

UAB

ENVIRONMENTAL HEALTH & SAFETY

The University of Alabama at Birmingham

**Fire & Life Safety
Program Manual**

2021

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University of Alabama at Birmingham Fire & Life Safety Program Manual

Fire and life safety at the University of Alabama at Birmingham (UAB) is governed by federal, state, and local, standards including University Policies and University Standard Operating Guidelines ultimate jurisdiction for fire safety lies with the Authority Having Jurisdiction (AHJ) the City of Birmingham Fire Marshal's office. The office of EH&S campus safety is responsible for the day-to-day fire prevention, inspection, and program oversight. However, everyone, whether faculty, staff, student, or visitor on our campus shares a role in fire safety.

UAB is committed to providing a safe environment for building occupants and emergency response personnel.

Program Requirements

The basis for the Fire and Life Safety Program at UAB is provided for by UAB University policies and procedures.

Applicable Codes & Standards

The City of Birmingham Fire Marshal's Office and the University of Alabama at Birmingham have adopted the National Fire Protection Association *Life Safety Code*®, the *International Fire Code*® and all referenced codes and standards as the primary guide for fire and life safety. It is important to note that this code is not all inclusive and that other codes and standards may also apply. Some of these include, but are not limited to:

- *International Building Code*
- *International Fire Code*
- *National Fire Protection Standards*
- *International Mechanical Code*
- Americans with Disabilities Act

Fire and Life Safety Program

The Fire and Life Safety Program at UAB involves numerous activities, programs, and procedures to help ensure that our campus is a safe place to work, live, and play. These program areas include fire prevention, emergency preparedness, preplanning, education, and response. The following information is provided as a general guideline for activities associated with fire and life safety. Additional information may be obtained by contacting Environmental Health and Safety at 934-2487 or <https://www.uab.edu/ehs/> Links are provided throughout this document.

Automatic External Defibrillators (AED's)

- If you would like more information on AED's; to include training requirements, resources, and program requirements please reach out to campus safety. We can assist you in putting your AED plan together for your facility._
<https://www.uab.edu/ehs/>

Emergency Action Plans/ Fire Evacuation Drills

Every facility at UAB is required to have a written Emergency Action Plan. Each Building Administrator is responsible for developing and maintaining a comprehensive plan for emergency situations that may occur in their buildings. The best way to develop this plan is to form an implementation committee with members from each building floor and each department. A typical Emergency Action plan will generally include but not limited to:

- Building specific emergency contacts,
- Emergency procedures for fire,
- Severe weather, bomb threats,
- Active shooter, chemical spills,
- Guidelines for evacuation of persons with special needs
- Accident/Injury reporting procedures.

To ensure that building occupants are prepared for an emergency evacuation, drills must be conducted on a regular basis. Evacuation drills may be used to vacate a building for several reasons such as fires, gas leaks, chemical spills, bomb threats or other similar emergencies and emphasis should be placed on orderly evacuation rather than on speed.

These drills should:

- Involve all occupants. Everyone should leave the building when the fire alarm sounds. A person may be exempt from an evacuation drill if it will cause undue hardship (e.g., interrupt an experiment or procedure that cannot be halted); however, exemptions are strongly discouraged without permission
- Occupants should close (not lock) doors as they leave the work area, provided this does not violate security procedures. Items that require security may be placed in a locking file cabinet or desk drawer on the way out.
- Floor captains should check all rooms and close doors on their way out.
- All building occupants should gather at the predetermined location. This location should be away from the building to prevent injury to the occupants from and to not interfere with emergency responders.
- Floor proctors should take a "head count" to determine if all occupants have left the building.
- Upon completion of the drill, an evaluation of the drill shall be conducted and filed with EHS to identify any areas of improvement and to document the drill.
- More information, including a template for developing an emergency evacuation plan can be found on the EHS website-. <https://www.uab.edu/ehs/>

Fire Detection and Notification

Most occupied buildings on the UAB campus have automatic fire detection/notification systems installed in them. These systems are monitored at the UAB Communications Center and University Police. These systems utilize several different types of detection devices including heat, flame, and smoke detectors, relays from suppression/extinguishing systems, and manual pull stations to activate the notification portion of the system.

