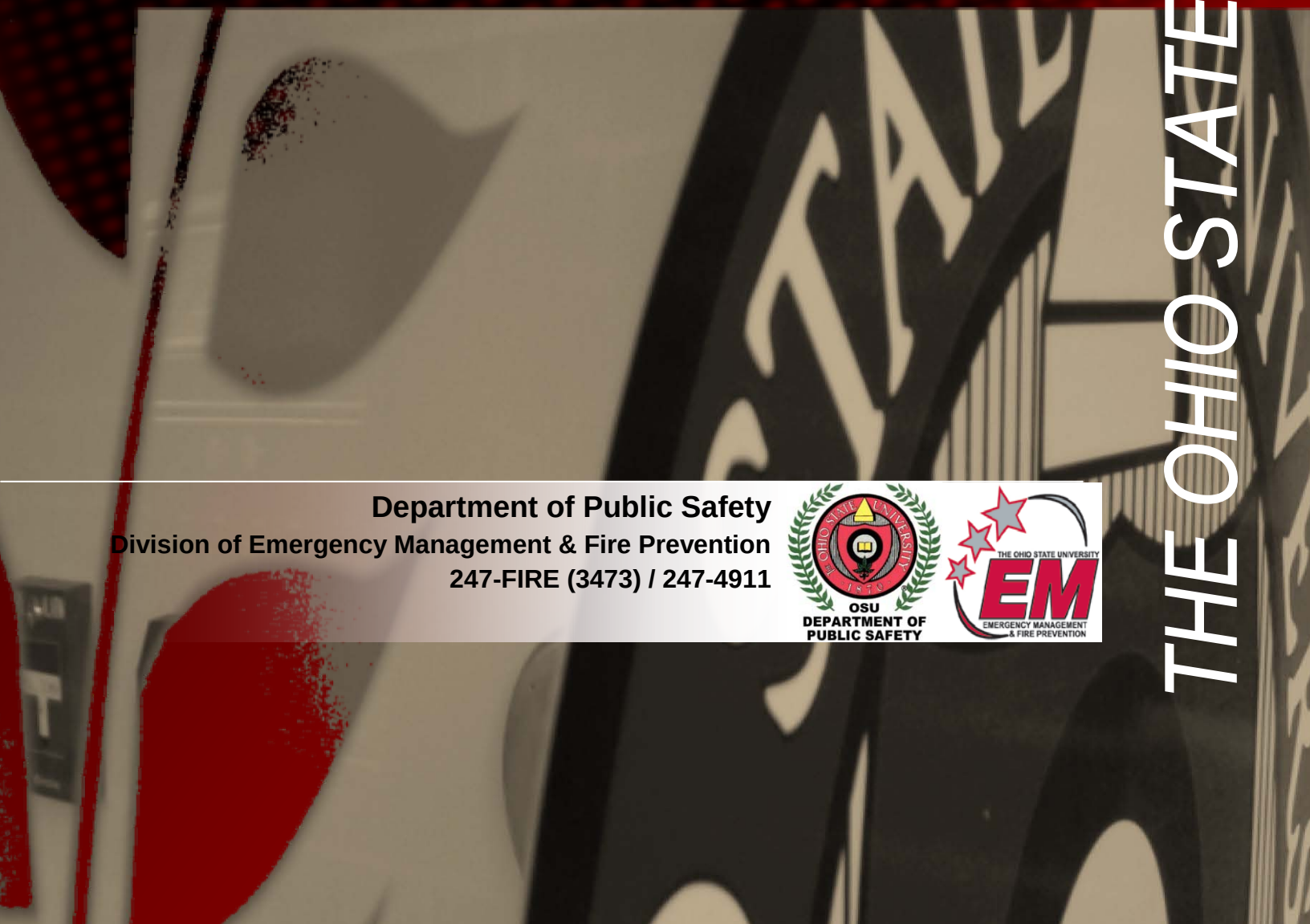
Fire & Life Safety

Compliance Guide

THE OHIO STATE UNIVERSITY



Department of Public Safety
Division of Emergency Management & Fire Prevention
247-FIRE (3473) / 247-4911

OSU DEPARTMENT OF PUBLIC SAFETY

THE OHIO STATE UNIVERSITY EM EMERGENCY MANAGEMENT & FIRE PREVENTION

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Smoking is prohibited in all University Buildings

"Clean Air/Smoke Free Environment"

INTRODUCTION

Purpose

The Ohio State University is committed to providing a fire-safe environment for its students, faculty, staff, patients and visitors, and to protect its property through an effective fire prevention, protection, preparedness and response program. The purpose of this Fire and Life Safety Compliance Guide is to assist the university community in working together to maintain an environment that reduces the risk of fire hazards.

