

Fire Prevention



 NFPA

Hear the **BEEP**
where you **SLEEP**

**EVERY BEDROOM
NEEDS A WORKING
SMOKE ALARM.**

FIRE PREVENTION WEEK
OCTOBER 4-10, 2015

firepreventionweek.org

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Elements of Fire Prevention Planning

- List all major fire hazards.
- Proper control of hazardous materials
 - including flammable and combustible liquids.
- Control potential ignition sources.
- List fire protection equipment.
- Regular inspection and maintenance.
- Responsible employees for fuel sources.

STORAGE & HANDLING

- Identify and eliminate sources of ignition.
- Choose the least hazardous materials possible.
- Reduce the amounts stored to a minimum.
- Use safe storage procedures and containers.
- Ensure containers are properly labeled.



Trash & Refuse

- Keep all trash containers (large bins) 10-15 feet away from buildings.
- Keep pallets stored at least 10 feet from the building.
- Store pallets in less than six foot stacks unless sprinkler system is designed for this type of hazard.



Common Fire Hazards

- Fire is the most common business hazard.
- Are you prepared to fight a small fire?
- Should you evacuate with every fire?
- Have you performed a Fire Risk Assessment?



Working Smoke Alarms Save Lives!

Two Basic Types of Smoke Detectors

Photoelectric

Smoke particles encounter light beam.
Beam scatters to a photocell creating a current.
Better for larger particles (smoldering).

Ionization

Particles attach to ionized particles creating a detectable change in current.
Better for smaller particles (flaming).

Smoke Detectors

- **Brief history**

- In the 1930s, Swiss scientist Walter Jaeger tried to invent a poison gas detector thinking the particles would interact with an ion gas causing a detectable change in current. The idea failed. Frustrated, he lit a cigarette and voila, the smoke detector.

Smoke Detector Maintenance

- Test your smoke alarms once a month.
- Replace your batteries in your smoke alarm twice a year.
- Hint: schedule battery replacements for the same day you change your clocks for daylight savings time.
- Never “borrow” a battery from a smoke alarm.
- Don’t disable smoke alarms even temporarily.
- Regularly vacuuming or dusting your smoke alarms can keep them working properly.
- Replace battery powered units every ten years.

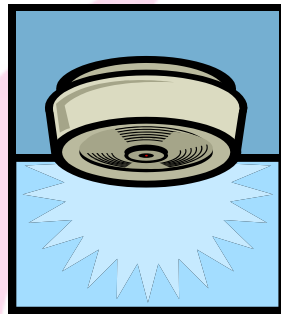
Sprinklers & Smoke Alarms

Interesting Statistic

Sprinklers and smoke alarms together cut your risk of dying in a home fire 82%, relative to having neither, a savings of thousands of lives a year.



+



= -82%

Fire Protection Sprinklers

- Maintain Fire Department Connection covers.
- Never hang items from sprinkler heads.
- Maintain an 18" clearance below sprinkler heads so they can do their job.
- Sprinkler Head Storage Cabinet should contain:
 - extra heads
 - sprinkler wrench
- Cabinets hold a minimum of six sprinklers and sprinkler wrench in accordance with NFPA[®] 13.
 - Less than 300 heads min 6 spares
 - 300 – 1,000 heads min 12 spares
 - More than 1000 heads min 24 spares
- Follow NFPA 25 for Sprinkler System Testing and Inspections.



Fight or Flee?

- Will you fight a fire?
- Before you do:
 - Understand the uses; and
 - Understand the limitations of a portable fire extinguisher.
- Sound Evacuation Alarm First!