Detection Devices

- **Heat Detectors:** Heat detectors respond to the convection energy in hot smoke and fire gases (i.e., heat). Heat detectors are normally located in laboratories, mechanical rooms, storage areas, break rooms, and areas that could produce high levels of dust, steam, or other airborne particles.
- **Smoke Detectors:** Smoke detectors respond to the solid and liquid aerosols produced by a fire (i.e., smoke). Since smoke detectors cannot distinguish between smoke particles and other particles such as steam, building occupants must be aware of detector locations and be considerate when working around them. Smoke detectors are normally found in exit corridors, office areas, assembly areas, and sleeping areas.
- **Flame Detectors:** Flame detectors respond to the presence of a flame. Flame detectors may be found in specific areas where a fire will develop rapidly, and the hazard is greater than what is expected in normal locations within buildings such as chemical storage rooms. These devices are most commonly used in conjunction with a fire extinguishing system.
- **Manual Pull Stations:** Manual pull stations, when activated, will initiate the buildings fire alarm notification system. Pull stations are generally located near exit stairways, near building exits, or in long corridors. Occupants should be familiar with the location of these devices should one need to initiate a building evacuation. A minimum of 36" clear width must be maintained around manual pull stations as required by code.

Building Notification

The building notification system may consist of horns, bells, speakers, strobes, or a combination of these devices. It is important to maintain a clear line of sight to any of these devices to ensure they can be seen and/or heard.

Fire Doors

Fire doors serve as a barrier to limit the spread of fire and restrict the movement of smoke. Unless these doors are held open and released by the building fire alarm system fire doors should always remain closed. Do not tamper with fire doors or block them with equipment, potted plants, furniture, etc.

Fire doors are normally located in stairwells, corridors, and other areas required by code. The door, door frame, locking mechanism, and closure are components that make up a rated fire door assembly. Doors may be rated between 1 and three hours. A fire door rating indicates how long the door assembly can withstand heat and a water hose stream. All fire doors will have a label affixed to the door indicating the manufacturer, rating, serial # of the door and other information. It is important to not remove, paint, or in any way damage or destroys the label.

- For your safety and to maintain the integrity of fire doors there are several important items to remember:
- Know which doors are fire doors and keep them closed to protect building occupants and exit paths from fire and smoke.
- Never block a fire door with a non-approved closure device such as a door stop, blocks of wood, or potted plant.
- For fire doors with approved closure devices, make sure that nothing around the door can impede the closure.
- Never alter a fire door or assembly in any way. Simple alterations such as changing lock or installing a window can lessen or completely void the fire rating of the door.
- Doors to offices, laboratories, and classrooms help act as smoke barriers regardless of their fire rating. Keep these doors closed whenever the room is unoccupied.
- A closed door is the best way to protect your path to safety from the spread of smoke and fire.

Fire Extinguishers

Fire Extinguishers, when used properly, play a vital role in containing and/or extinguishing small fires. Portable fire extinguishers are designed to be used on small, contained fires, by properly trained individuals. Lives could be saved, and property damage reduced, when fire extinguishers are used correctly.

Know the location of the closest extinguisher. A quick response is crucial to effectively put out a fire. You should not have to travel any farther than 75 feet to get to an extinguisher. This distance may be reduced in labs and other high hazard areas. It is important that extinguishers be conspicuously located, in view, and where they are readily accessible and available for use in the event of a fire.

There are five classifications for fires. These are:

- Class A: Fires involving ordinary combustibles, such as paper, wood, plastic, cloth, and trash.
- Class B: Fires that involve flammable or combustible liquids, such as gasoline, solvents, oil, paint, and thinners.
- Class C: Fires that involve energized electrical equipment or appliances.
- Class D: Fires involving flammable metals, such as magnesium and sodium.
- Class **K**: Fires that involve cooking media, such as vegetable oils.

There are fire extinguishers designed for each type of fire. Some extinguishers can be used on more than one type of fire.

Class A extinguishers are to be used only on Class A fires. This extinguisher contains only water and compressed air and is not to be used on B, C, D, or **K** fires.

Carbon Dioxide extinguishers are recommended for Class B and C fires. Halon or other similar type fire extinguishers are also rated to be used on B and C fires.

Dry Chemical extinguishers come in two types. One type is rated for B-C fires, and the other is rated for A-B-C fires. The ABC or multipurpose extinguisher is the most common extinguisher found on the UAB Campus.

Class D extinguishers are specialized to be used only on flammable metals. Never attempt to extinguish a Class D fire with anything other than a CLASS D extinguisher.

Class K extinguishers are designed to be used on flammable cooking oils. They are to be used in conjunction with a commercial fire suppression system.

