

BROWARD COLLEGE FIRE SAFETY GUIDE

An acceptable fire protection program includes those fire protection policies, requirements, technical criteria, analyses, administrative procedures, systems and hardware, apparatus and equipment, plans, and personnel that comprehensively ensure that DOE objectives relating to fire safety achieved.



Department of Safety, Security and Emergency Preparedness

Office of Environmental Health and Safety

Everything You Wanted
to Know About FIRE
SAFETY



INTRODUCTION

Each year in the U. S., 70,00- 80,000 workplaces experiences a serious fire. Property losses from workplace fires exceed \$2 Billion annually. According to the Bureau of Labor Statistics' census of Occupational fatal injuries, fires and explosions accounted for 3% of workplace fatalities.

Fire safety becomes everyone's job at a worksite. Employers should train workers about fire hazards in the workplace and about what to do in a fire emergency. The guidebook provides valuable reference materials for the prevention of fire-related injuries in all workplace.

The purpose of this Fire Safety Plan is to eliminate the causes of fire, prevent loss of fire and property by fire, and to comply with the Occupational Safety and Health Administration's (OSHA) standard on fire prevention, 29 CRP 1910.39. It provides employees with information and guidelines that will assist them in recognizing , reporting, and controlling fire hazards. It describes the fuel (hazardous or other materials) on the site that could initiate or contribute both to the spread of a fire , as well as the building systems, such as fixed fire extinguishing systems and alarms systems, in place to control the ignition or spread of a fire.

Quick Tips

- ❑ Call 911
- ❑ If it safe to so call Campus Safety at 954 -201-HELP (4357)
- ❑ Close all doors while exiting to prevent the spread of smoke/fire. DO NOT LOCK DOORS
- ❑ If the fire is small & confined to the area where started, secure fire extinguisher, fight the fire.
- ❑ Evacuate! DO NOT USE ELEVATORS.
- ❑ Ensure that everyone is out including those with disabilities.
- ❑ Go to designated Evacuation Assembly Areas
- ❑ Enter the building after an "All Clear" is announced by Public Safety

Fire Safety is everyone's responsibility. All employees should know how to prevent and respond to fires, and are responsible for adhering to Broward College guidelines regarding fire emergencies.



Fire is the third leading cause of accidental deaths in the United States, yet most people ignore it. More than 150 workplace fires occur every day.

Do you know?

- How do fires start?
- How fires are classified?
- How to prevent fires?
- When not to fight a fire?
- How to identify the proper fire extinguisher?
- How to use a portable fire extinguisher?
- What to do if someone catches on fire?
- How do fires start?
- How to extinguish small fires?
- How to inspect your fire extinguishers?
- How to create an emergency action plan
- How to evacuate a burning building?
- What to do if trapped in a burning building?
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HOW FIRES START

Fire is a chemical reaction involving rapid oxidation or burning of fuel. It needs three elements to occur:



FUEL - Fuel can be any combustible material - solid, liquid, or gas. Most solids and liquids become a vapor or gas before they burn.

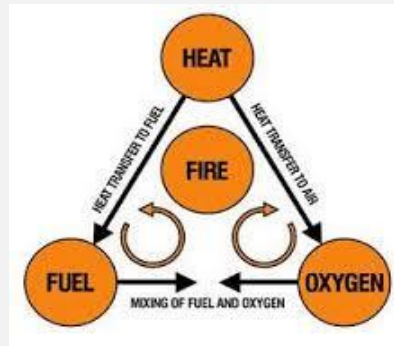
B
C



OXYGEN - The air we breathe is about 21 percent oxygen. Fire only needs an atmosphere with at least 16 percent oxygen.



HEAT - Heat is the energy necessary to increase the temperature of the fuel to a point where sufficient vapors are emitting for ignition to occur.



CHEMICAL REACTION - A chain reaction can occur when the three elements of fire are present in the proper conditions and proportions. Fire occurs when this rapid oxidation or burning takes place. Take any one of these factors away, and the fire cannot occur or extinguished if it was already burning.

HOW FIRES ARE CLASSIFIED

CLASSES OF FIRES	TYPES OF FIRES	PICTURE SYMBOL
A	Wood, paper, cloth, trash & other ordinary materials.	
B	Gasoline, oil, paint and other flammable liquids.	
C	May be used on fires involving live electrical equipment without danger to the operator.	
D	Combustible metals and combustible metal alloys.	
K	Cooking media (Vegetable or Animal Oils and Fats)	

- ❑ In some cases, covering the burning metal with sand can help contain the heat and sparks from the reaction. Class D extinguishing agents are available (generally as a dry powder in a bucket or box) which can be quite effective. These agents are available upon request from the EH&S Office.
- ❑ If you are planning a research project using a lot of flammable metals, you should consider requesting a ten-pound Class-D extinguisher as a precaution.
- ❑ Pure metals such as potassium and sodium react violently (even explosively) with water and some other chemicals, and must be handled with care. Generally, these metals are stored in sealed

containers in a non-reactive liquid to prevent decay (surface oxidation) from contact with moisture in the air.