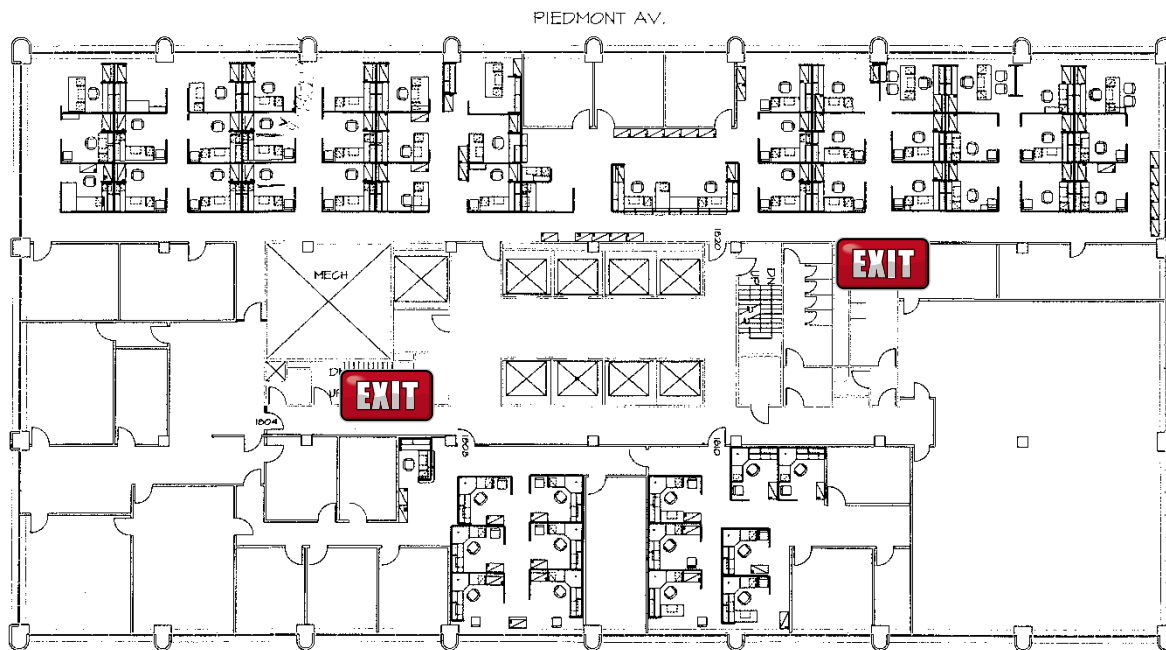
If the evacuation alarm sounds:

- Go to your closest exit.
- If smoke is at the primary exit, use your second way out.
- When exiting through smoke, get low and go under the smoke to your exit.
- Don't go back for belongings.
- Get out and help others get out.
- Call the fire department from a safe location.
- Go to your meeting area outside.
- A management representative should meet the fire department to communicate that everyone is out of the building.



Evacuation Plans and Procedures

- Know your evacuation routes.
- Know your meeting point.
- Are you assisting someone on your floor?

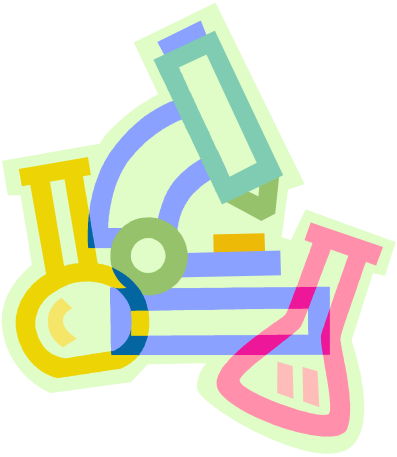


Chemistry of Fire

For fire to exist, the following four elements must be present:

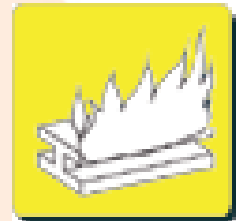
- Enough **Oxygen** to sustain combustion
- Enough **Heat** to raise the material to its ignition temperature
- Some sort of **Fuel** or combustible material; and
- A continuous **Chemical Reaction** is required to sustain a fire.

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



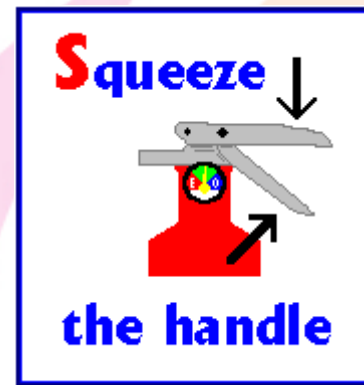
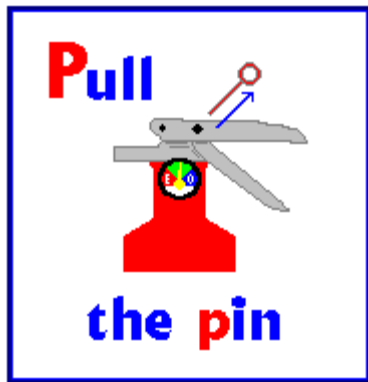
Classes of Fire

- Class A
 - wood, cloth, paper, cardboard
- Class B
 - flammable or combustible liquids, gases
- Class C
 - energized electrical equipment
- Class D
 - combustible metal, chemical reaction
- Class K
 - vegetable oils, animal oils, or fats



P-A-S-S

- **P** Pull the pin.
- **A** Aim at the base of the fire.
- **S** Squeeze the handle.
- **S** Sweep side-to-side at the base of the fire.



