



Portable Fire Extinguisher WAC 296-800-300

National Fire Protection Association (NFPA)

During 2006–2010, an estimated 42,800 fires in industrial and manufacturing properties were reported to U.S. fire departments per year:

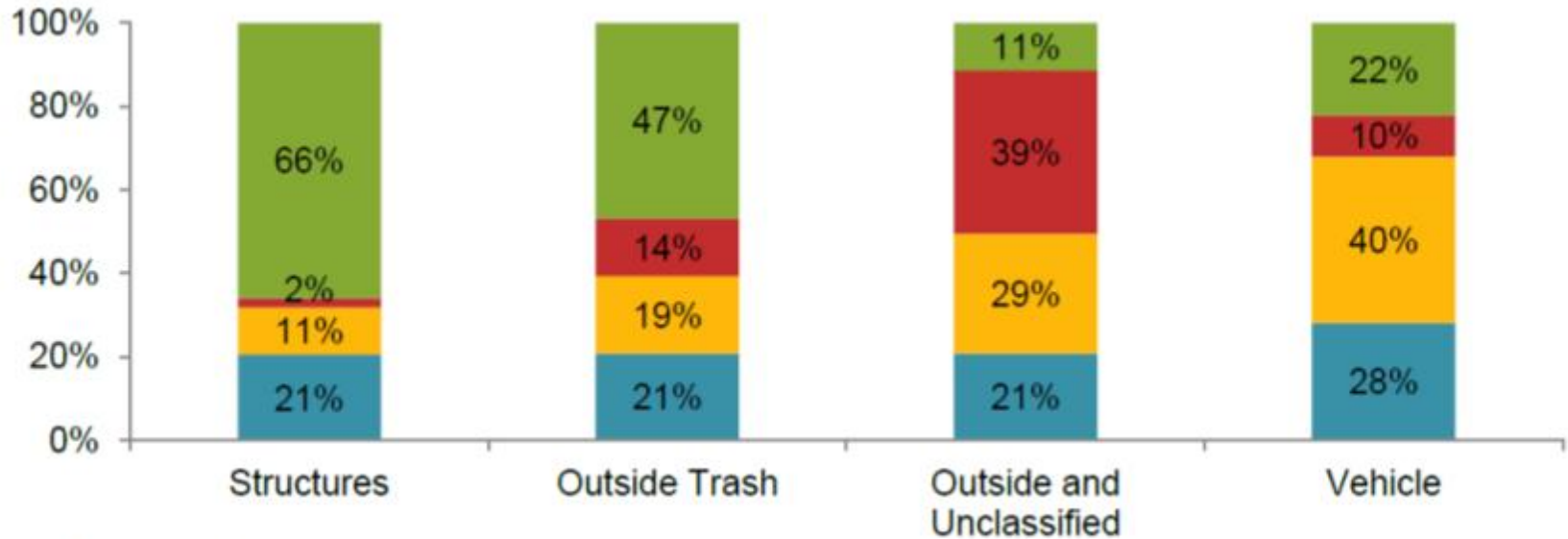
These included:

- 30,200 outside or unclassified fires
- 8,600 structure fires
- 4,100 vehicle fires
- These fires caused \$951 million in property damage per year

Source: NFPA



■ Manufacturing or processing ■ Forest, timberland or woodland ■ Agricultural ■ All other property uses



- Structure fires are more common in manufacturing or processing properties, while vehicle fires are more common in agricultural properties

Source: NFPA

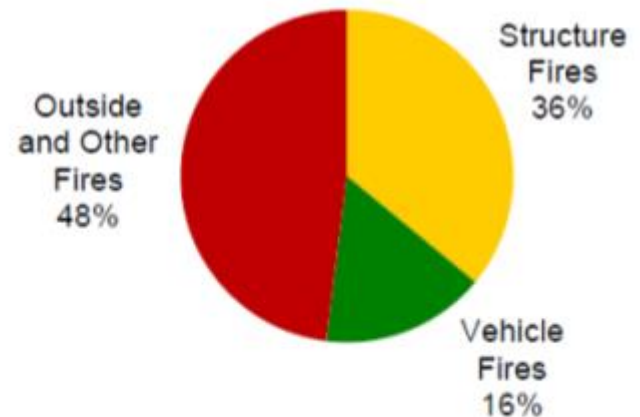
Fires in the United States During 2010

1,331,500 fires were reported in the U.S. during 2010.

- down **1%** from 2009
- **3,120** civilian fire deaths
- **17,720** civilian fire injuries
- **\$11.6 billion** in property damage
- **72 firefighter deaths**

Firefighter deaths are not restricted to fires.