There is no extinguisher that is designed to be used on all types of fires. It is important to know your fire extinguisher and its limitations

Inspection and Maintenance

Campus Maintenance conducts regular inspections of fire extinguishers. The department also services extinguishers that have been used and performs the required maintenance and testing of extinguishers. Once used, fire extinguishers must be serviced or replaced. If an extinguisher has been used, is missing, needs to be relocated, or any other type of service, contact Campus Maintenance for assistance.

Portable fire extinguishers are located throughout buildings across the campus. They are installed according to National Fire Protection Association codes and standards. Extinguishers are readily accessible in hallways, near exits, and in areas containing high fire hazards. Never block access to an extinguisher.

Using an extinguisher: To use a fire extinguisher you must remember the *PASS*- word.

- **Pull** the ring-pin (held in place by a plastic seal) to "un-lock" the operating lever.
- **Aim** the nozzle at the base of the fire.
- Squeeze the lever completely
- Sweep the extinguishing agent from side to side until the fire is extinguished

The normal operating distance of different extinguishers will vary considerably. A dry chemical extinguisher will have a discharge range of 8-10 feet, while a Carbon Dioxide extinguisher may only reach 5-6 feet.

Remember:

- Only attempt to extinguish small, contained fires. No larger than a trashcan.
- Make sure you are properly trained, and capable of fighting the fire
- Be certain that you have the correct extinguisher for the type of fire
- Always keep a clear, unobstructed exit
- Know two ways out of a room if possible.
- Never turn your back on a fire
- Fires may re-ignite, so be

prepared Training:

Learn how to use a fire extinguisher before an emergency occurs. EHS provides training in the use of portable fire extinguishers. Participants will learn about the different types of extinguishers, and how to use each type. Make sure you have the correct extinguisher for the type of fire to be extinguished. All extinguishers have a label that states what type of fire they can be used on and this will be explained to further assist occupants in selecting the proper type of extinguisher. For more information visit the EHS website at: <https://www.uab.edu/ehs/>

Fire and Life Safety Inspections (Hazard Surveillance)

Fire and life safety inspections are conducted at least annually in "High Hazard" UAB facilities. The goal of these inspections is to help identify potentially unsafe practices and conditions in UAB facilities. These are not surprise inspections. EHS will notify the building Administrator or facility coordinator prior to inspecting a facility. The Campus Maintenance General Mechanic for the building being inspected will also on most occasions accompany the Campus Safety Inspector.

Common items included in a fire and life inspection are:

- Access to and identification of the facility for emergency responders
- Location of and access to emergency notification and suppression systems
- Fire extinguishers location, operation, and current inspections
- Means of egress and verifying that egress components are unobstructed and in working condition (stairwells, corridors, fire doors etc.)
- Emergency exit lighting and emergency exit sign operation and location
- Electrical safety (extension cords, power strips etc.)
- Storage of materials (24" from ceiling, 18" from sprinkler heads).
- General Housekeeping (amount of materials that contribute to combustible load) see combustible load page.
- Presence of ignition sources
- Flammable and combustible storage
- Cylinder use and storage
- Mechanical room storage

At the conclusion of the inspection a report is generated and sent back to the building Administrator to be disseminated to the building occupants for them to take necessary actions to remediate any inspection deficiencies along with the Campus Maintenance Supervisor to correct any maintenance related issues.

In addition to regular facility fire and life safety inspections, EHS conducts inspections in our residence halls, food facilities and maintenance spaces as well. Residence hall inspections are conducted during the first few weeks of the fall semester and a second time during spring or summer semester.

Fire Prevention

Fire Safety is everyone's responsibility. In fact, you are your office's best fire inspector. The following section will provide ways you can help prevent fires:

Fire prevention starts with good housekeeping. Loose papers, trash, and other combustible items such as cardboard boxes are a fuel source for fire. If these combustible items are stored neatly and properly the risk of fire can be greatly reduced. Here are some things to be mindful of when it comes to combustible items:

- Never store combustible items within 24 inches of the ceiling.
- If you have sprinkler heads in your building keep ALL storage at least 18 inches below the sprinkler heads.
- Keep combustible items away from electrical sources that may produce heat and/or sparks. (Outlets, multiple adapters, etc.)
- Keep quantities of combustible items to a minimum.
- Never store combustible items in an exit corridor or stair enclosure.
- Flammables and combustible materials stored in proper locations (cabinets, containers etc.)
- Mechanical, electrical, and other similar rooms may not be used for storage or any other use.