- ❑ White phosphorus is air-reactive and will burn/explode on contact with room air. White phosphorus must be secured in a sealed container with a non-reactive solution to prevent contact with air.
- ❑ Some of these metals may be uncommon in labs on Broward College campuses, are generally found in small quantities, and accidental fires/reactions can be controlled or avoided completely through knowledge of the properties of the metals and using good judgment and common sense.
- ❑ The researcher should be familiar with the characteristics, MSDS, and adverse reactions of the various chemicals he or she is using.

WHEN NOT TO FIGHT A FIRE

Never fight a fire:

- ❑ If the fire is spreading beyond the spot where it started
- ❑ If you can't fight the fire with your back to an escape exit
- ❑ If the fire can block your only escape
- ❑ If you don't have adequate fire-fighting equipment

In any of these situations,

**DO NOT FIGHT THE FIRE YOURSELF.
CALL FOR HELP.**



HOW TO IDENTIFY & USE THE PROPER FIRE EXTINGUISHER

All ratings are shown on the extinguisher faceplate. Some extinguishers are marked with multiple ratings such as AB, BC, and ABC. These extinguishers are capable of putting out more than one class of fire.

Class A and B extinguishers carry a numerical rating that indicates how large a fire an experienced person can safely put out with that extinguisher.

Class C extinguishers have only a letter rating to indicate that the extinguishing agent will not conduct electrical current. Class C extinguishers must also carry a Class A or B rating.

Class D extinguishers carry only a letter rating indicating their effectiveness on certain amounts of specific metals.



HOW TO USE A PORTABLE FIRE EXTINGUISHER

Remember the acronym, "P.A.S.S." —



Following the P.A.S.S. Technique

- Pull...
- Aim...
- Squeeze...
- Sweep...



REMEMBER:

- ❑ Should your path of escape be threatened?
- ❑ Should the extinguisher run out of agent
- ❑ Should the extinguisher prove to be ineffective
- ❑ Should you no longer be able to fight the fire safely

...THEN LEAVE THE AREA IMMEDIATELY!

HOW TO INSPECT YOUR FIRE EXTINGUISHERS

- ❑ Know the locations of the fire extinguishers in your work area.
- ❑ Make sure the class of the extinguisher is safe to use on fires likely to occur in the immediate area.
- ❑ All fire extinguishers should be checked monthly by the occupants.
- ❑ Check the plastic seal holding the pin in the extinguisher handle. Has the extinguisher been tampered with or used before? Report any broke/missing seals/pins to the Environmental Health & Safety (EHS).
- ❑ Look at the gauge and feel the weight. Is the extinguisher full? Does it need to be recharged?
 - Water, some foam, and dry chemical extinguishers have gauges indicating the pressure inside the extinguisher. The pressure needle should be in the "green" area (generally 100-175 lbs., depending on the type of agent).
 - CO₂ (carbon dioxide) extinguishers are high-pressure cylinders with pressures ranging from 1500 lb to 2150 lb. These extinguishers DO NOT have gauges and must be weighed by our Fire Extinguisher contractor to determine the numbers of contents are remaining.
- ❑ Make sure the pin, nozzle, and nameplate are intact.
- ❑ The Fire Extinguisher Contractor under the guidance of the EHS inspects and services all Broward College fire extinguishers on a year-round basis, but we would still encourage you to be aware of the condition of your area's extinguishers by visual inspection on a frequent basis to ensure you have a working extinguisher there when you need one.
- ❑ Report any missing, empty, or damaged fire extinguishers to the EHS Office whenever you notice any discrepancies.

The APPEARANCE of different types of extinguishers:

Generally, you can tell at a glance which type an extinguisher is hanging on the wall, or in the cabinet, just by looking at its shape. Check the labels of the extinguishers in your area and note the color and shape/size of the extinguisher. This may help if someone runs in to help you fight fire with the **WRONG** extinguisher (i.e. water on an electrical fire) - you can **STOP** him or her before an injury or the situation gets worse!



ABC-rated multipurpose dry powder extinguishers are the most common at GPC campuses, particularly in the corridors of academic buildings. They are almost always **RED** in color and have either a long narrow hose or no hose (*just a short nozzle*). These extinguishers are very light (*5-25 lbs total weight*) Halon extinguishers look virtually identical to ABC Multipurpose dry chemical extinguishers.