Fires in the United States During 2010



Source: NFPA

Purpose of a Fire Extinguisher

Two functions:

1. To control or extinguish small or incipient stage fires and,
2. To protect evacuation routes that a fire may block directly or indirectly with smoke or burning/smoldering materials.

Definitions

"Incipient stage fire" means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

OSHA

"Incipient stage fire" A fire is considered to be beyond the incipient stage when the use of thermal protective clothing or self contained breathing apparatus is required or an industrial fire brigade member is required to crawl on the ground or floor to stay below smoke and heat.

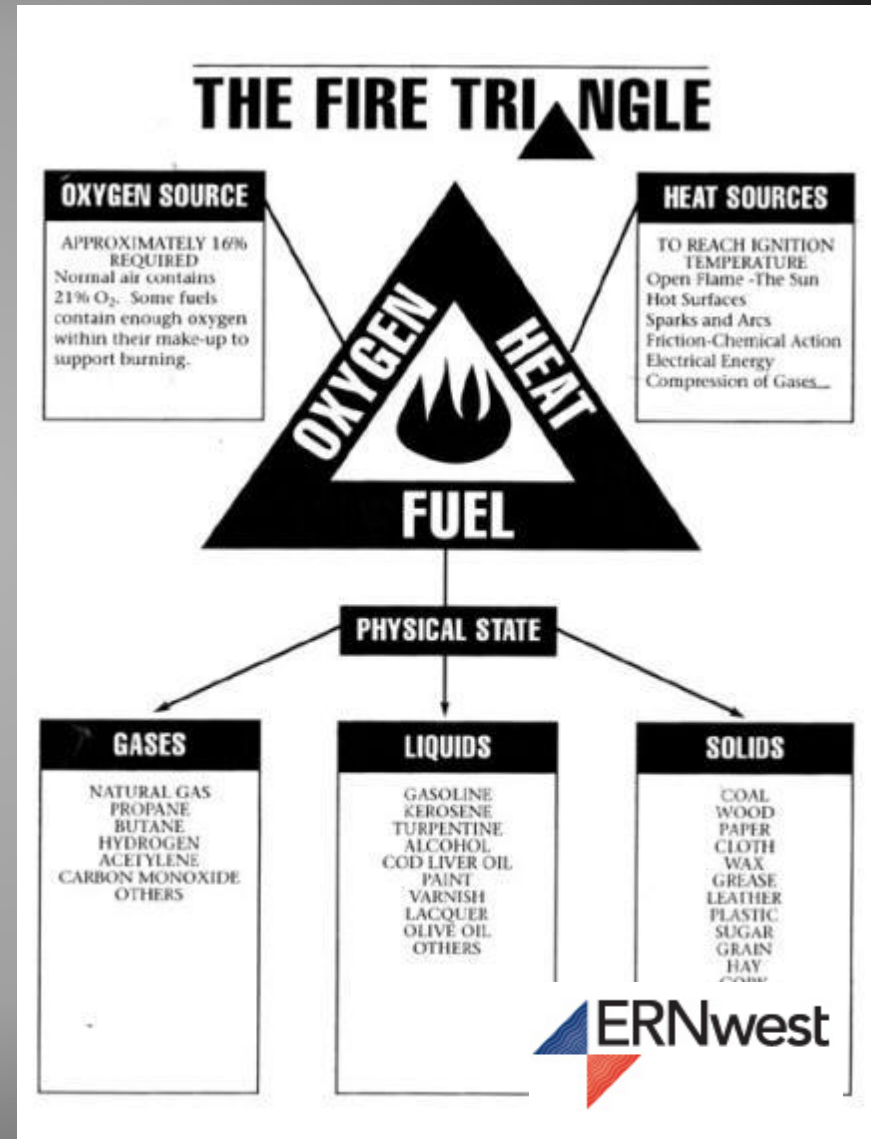
NFPA



What type of Fire do I have?

Fire requires 3 Elements

1. **Heat:** Without sufficient *heat*, a fire cannot begin, and it cannot continue.
2. **Fuel:** Without fuel, a fire will stop.
3. **Oxygen:** Without sufficient *oxygen*, a fire cannot begin, and it cannot continue.



5 Categories of Fires

- **Class A Fires:** Ordinary combustible materials such as wood, cloth, paper, rubber and many plastics.
- **Class B Fires:** Flammable Liquids, combustible liquids, petroleum greases, tars, oils, paints, solvents, lacquers, alcohols and flammable gases.
- **Class C Fires:** Involve electrical equipment.
- **Class D Fires:** Involve combustible metals, such as magnesium, titanium, zirconium, sodium, lithium and potassium.
- **Class K Fires:** Involve cooking appliances that involve combustible cooking media (vegetable or animal oils/fats)



Types of Fire Extinguishers

Types of Fire Extinguishers

Class A extinguishers put out fires in ordinary combustible materials such as cloth, wood, rubber, paper, and many plastics.