Fire Reporting

If you discover a fire in a facility on campus you should:

Locate and activate the nearest manual pull station (Pull stations should be located near building exits) to initiate a building evacuation.

Dial 4-3535 or 911 from any campus phone and if calling from a cell phone dial 205-934-3535 to report the fire and provide any information such as;

- Building Name
- Building Number
- Specific Location
- Room Number
- Type of Fire
- Any injuries
- Any other information requested by the emergency operator.

If you are trained in the proper use of portable fire extinguishers and are not in immediate danger you may attempt to extinguish the fire (see Fire Extinguishers).

Also assist any physically disabled occupants on upper floors to an approved shelter in place location such as a fire/smoke rated stairwell.

Fire Suppression

UAB uses various types of fire suppression equipment including portable fire extinguishers, water sprinklers, special gas extinguishing systems, cooking hood systems, and fire hose/standpipe systems. The following sections discuss each type of fire suppression equipment.

Sprinkler Systems:

- The purpose of a water sprinkler system is to contain and to minimize the spread of a fire, but is often successful in extinguishing fires. Sprinkler heads are activated by heat. Generally, if one is activated not all the sprinklers in a building will discharge. Only in specialized sprinkler systems are they connected to smoke detectors or manual pull stations.

To ensure that sprinklers are effective in the event of a fire:

- Maintaining a minimum of 18 inches of clearance below the sprinkler head is required to any equipment or stored items.
- Do not hang drapes, curtains, tarps, etc. that will interfere with the spray pattern of the sprinkler.
- Never attach or hang anything from sprinkler piping or sprinkler heads
- Do not paint or damage sprinkler heads in any manner.

Fire Extinguishing Systems:

- Special work areas such as computer server rooms or bulk chemical storage rooms may contain specialized gaseous fire extinguishing systems such as carbon dioxide (CO₂), FE 13, FM 200, or Halon 1301 in lieu of water based fire suppression systems. These systems work by displacing the oxygen in the room to a level that will no longer support a fire. To ensure that the system operates as designed, the area or room(s) protected must have its structural integrity preserved to maintain the required concentration level of the gas. There should be no penetrations through walls, ceilings, or floors and doors should be kept in the closed position.
- Once a system is activated, the low level of oxygen is also dangerous to humans. Caution should be used when working in areas where these oxygen-depriving extinguishing agents are used. Manually operated systems, such as a pull-station or push button, should have signs posted indicating it will activate the agent. ***Do not*** enter a room that has discharged an oxygen-depriving agent until it has been ventilated and appropriate tests of the atmosphere have verified it is safe to enter.

Fire Hoses and Standpipe Systems:

1. A standpipe system is an arrangement of piping, valves, hose connections and allied equipment installed in a building or structure for the purpose of manually extinguishing a fire. Fire hose cabinets are in several buildings near or in the exit stairwells and in corridors. UAB holds the stance that employees should only attempt to extinguish a fire with a portable fire extinguisher. Local fire department responders will use the standpipe system in the event of a fire in a building. Access to these systems should be always maintained and should not be blocked by any equipment, chairs, desks, etc.

Candles & Incense (Open Flame)

The use of candles, incense burners, oil lamps are strictly prohibited by UAB faculty, staff, and students.

General guidelines include:

- Candles, incense burners, oil lamps or other personal items that have open flames or that smolder, are prohibited in all campus buildings including: work areas (individual or group), conference rooms, restrooms, etc. This restriction applies to such items regardless of whether the item has been lit. Wax warmers may be used as intended by the manufacture and in accordance with the manufactures directions, but may never be used when unattended.
- The use of candles does not apply to such devices used in the course and scope of University or Agency sponsored research or activities necessary to conduct business operations. If the burning of a candle(s) is permitted under the above-mentioned exemption, the candle must be in a glass or similar container and kept away from combustible materials.
- Students living in residence halls are governed by similar but separate rules as set forth by Student Housing.

