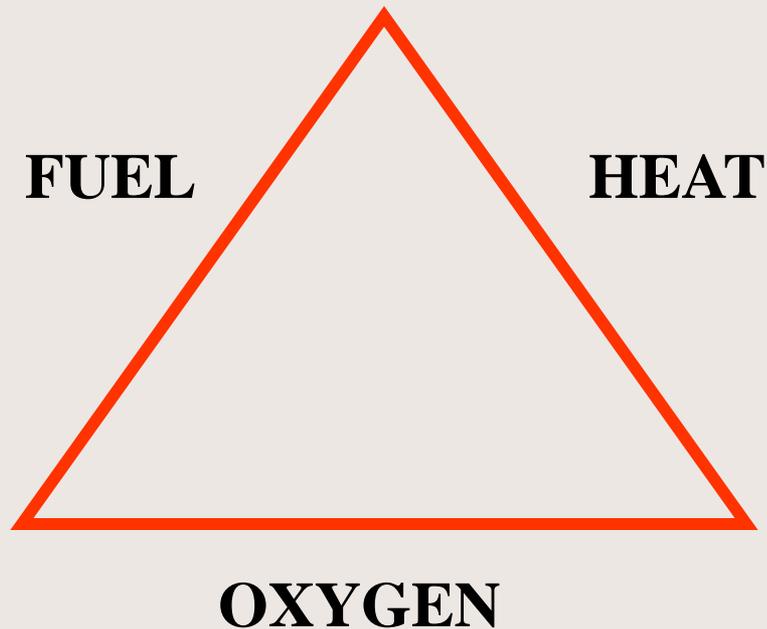


- The vapor is what actually burns
 - This is why gasoline is dangerous, the vapor is always present in our climate
 - Diesel Fuel is more difficult to light because you have to heat the fuel to produce a vapor

Theory of Fire



- Fire Triangle



Theory of Fire



- When you use a fire extinguisher you are removing one of the things in the Fire Triangle
 - Some extinguishers cool the product on fire
 - Some remove or displace oxygen around the fire
 - Some displace the vapor
 - Some do a combination of the above
- When do you use a fire extinguisher?
 - Use an extinguisher when a fire begins or during the incipient stage of fire

Incipient Stage of Fire



The first or beginning stage:

- Slightly over 100 degrees
- Rising hot gases
- Rising air approximately 20% Oxygen (normal Oxygen levels are 21%)

Incipient Stage of Fire



- The conditions are still clear
 - You can see what you are doing
 - The temperature in the room is still low
 - Most importantly, you can still breath because of low smoke levels
- If you encounter anything other than this....

GET OUT!