Important!

*Use of a fire
extinguisher is*

VOLUNTARY!

Fire Risk Assessment

Prior to fighting any fire with a portable fire extinguisher, answer these questions.

- How big is the fire?
- Are there evacuation routes behind you?
- What is the atmosphere like in the vicinity of the fire?

Fire Extinguishers must be available in most buildings. They should all be maintained in accordance with NFPA 10 (i.e. Monthly, Annual and Six (6) Year Inspections).

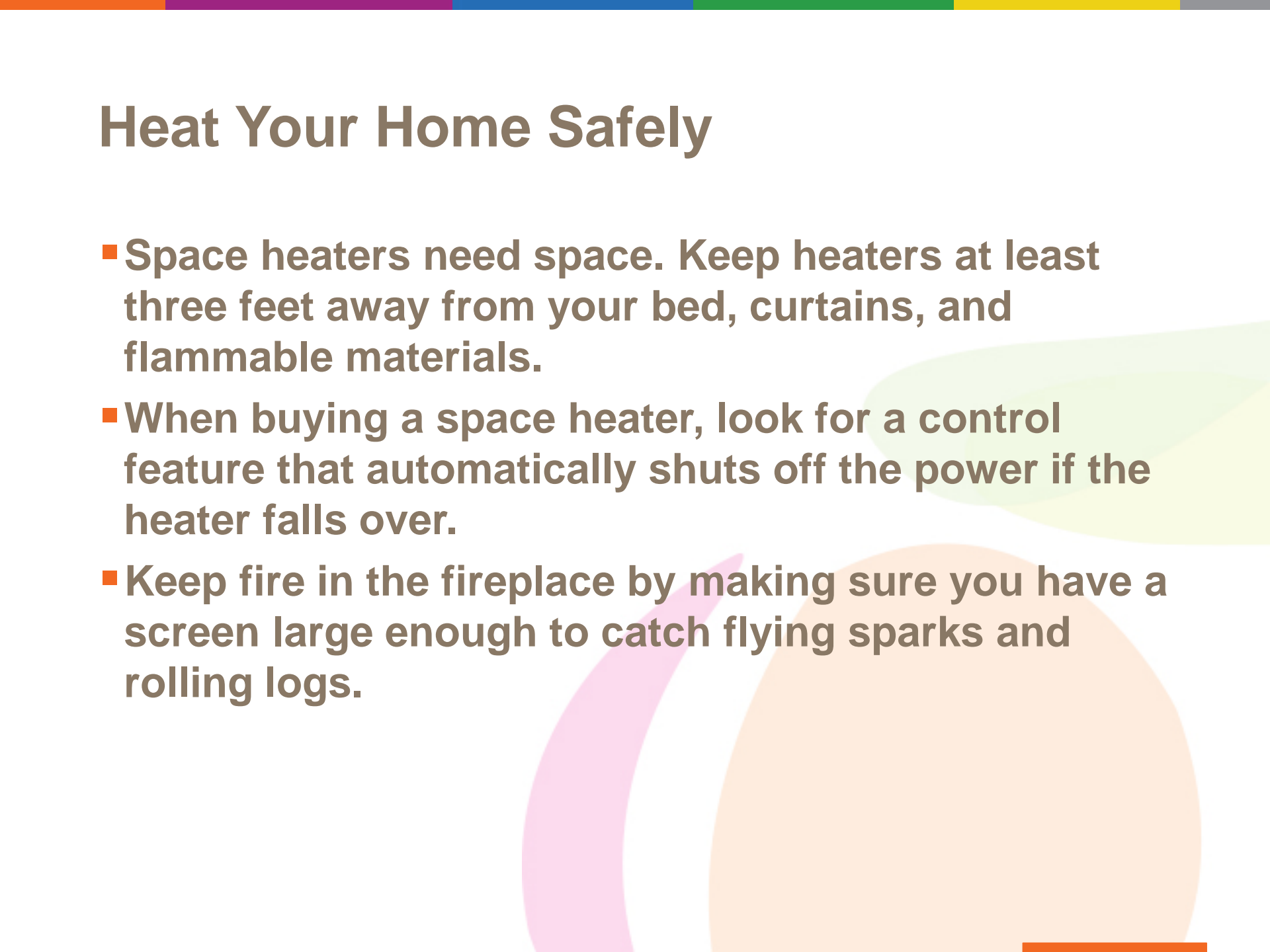


Smoke Safely



- If alcohol or medication makes you drowsy, or you're just plain tired, put your cigarette out right away.
- Never smoke in bed.
- Use deep ashtrays and put your cigarette all the way out.
- Don't walk away from a lit cigarette.
- **Better Yet: Quit Smoking!**