Combustible Storage

One of the most common violations of general fire safety practices is that of improper or excessive storage of combustible materials. By storing excess combustible materials improperly, you not only increase the potential for having a fire, but also increase the potential severity of a fire. To reduce the hazards associated with combustible storage, please review the following:

- Never store combustible materials in hallways, corridors, stairwells, or mechanical rooms.
- In non-sprinkler buildings when stacking combustible materials, leave at least 24" from the top of the storage to the ceiling.
- In sprinkled buildings when stacking combustible materials, leave at least an 18" clearance from the top of the storage to the ceiling.
- Keep only what you need. Throw away any unneeded combustible materials.
- Purchase materials in the smallest volumes necessary.
- At work locations, keep only those chemicals that are needed for the present task.
- Do not let hazardous wastes accumulate.
- Store products, including wastes, in proper locations
- Keep flammable materials separate from other processes and storage areas

Compressed Gas Cylinders

Use and Storage of Compressed Gas Cylinders of all shapes and sizes are used all over campus for everything from welding to research. There are two types of hazards associated with the use, storage, and handling of compressed gas cylinders: the chemical hazard associated with the cylinder contents (corrosive, toxic, flammable, etc.) and the physical hazards represented by the presence of a high-pressure vessel in the laboratory. Some cylinders can be pressurized up to 2,200 pounds per square inch (psi). If the cylinder is improperly secured and falls so that the valve is damaged, it can release all that pressure very suddenly through a hole no bigger than a pencil. This creates a very dangerous and destructive missile! UAB requires the following guidelines be used:

- All compressed gas cylinders are required to be clearly labeled as to the contents and any associated hazards. Deteriorated or corroded labels must be replaced.
- All cylinders without adequate labeling to identify contents shall be labeled as "Contents Unknown" and returned to supplier. Color coding is not a reliable method of determining contents.
- Compressed gas cylinders shall be transported on wheeled carts equipped with straps or chains to secure the cylinder to the cart. Rolling or dragging cylinders is not recommended due to the possibility of damage to the cylinder and injury to personnel.
- Cylinder valve protection caps shall always remain in place other than when cylinders are connected for use and secured.
- All compressed gas cylinders must be secured upright and in place to prevent falling by using approved chains, straps, stands or carts. When delivering new cylinders, if the cylinder cannot be safely secured using an approved method the delivery personnel SHALL NOT leave the cylinder.
- Delivery personnel may not leave tanks unsecured at any time. Tanks must not be left unsecured at the delivery truck or on the truck lift gate, etc.
- It is the responsibility of the users of the compressed gas cylinders to connect and disconnect cylinders for pickup and delivery. Delivery personnel shall not connect or disconnect cylinders.
- Cylinders not required for current use should be stored outside of the work area in a protected, fenced, outdoor storage area. If stored indoors, cylinders should be stored in well ventilated areas away from sources of heat and ignition. The area must be secured from unauthorized access with appropriate signage on the outside to inform emergency personnel of potential hazards. Storage rooms must meet the Code requirements of NFPA 55 Standard for Storage, Use and Handling of Compressed and Liquefied Gases in Portable Containers.
- Cylinders shall not be stored in corridors.

- Automatic pressure regulators or reducing valves shall be used on all gas cylinders to maintain a uniform gas supply at the correct pressure. Only regulators listed by agencies such as Underwriters Laboratories® or Factory Mutual should be used. Use only the appropriate, designated regulator for the specific gas to be used.
- Regulators for oxygen or fuel gas cylinders shall be equipped with a high pressure (cylinder pressure) and a low pressure (delivery pressure) gauge, a flow control valve, and a delivery adjustment screw.
- Do not use oil around oxygen gauges, valves, or connectors. Follow supplier's recommendations for cleaning of the cylinder outlet fittings and openings.
- Close the cylinder valve when the equipment is not in use or unattended overnight.
- Cylinders containing toxic or flammable gases must be stored in an approved storage area. The use of the smallest possible cylinder of toxic or flammable gases is recommended.
- Cylinders containing oxidizing gases, such as oxygen and nitrous oxide, shall be stored separately from flammable gases or liquids in accordance with NFPA 55 Standard for Storage, Use and Handling of Compressed and Liquefied Gases in Portable Containers.
- Empty cylinders shall be so identified and stored separately from full or partially full cylinders.
- Compressed gas cylinders shall be used only for their intended purposes.

Liquefied Petroleum Gas (LPG) (Examples Propane, Butane)

Most locations on campus are not appropriate for use and storage of LPG products. Environmental Health and Safety !!!JIn be contacted for consultation and approval prior to the use of any LPG product at UAB.

The State of Alabama LPG Board regulates the sale and use of LPG, including butane and propane. In addition, the Liquefied Petroleum Gas Code (NFPA 58) provides regulations on the use of LPG as well. These regulations govern several types of LPG-powered equipment and procedures including the following:

2. Forklifts
3. Floor buffers
4. Cooking and heating equipment
5. Laboratory equipment

Exhaust fumes may contain carbon monoxide which can present a health hazard. Exhaust can also create smoke which may activate a smoke detector. Take special precautions to ensure adequate ventilation when using these machines indoors.