Class 'A' Fires

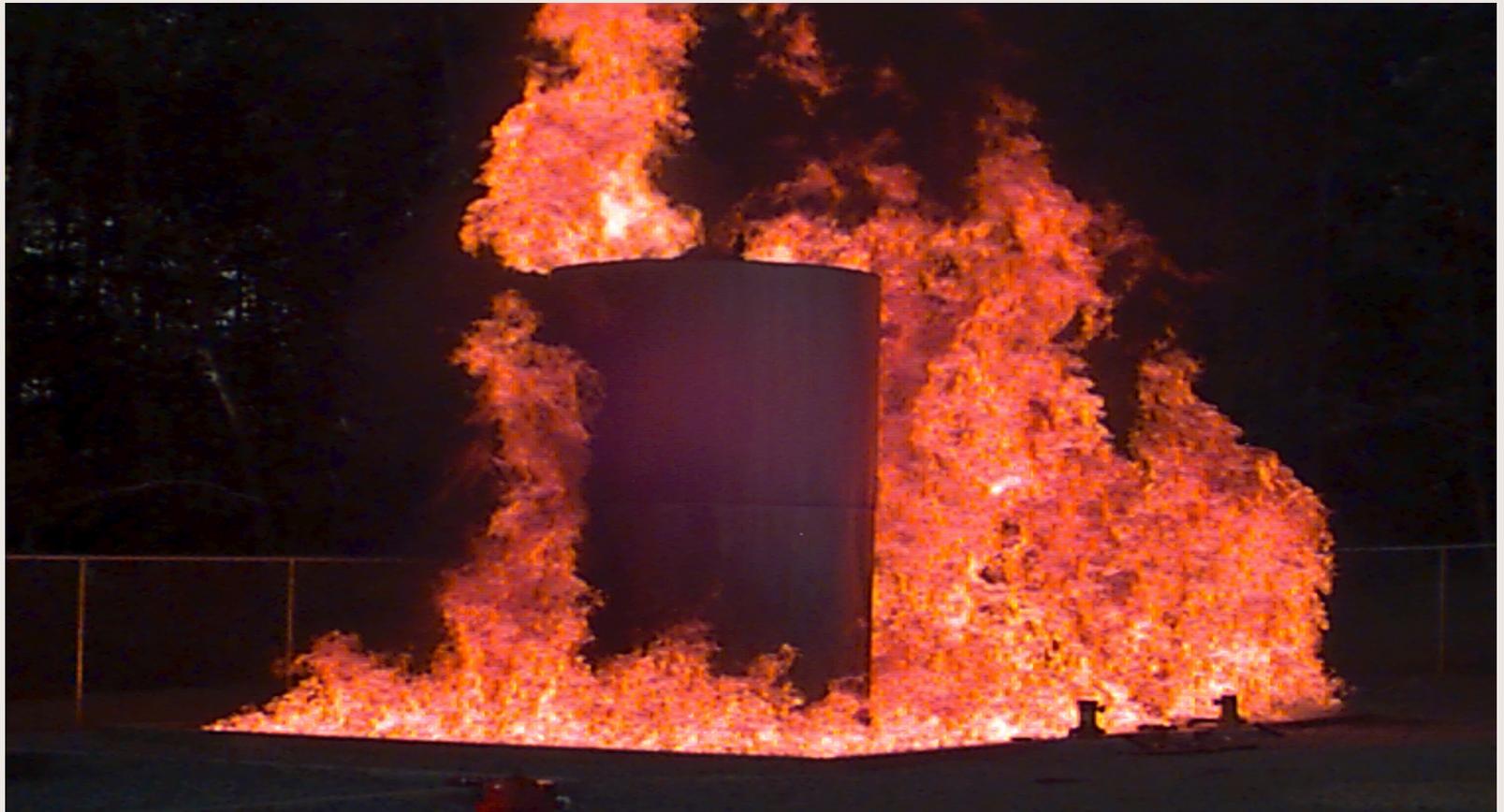


Class 'A' Fires



- Ordinary combustibles
 - Wood
 - Paper
 - Trash
 - Plastic

Class 'B' Fires



Class 'B' Fires



- Combustible Liquids
 - Gasoline
 - Diesel fuel
 - Cooking oil
 - Solvents (paint, mineral spirits, etc.)

Class 'C' Fires



Class 'C' Fires



- Energized electrical equipment
- Similar to class 'A' fires
- requires non-conductive extinguishing agents (you don't want to use water)

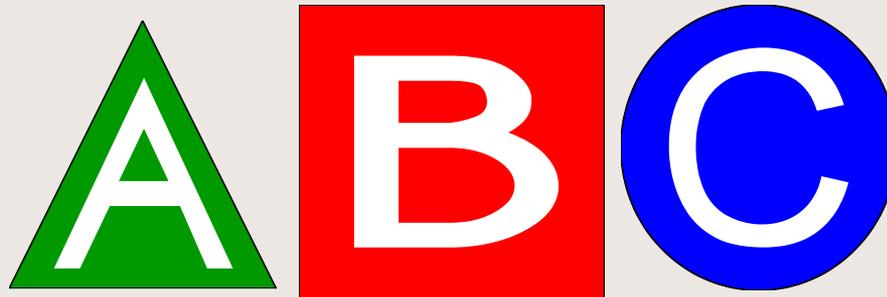
Classes of Fire and Extinguishers



Classes of fire Extinguisher ratings

- Class A fire = Class A extinguisher
- Class B fire = Class B extinguisher
- Class C fire = Class C extinguisher
- There are other types of fires and extinguishers but these are the most common

Classes of Fire Extinguishers



- Current symbols listed on extinguishers

Classes of Fire Extinguishers



- A red line drawn through one of the symbols indicates usage of only two of the classes of fires

Fire Extinguisher Ratings



- Class A extinguisher - rated 1-A through 40-A
- Class B extinguisher -- rated 1-B through 640-B
- Class C extinguisher -- agent tested for electrical non- conductivity
- Simply put: the larger the number the more fire you can extinguish.