Heat Your Home Safely

- **Space heaters need space. Keep heaters at least three feet away from your bed, curtains, and flammable materials.**
 - **When buying a space heater, look for a control feature that automatically shuts off the power if the heater falls over.**
 - **Keep fire in the fireplace by making sure you have a screen large enough to catch flying sparks and rolling logs.**
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Electrical Safety

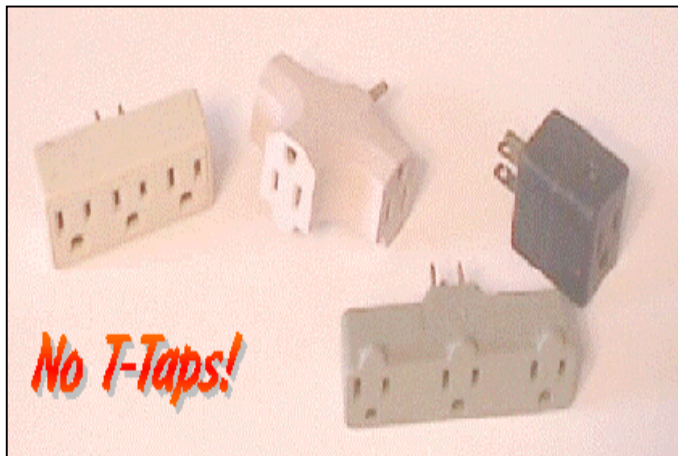
- Do not use extension cords in place of permanent wiring.
- Make sure extension cords do not cross walkways.
- Maintain a clear access to electrical breaker panels.
- Do Not overload circuits.
- Do Not leave heating devices unattended.
- Junction boxes and breaker/disconnects in electrical circuit panels are required to be properly labeled.



Electrical Safety

- Electrical

- Multiple plug adapters are prohibited.
- Have additional wall outlets installed.
- Use power strips with breaker protection instead.



Yes Power Strips!



If you are on fire remember to...

STOP, DROP, ROLL

Don't use Dry Chemical extinguishers!

Don't flap or slap at the burning clothes.

React rapidly/urgently but stay calm.

Don't become a victim yourself; use fire blankets when available.

Flammable Liquids



■ Flammable and Combustible Materials

- Where possible, substitute flammable materials with safer, less/non-flammable, non-toxic materials.
- Containers should be tightly sealed when not in use.
- Liquids should be stored in an area where temperature is stable to avoid pressure buildup from vaporization.
- Approved safety cans are recommended for smaller quantities.
 - The spring-loaded safety cap prevents spillage, prevents vapors from escaping, acts as a pressure vent if engulfed in fire, and prevents explosion and rocketing of the can.
- Quantities of flammable and combustible liquids located outside of storage cabinets should be restricted to one day's supply, or to what can be used during a single shift.

Hot Work Hazards

- Hot work
 - Any operation involving heated materials or open flames can present a fire hazard.
 - Do you control where and when hot work (welding, cutting) can be conducted in your facility? Do you instruct your employees and contractors concerning these requirements?