Because LPG is extremely flammable, it is a potential fire hazard. Do not store LPG near heat, flame, or other ignition sources. In addition, do not leave portable LPG containers larger than 16 oz. in a building overnight. Instead, place portable LPG containers and LPG equipment outside in a storage area that is at least 25 feet away from other buildings, combustible materials, roadways, railroads, pipelines, utility lines, and the property line. This storage area should prevent unauthorized entry and have a portable fire extinguisher within 25 feet.

When using portable LPG containers, the requirements listed below shall be followed:

- Inspect containers for excessive denting, bulging, gouging, and corrosion and check hoses for cracks and deterioration; containers displaying any of these signs shall be removed from service.
- Label all containers as Flammable and as LP-Gas, Propane, or Butane.
- Cylinders shall be located to minimize exposure to excessive heat, and physical damage.
- Cylinders shall be stored away from exits, stairways, or areas normally used or intended for the use of egress for occupants.

- Quantities more than this amount shall be stored outside in a lockable ventilated enclosure of metal exterior construction; protection against vehicle impact shall be provided

LPG Powered Industrial Trucks

- Use of LPG Use of LPG powered industrial trucks shall follow the guideline for containers in the previous section, in addition to the following:
- LPG cylinders shall be refueled outdoors.
- The number of cylinders on an industrial truck shall not exceed 2.
- The size of a cylinder on an individual truck shall not exceed 45 pounds.
- Cylinder pressure relief valve discharge shall be directed upward within 45 degrees of vertical and shall not impinge on the cylinder, exhaust system, or any other part of the truck
- The discharge opening shall be provided with a protective cover.
- Trucks shall not be parked or left unattended without the cylinder shutoff valve being closed.
- Do not park truck near areas of excessive heat or near sources of ignition.

Construction and Renovation

The City of Birmingham Fire Marshal's Office serves the role as the Authority Having Jurisdiction (AHJ) for the University of Alabama at Birmingham (UAB). UAB Campus Safety operates under the umbrella of the Birmingham Fire Marshal's office enforcing all State, Federal and Local Codes and Standards for all UAB owned property, buildings, and structures on that property. All proposed construction, structural changes, or changes in the use, or any change effecting egress from a space within a building on the UAB campus, regardless of facility ownership, must be reviewed and approved by the City of Birmingham and UAB Campus Safety to address any fire and life

safety issues in accordance with all Interim Life Safety Measures Procedures. UAB Campus Safety has placed the following construction and renovation procedures in place:

- UAB Campus Safety will review all blueprints for construction and renovation projects that will take place on the campus.
- Campus Safety will attend all (PCC's) Preconstruction conferences to address all safety and Interim life safety Measures issues for the project.
- Campus Safety will issue any needed permits for the projects such as:
 - Hot work
 - Interim Life Safety Measures (ILSM)
 - Live Work
 - Fire/Smoke Wall Penetration
 - Fire Watch
- Campus safety will attend in Owner Architect meetings as needed to address fire and life safety concerns during project.
- Campus safety will conduct periodic walk through/inspections during renovations and construction projects.

When a ILSM permit is issued all the following must be followed but not limited to: (City (AHJ) and Permit requirements supersede all program requirements).

- All egress must be maintained and if egress must be obstructed than Campus Safety must be contacted and an alternate route must be implemented and all necessary notification put in place. (Notify Building Administrator who will let occupants know, proper signage showing blocked routes and direction to new routes)
- If alarm and sprinkler systems must be shut down for any period of time UAB Campus Safety and Birmingham Fire Dispatch must be notified, a Fire Watch Permit will be issued, all Fire Watch requirements must be followed and a logkept and submitted back to Campus Safety at completion of fire watch. Link to Fire Watch permit <https://www.uab.edu/ehs/>
- Fire Extinguishers shall be provided and maintained during course of project.

- o No smoking is enforced.
- o All combustible loads must be kept to a minimum
- o Good housekeeping must be enforced.
- o All dust control measures must be in place. (Partitions, walk off mats, any HEPA filtration that may be required, etc.)

Decorations

When decorating your area, there are several things that you must be aware of:

- Never hang anything from fire sprinkler piping or heads.
- Never obstruct fire alarm devices such as pull stations.
- Any combustible decorations such as curtains or drapes must be of a fire-resistant material.
- Never obstruct an exit or the visibility of exit signs.
- Never staple or tack light strings.
- Decorations should not be placed in exit corridors or stairways.