Extinguisher Agents



- Stored pressure (water)
 - Used on Class A Fires
- Co₂ (liquefied compressed gas)
 - Used on Class B and C fires
- Dry chemical (ordinary and multipurpose)
 - Dry Chemical is the most common type of fire extinguisher
 - Typically is an A,B,C fire extinguisher

Fire Extinguisher Types



Water extinguisher 30-40 ft.* 60 sec.*



Dry chemical 5-20 ft.* 8-25 sec.*



CO2 extinguisher 3-8 ft.* 8-30 sec.*

*Numbers depend on extinguisher size

Fire Extinguisher Values



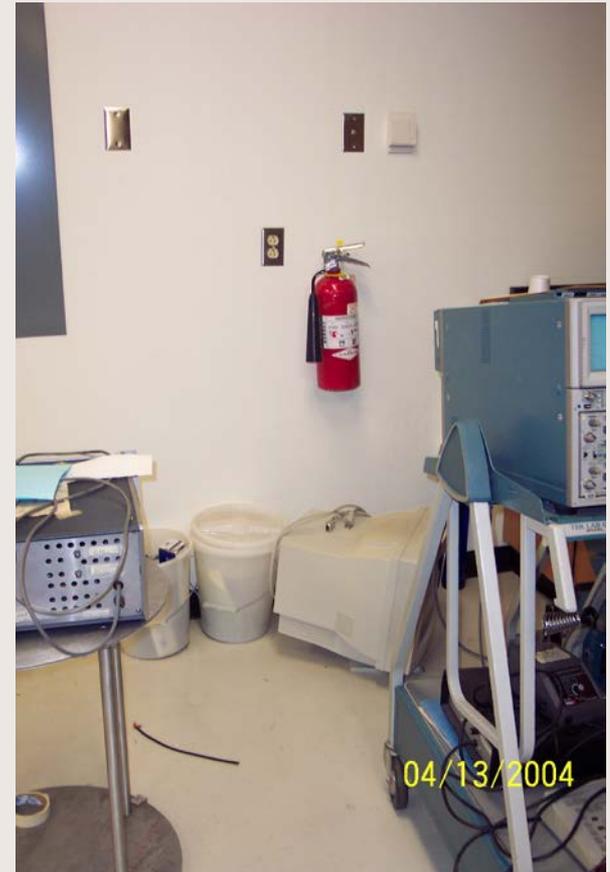
Important factors that determine the value of a fire extinguisher:

- **Serviceability**
 - Smaller extinguisher and extinguishers with plastic heads cannot be refilled
- **Accessibility**
- **Users ability to operate**

Inspection Procedures



- Proper location & accessible
- Inspect discharge horn & nozzle
- Operating instructions legible
- Check lock pins & tamper seals



Inspection Procedures



- Fully charged/pressurized
- Date of last inspection
- Condition of hose and fittings
- Has the extinguishing agent solidified inside
 - (Turn the extinguisher upside down once a month to prevent this.)

Inspection Procedures



- Fire extinguishers need to be:
 - Serviced annually
 - Inspected every 6 years
 - Have a Hydrostatic test every 12 years
- This can be done along with refills at a safety supply company
 - Look in the Yellow Pages under fire extinguishers

RECORDS



Building owners should keep the following records on maintenance and inspections:

- Month
- Year
- Type of maintenance
- Date of last recharge

Fire Extinguisher Use



- Fight or Flight?
 - Low smoke levels?
 - Low heat levels?
 - Good Oxygen?
- If you have the above, feel free to fight the fire



Fire Extinguisher Use



- Know your location
 - Do you know where your extinguisher is?
(You better know!)
 - Exits? Position yourself between the fire and an exit so you can get out
 - Outside? Approach the fire from the upwind side of the fire

Fire Extinguisher Use



- Appropriate Extinguisher
 - A, B, C?
- Look to make sure it is fully charged



Fire Extinguisher Use



- PASS
 - Pull – The pin
 - Aim - At the base of the fire
 - Squeeze – The handle
 - Sweep – The nozzle side to side



Questions? Call 229-3132