Class B extinguishers are used on fires involving flammable liquids, such as grease, gasoline, oil, and oil-based paints.

Class C extinguishers are suitable for use on fires involving appliances, tools, or other equipment that is electrically energized or plugged in.

Class D extinguishers are designed for use on flammable metals and are often specific for the type of metal in question. These are typically found only in factories working with these metals.

Class K fire extinguishers are intended for use on fires that involve vegetable oils, animal oils, or fats in cooking appliances. These extinguishers are generally found in commercial kitchens, such as those found in restaurants, cafeterias, and caterers. Class K extinguishers are now finding their way into the residential market for use in kitchens.

A Ordinary Combustibles

B Flammable Liquids

C Electrical Equipment

D Combustible Metals

K Combustible Cooking



Did you know fire extinguisher should be serviced annually?

General Procedures for Responding To a Fire

1. **SOUND THE FIRE ALARM** and call the fire department, if appropriate.
2. **IDENTIFY A SAFE EVACUATION PATH** before approaching the fire.
 - Do not allow the fire, heat, or smoke to come between you and your evacuation path.
3. **SELECT** the appropriate type of fire extinguisher.
4. **DISCHARGE** the extinguisher within its effective range using the **P.A.S.S.** technique (pull, aim, squeeze, sweep).
5. **BACK AWAY** from an extinguished fire in case it flames up again.
6. **EVACUATE IMMEDIATELY** if the extinguisher is empty and the fire is not out.
7. **EVACUATE IMMEDIATELY** if the fire progresses beyond the incipient stage.

How to Extinguisher a Small Fire

PASS

1. **“P”ULL...** Pull the pin. This will also break the tamper seal.
2. **“A”IM...** Aim low, pointing the extinguisher nozzle (or its horn or hose) at the base of the fire.

Note: Do not touch the plastic discharge horn on CO2 extinguishers, it gets very cold and may damage skin.

3. **“S”QUEEZE...** Squeeze the handle to release the extinguishing agent.
4. **“S”WEEP...** Sweep from side to side at the base of the fire until it appears to be out. Watch the area. If the fire re-ignites, repeat steps 2 – 4.

If you have the slightest doubt about your ability to fight a fire....EVACUATE IMMEDIATELY!





Pick up the Fire Extinguisher with your least favorite hand.
Support the bottom with your strong hand.



Quickly Check the Pressure Gauge



Pull the Pin (straight out)

Source: NFPA





Know what you are looking for...

A fully charged Fire Extinguisher has the arrow in the green section...



Remove the nozzle from the clip.



Hold the nozzle with your strong hand.

Carry the Extinguisher with your opposite hand.



Squeeze the handle gently to test the Extinguisher.





Begin your approach from a Safe Distance



Source: NFPA



Aim at the Base of the Fire

Sweep Back and Forth to cover the width of the fire



CLASS D FIRES (METAL)



Direct the nozzle so the agent falls directly onto the burning metal.



Close the nozzle valve to produce a soft, heavy flow and move closer to cover the fire area.



Do not disturb the agent and fire until it has cooled.

Inspection, maintenance and testing.

- ▶ The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.
- ▶ Portable extinguishers or hose used in lieu thereof under paragraph (d)(3) of this section shall be visually inspected monthly.



Monthly Inspection

1. Is the Fire Extinguisher in its designated place?
2. No obstruction to access or visibility?
3. Pressure gauge reading or indicator in operable range or position?



Monthly Visual Inspection

1. Corrosion
2. Mechanical Damage (dent abrasion)
3. Paint Condition
4. Presence of repairs (welds, soldering)
5. Damaged Threads
6. Broken Hanger attachment
7. Broken Handle Lug

Cylinder Shell



Monthly Visual Inspection

Name Plate, Instructions and Pull Ring

1. Illegible Wording
2. Corrosion or loose plate
3. Verifying operating instructions on nameplates are legible and face outward.
4. Broken, missing safety seals and tamper indicators.



Monthly Visual Inspection

1. Deformed, Damaged or Cracked
2. Blocked opening
3. Damaged threads
4. Hose obstruction
5. Hydrostatic test date



Monthly Visual Inspection

Pressure Indicating Device

1. Immovable, jammed, missing pointer
2. Deformed, or broken crystal
3. Illegible or faded dial
4. Corrosion
5. Dented case or crystal retainer
6. Immovable or corroded pressure indicating stem



Fire Extinguisher Program Review