Holiday decorations are often fire hazards if not utilized properly. Follow these guidelines to improve fire safety during the holidays:

- Do not use live cut Christmas trees in University buildings. Use an artificial tree that is fire resistant.
- Do not place holiday decorations where they may block emergency egress (e.g., stairways, corridors, near doors, etc.)
- Only use decorations that are fire retardant.
- Practice good housekeeping by minimizing paper and other combustible decorations.
- Avoid using extension cords. If you must use an extension cord, use a heavy gauge cord, and place it in plain view. Make sure the cord does not pose a tripping hazard.
- Use FM or UL labeled electrical decorations.
- Do not light candles or use other decorations with open flame.
- Turn off lights when the room is unoccupied.

Electrical Safety

Extension Cord and Power-Strip Use

Many times, it is necessary to use extension cords or power strips (surge protectors) to reach a work area or to provide additional outlets. It is important not to overload outlets, protect cords, and follow the manufacturer's recommendation. Additionally, the following guidelines should be used while utilizing these items:

- Extension cords are for temporary use (defined as an 8-hour workday or less)
- Unplug and properly store cords when not in use
- Install permanent code compliant wiring for long term use.
- Extension cords or power strips must be plugged directly into a wall receptacle - no daisy chaining of extension cords, power strips or any combination is permitted
- Extension cords should be used for portable equipment
- Extension cords and power strips should be examined regularly for damage and removed from service if damage is found. No taping or splicing allowed
- Extension cords and power strips shall be FM or UL listed and should be equipped with over current protection
- Extension cords shall not be run above ceiling or under carpet or other similar materials.
- Extension cords must be placed as not to cause a trip hazard.
- Extension cords or power strips should not be used inside fume hoods
- Extension Cords should be 16 gauge or heavier, insulation must be adequate and for the intended purpose.
- Extension cords must be three prong with proper grounding utilized.
- Recommended length on extension cords of no more than 100feet.

Electrical Panels

Blocking electrical panels that house circuit breakers is a violation of both Occupational Safety and Health Administration (OSHA) regulations and National Fire Protection Association (NFPA) codes. These regulations require accessibility to the front of electrical panels to have a minimum of three feet of clearance and a minimum width to be the width of the equipment or 2.5 feet, whichever is greater. This assures that in case of an electrical emergency, there is a clear working space in front for quick access to the circuit breakers.

Having up-to date directories of circuit breakers also saves time during an emergency when power must be removed.

All panels that have had a knock out removed in the panel shall either be filled with a circuit breaker or an electrical panel blank. No use of tape or any other means of cover up unless approved by National Electrical Code or NFPA 70.

Electrical panels contain multiple junctions of live wires and other components, and they are required to be accessible at all times. Panels are also required to have a "dead front," per 29 CFR 1910.305(d). NFPA 70 describes a dead front as an area of the panel "without live parts exposed to a person on the operating side of the equipment." All live components must be covered in this way so that anyone using the circuit breaker is safe from electric shock. Electrical panel boxes in commercial buildings should be locked and accessible by trained personnel only.

An approved Lock out tag out program must be used if panel is to be de-energized for service to a building service, equipment, or machine. See EHS Lock out Tag out procedure <https://www.uab.edu/ehs/>

Space Heaters

Some general guidelines to remember when using space heaters are:

- Always use appliances that are UL or FM labeled.
- Space heaters must never be left on unattended, even if you are just going to step out for a moment.
- Only electric space heaters may be used.
- Portable space heaters are prohibited in sleeping quarters.
- Portable space heaters used shall be limited to devices where the heating element is limited to not more than 212°F (100°C), and to devices equipped with a safety "tip-over" switch which disconnects power if the device tips over.
- Space heaters should be unplugged when not in use.
- A minimum of 36" should be maintained from any combustible materials.
- Adequate space should be provided around space heaters to allow for air circulation.
- Space heaters should be plugged directly into wall receptacles and not into power strips.
- Frequent inspections of electrical cords for damage and to ensure a tight connection of the cord into the receptacle
- If heater begins to spark or produce an electrical smell, turn power off immediately and discontinue using the appliance.
- Space heaters must never be used in rooms with flammable gases.

Emergency Access and Egress

Emergency access and egress are critical during an emergency situation. Timing and quick response are essential to save lives and property. Effective emergency access ensures that fire trucks can reach a building. Unobstructed emergency egress ensures that building occupants can exit a building to safety.