CO₂ (carbon dioxide) extinguishers are generally red have a **LARGE** "tapered" nozzle (horn), are **HEAVIER** (15-45 lbs.) These are all high-pressure cylinders. Care should be used not to drop a CO₂ cylinder; if it is damaged it can punch a hole through the nearest wall(s) and end up on the other side of campus! (The containers are quite sturdy, but do not abuse them) CO₂ cylinders do not have a pressure gauge – must be weighed to determine the amount of contents.

"WHERE can I find a fire extinguisher on campus?"

- In the corridors of academic and office buildings, and inside very large rooms.
- In or immediately outside all laboratories where chemicals are stored and used.
- In or immediately outside mechanical spaces where motorized or another equipment is present which might reasonably cause a fire.
- In electrical closets, storage buildings, and mounted inside certain Broward College vehicles.

If you cannot find the fire extinguisher in your area, or feel you need different type/size of extinguisher for your work area or laboratory, contact the **EHS Office (954-201-6828)**.

"If I just use a little, do I have to report the extinguisher as USED?"

YES! We want FULL extinguishers at all Broward College campus locations.

While CO₂ and halon extinguishers will generally hold their pressure after a slight discharge, BC and ABC rated DRY CHEMICAL extinguishers will **usually NOT hold a charge after partial use**. This is true for all your personal **home and vehicle** dry chemical extinguishers, too!

While the gauge may hold steady in the green immediately after a slight use, check it the next day and you will find the gauge on EMPTY! This is due to the dry powder getting inside the seals and allows the nitrogen carrier to escape over a period.

After ANY use, a BC or ABC extinguisher **MUST** be serviced and recharged. This is very important for home extinguishers also; **YOU MUST HAVE THE EXTINGUISHER REFILLED AFTER ANY USE**.

You cannot "test" an extinguisher and put it back in the cabinet!

If you want to try out an extinguisher and learn how it feels to use one, contact the EHS Office and they will arrange for you to attend a fire extinguisher classes where you can actually get some "hands-on" use.

Warning to thieves and vandals: Fire extinguishers and types of fire equipment on the Broward College campus are traceable, and theft of or damage to emergency equipment is a serious crime.

HOW TO EVACUATE A BURNING BUILDING

- ✓ The last one out of the room should not lock, the door, just closes it. Locking the door hinders the fire department's search and rescue efforts.
- ✓ Proceed to the exit as outlined in the Emergency Action Plan. Follow the exit signs to the exit. Proceed in a calm and orderly manner. If one egress path is blocked by fire and smoke, use the other one.
- ✓ NEVER NEVER use elevators under any circumstances during a fire emergency.
- ✓ Stay low to avoid smoke and toxic gasses. The best air is close to the floor, so crawl if necessary.
- ✓ If possible, cover your mouth and nose with a damp cloth to help you breathe.
- ✓ If you work in a building with multiple stories, a stairway will be your primary escape route. Most enclosed stairwells in buildings over two stories are "fire rated." Enclosure stairwells will provide you a safe means of exit; descend the stairs slowly and carefully.
- ✓ Once in the stairwell, proceed down to the first floor. Never go up.

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- ✓ Once outside the building, reports to a predetermined safe area, usually 50 feet away, once outside take a headcount of everyone who evacuated the building.



WHAT TO DO IF TRAPPED IN A BURNING BUILDING

- ✓ If you are trying to escape a fire, never open a closed door without feeling it first. Use the back of your hand to prevent burning your palm. If the door is hot, try another exit. If none exists, seal the cracks around the doors and vents with anything available.
- ✓ If in a room, use wet towels to seal the space under the door and prevent the entry of smoke. Seal cracks around the door with masking tape if necessary.
- ✓ If trapped, look for a nearby phone or use your cell phone and call the Campus Safety Department (954-201-HELP (4357)), giving them your exact location.
- ✓ If breathing is difficult, try to ventilate the room, but do not wait for an emergency to discover that window cannot open.
- ✓ If you cannot contact the Fire Department by phone, wave for attention at the window. Do not panic.



WHAT TO DO IF SOMEONE CATCHES ON FIRE

If you should catch on fire:

- ❑ **STOP - where you are**
- ❑ **DROP - to the floor**
- ❑ **ROLL - around on the floor**

This will smother the flames, possibly saving your life.

Just remember to **STOP, DROP, and ROLL.**

If a co-worker catches on fire, smother flames by grabbing a blanket or rug and wrapping them up in it. That could save them from serious burns or even death.



SUMMARY

KNOWLEDGE ? AWARENESS ? PREPARATION

These are your keys to preventing and surviving fires wherever they occur.

- ❑ **Call 911**
- ❑ **If it safe to so call Campus Safety at 954 -201-HELP (4357)**
- ❑ **Close all doors while exiting to prevent the spread of smoke/fire. DO NOT LOCK DOORS**
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