Compressed Gases

■ Compressed Gas Cylinders

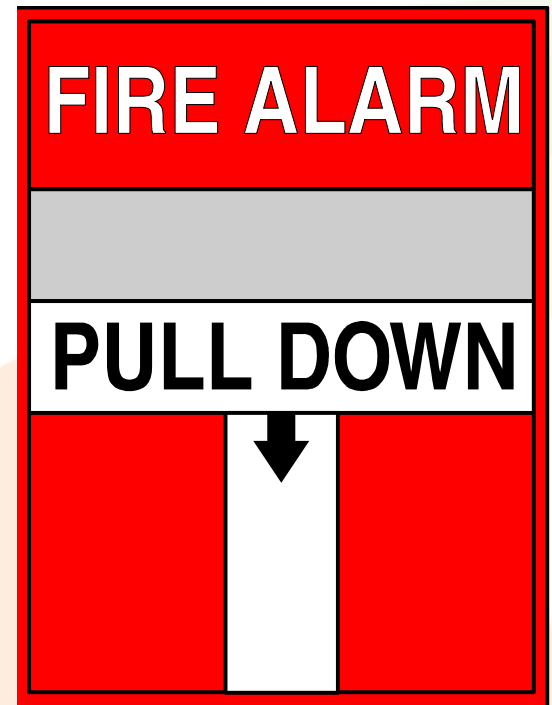
- Keep valves closed and put caps on cylinders when not in use.
- Never store gas cylinders near radiators or other heat sources (including direct sunlight).
- Gas cylinders, or any other hazardous material, cannot be stored in public hallways or unprotected areas.
- Non-flammable cylinders must be at least 5 feet from exits or unprotected openings such as windows.
- Flammable cylinders must be at least 25 feet from exits and windows.
- Oxygen cylinders must be at least 20 feet from flammable and combustible materials. (Separation can be by barrier that has a fire-rating of at least ½ hour, such as concrete block or sheet metal, that is at least 5 feet in height).
- Store cylinders upright in a rack and secured preferably by a chain.
- Store the empty and full cylinders separately and have a sign indicating it.
- Transport and Secure the Compressed Gas Cylinders in an upright position using a “special truck or cart.”



Notification Systems

■ Fire Protection Systems

- Manually activated pull stations are located along building exit routes.
- All buildings equipped with fire alarms will have manual pull stations (i.e.: red boxes).



Cooking areas

■ Fire Protection Systems

- Each existing commercial cooking appliance, such as a grill, deep fryer, or any other appliance that produces grease-laden vapors, is required to have an approved commercial kitchen exhaust hood and duct system that is protected with an automatic fire suppression system.
- These commercial kitchen systems must be appropriate for the hazard.
- The sprinkler heads within the hoods require regular maintenance and cleaning to remove deposits of residue and grease from the system.

Safe Cooking



- Never leave items cooking on the stove unattended. A serious fire can start in just seconds.
- Always wear short or tight-fitting sleeves when you cook. Keep towels, pot holders and curtains away from flames.
- Never use the range or oven to heat your home.
- Double-check the kitchen before you go to bed or leave the house.
- Have a “K” type fire extinguisher available.

Landscaping

- Miscellaneous Requirements

- Landscaping must not:

- Impede fire vehicle or emergency responder access to a building.
- Obstruct access to fire hydrants, fire department connections or other fire sprinkler test valves and other emergency devices.
- Obstruct or cause a tripping hazard for occupants evacuating a building.
- Obstruct exits from doors, windows, or other designated evacuation points from a building.

Wood Shops

■ Miscellaneous Requirements

- All wood, powder dust and metal shavings must be cleaned and removed from the building at the end of the job or the workday. Basically, machines are not allowed to accumulate dust more than 1/32 inches thick (approx. thickness of a dime).
- All shops with machinery that produces hazardous shavings or dust must have an approved dust collection system.
 - This system must be in operation any time the equipment is in use.
 - Follow (O.C.G.A.) Section 25-2-4 Combustible Dust Standard which is very references to N.F.P.A. 5000 & 654.



Laundry Operations

■ Miscellaneous Requirements

- Lint catchers in clothes dryers should be emptied after each load.
- Check the area behind the washer and dryer periodically for lint or trash buildup and clean as necessary.
- Dryer vents must exhaust to the exterior of the building.

Auto Shops

- Miscellaneous Requirements

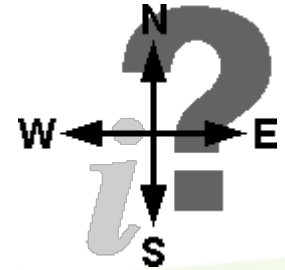
- For automotive and industrial shops, at the end of the work day or as necessary:
 - Clean all work areas of oil to prevent buildup.
 - Return all oils and flammables to their proper storage cabinet/area.
 - Turn off all power equipment or unplug.
 - Turn off all fuel valves and power to such systems.

Auto Repair

- Miscellaneous Requirements

- Parts washers may use flammable solvents. Check the SDS for the product and follow guidelines, or find a less hazardous substitute.
- Spray finishing with flammable materials is only allowed in approved paint booths, or with procedure approval by fire Marshal.

QUESTIONS???



Risk Management

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