Emergency access helps ensure that facilities and equipment remain available and unobstructed at all times to ensure effective fire detection, evacuation, suppression, and response. Emergency egress is defined as a continuous and unobstructed way to travel from any point in a public building to a public way. A means of egress may include horizontal and vertical travel routes, including intervening rooms, doors, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, courts, and yards.

Corridors, Stairways, and Exits

An exit corridor and/or stairway is a pedestrian pathway that allows direct access to the outside of a building and/or allows access to a building entrance and subsequent pathways to the outside of a building (i.e., an exit corridor is the quickest, easiest, and most direct pathway for leaving a building). Because exit corridors or passageways are the primary means of egress during an emergency, employees must follow the safety guidelines outlined in this section.

Follow these guidelines to promote safe evacuation in corridors, stairways, and exits:

- Keep all means of egress clean, clutter-free, and unobstructed
- Do not place hazardous materials or equipment in areas that are used for evacuation
- Do not use corridors or stairways for storage or office/laboratory operations
- Do not place locks, chains, or other devices that can defeat or obstruct an exit without prior written permission from EHS
- Corridors may not be used as an extension of the office or laboratory.

Flammable and Combustible Liquids

Definitions:

- Flash Point - The lowest temperature at which vapors above a volatile combustible substance will ignite in air when exposed to a spark or flame
- Flammable Liquid - Any liquid that has a closed cup flash point below 100°F.
- Combustible Liquid - Any liquid that has a closed cup flash point at or above 100°F.

Flammable Liquids are further classified as Class I, Class IA, IB and IC liquids. Combustible liquids are further classified as Class II, Class III, Class IHA and Class IIIB liquids. You can identify if you are working with flammable or combustible materials by referencing the flash point on the product label or MSDS sheet.

When working with these materials, precautions should be taken to prevent the ignition of flammable vapors by sources such as the following: open flames, hot surfaces, radiant heat, smoking, cutting, and welding, sparks, static electricity.

Make sure you are in a well ventilated and/or exhausted area to allow dangerous vapors to dissipate or escape the area. Only acceptable containers that meet the requirements set forth in the

Flammable and Combustible Liquids Code published by the National Fire Protection Association (NFPA) should be used with flammable and combustible liquids.

The allowable size of these containers is dependent upon the class of liquid and the container type and is specified in the Flammable and Combustible Liquids Code (NFPA 30).

Flammable and combustible liquids should be stored inside a flammable liquid's storage cabinet with an aggregate amount of liquid stored in an individual storage cabinet not to exceed 120 gallons.

Smoking

Smoking is prohibited in all areas of the university buildings, vehicles, and in all University owned and leased housing (apartments, residence halls), and all indoor air space of University owned athletic facilities and outdoor public seating areas in athletic arenas. Where smoking is allowed, it is important to fully extinguish any smoking material or dispose in an appropriate disposal container. Additional information may be found at:

<https://www.uab.edu/policies/content/Pages/UAB-HS-POL-0000110.aspx>

Generators

- **Manufacturer:** Follow all manufacturer recommendations and specifications for the unit being utilized. Checks should be conducted in accordance with manufacturer specifications to include any cracks, dents, or corrosion to the body of the unit.
- **Electrical:** Ensure that the cords and wires on the generator are not frayed or exposed. Use only cords and components that are listed and approved for the intended use and load. Outdoor locations must be 3-pronged and grounded. All equipment must bear a listing mark from an approved UL testing laboratory.
- **Fuel:** Regularly check generator for any fuel leaks. Hot fueling is not permitted. Check that the generator is off and cool before attempting to refuel. Label the generator fuel clearly and store it in a cool location away from patrons and other combustible materials. Fuel storage is not permitted under tents or inside university facilities.
- **Ventilation:** Carbon monoxide--an odorless, tasteless, and colorless gas--starves the body of oxygen, causing nausea, headaches and even death. To avoid exposing anyone to carbon monoxide poisoning, position the generator and its exhaust system away from where patrons will assemble. Never operate a generator indoors, under tents or in enclosed spaces.
- **Placement:** Generators must be placed away from patrons. A barrier should be placed around the generator to prevent thermal burns from heated parts, while not obstructing egress. Cord management is extremely important to avoid trip hazards. Clear a wide pathway to the generator to prevent falls.
- **Moisture:** Water easily carries electrical currents. Check that the generator is positioned in a dry location. Do not operate the generator during wet weather of any kind.