The Fire Prevention and Life Safety Policy outlines how the university proposes to safeguard life and property from the hazards of fire and explosion arising from storage, handling or use of materials or equipment, and from conditions hazardous to life and property. The requirements of the policy are based upon compliance with Ohio Fire Code (2007), enforced by the State of Ohio Fire Marshal Office, State of Ohio Department of Commerce, as well as other applicable federal, state, and local codes and standards.

This Fire and Life Safety Compliance Guide was developed to provide detailed information on how to implement the requirements of the OSU Fire Safety Policy and elements of the Building Emergency Action Plan (BEAP) for individual buildings. It offers guidance on some of the most common fire and life safety issues, which if not properly addressed, can become fire code violations. This guide addresses four major areas: fire prevention, fire protection, fire emergency preparedness and fire response.

Scope and Application

The requirements in this guide apply to all university faculty, staff, students, volunteers and outside contractors working on university premises. The policy is applicable to all occupied or unoccupied facilities owned or leased by the university, activities including storage, handling and use of materials and equipment within the facilities, and new construction and renovation from the planning stage to project completion.

Responsibility

Students, faculty, and staff are responsible for complying with the procedures outlined in this guide, and any additional procedures specific to their department or building. Each individual must follow the fire safety and emergency evacuation procedure specific for his/her area and any specific instructions from the area Floor Evacuation Coordinators and Building Emergency Coordinators. All fire or smoke related incidents, regardless of its size, should be promptly reported by dialing **9-1-1**. Any unsafe condition and injury should be reported to the appropriate supervisor. The Division of Emergency Management & Fire Prevention (EMFP) is available to assist by providing technical/code information, guidance, training and education.

We look forward to working with our staff, students, and volunteers to provide a fire-safe environment at OSU. Please feel free to contact the OSU Division of Emergency Management & Fire Prevention for further information or clarification regarding fire and life safety issues.

IMPORTANT NUMBERS

DIVISION OF EMERGENCY MANAGEMENT
& FIRE PREVENTION
614-247-FIRE (3473)
614-247-4911

DEPARTMENT OF PUBLIC SAFETY
614-292-2121
(Non-Emergencies)
Or
9-1-1
Emergencies Only

FACILITIES OPERATIONS & DEVELOPMENT
614-292-HELP (4357)

ENVIRONMENTAL HEALTH AND SAFETY
614-292-1284

ENTERPRISE CONTINUITY MANAGEMENT
614-688-3086

ENTERPRISE RISK MANAGEMENT
614-247-8840

FIRE EMERGENCY RESPONSE

Fire Response Procedures

In case of a fire or a fire alarm, the following procedure is to be followed. Generally, the RACE procedure is used in all university facilities with some variations. Always consult and follow your building-specific Building Emergency Action Plan or posted evacuation procedures.

IF YOU DISCOVER A FIRE OR SMOKE CONDITION: *RACE*

- **R**escue any person in immediate danger.
- **A**larm - pull the fire alarm to alert everyone.
- **C**onfine the fire by closing all doors, where possible. Turn off electric and gas equipment in your area as you evacuate, if possible.
- **E**vacuate using the nearest stair exit. Follow the exit signs.
- **Extinguish** a small fire using a fire extinguisher, if trained.
- **Report** the incident by calling **911** from a safe location.
- **Report** any discharged fire extinguishers and any first-hand information that you might have.

IF YOU HEAR or SEE A FIRE ALARM SIGNAL or ANNOUNCEMENT:

- Follow the emergency procedure for your building and area.
- Follow the announcements on the public address system or instructions of your area floor captains.
- Evacuate or stand by and stay alert as instructed on the public address system.
- Follow the EXIT signs. Use Stairs. Do Not Use Elevators. Walk at a normal pace.
- Wait outside in the designated assembly areas at least 50 feet or more away from the building as instructed.
- Re-enter the building only after "All Clear" is announced by the OSU Public Safety or the Columbus Fire Department.
- If your departmental or building procedure calls for 'defend-in-place' strategy, follow it carefully.

PROCEDURE FOR PEOPLE WITH DISABILITIES

Note: Each Department should complete the "Emergency Evacuation Procedures for People with Disabilities" form in this Guide to develop their specific evacuation strategy. Refer to the OSU Building Emergency Action Plan (BEAP) for specific guidance on evacuation procedures for people with disabilities and roles and responsibilities for staff, faculty, and evacuation assistants.

- ***All occupants:*** report the presence of any person with a disability in the building to the fire department.
- ***4 Types of Evacuation:*** Horizontal, stairway evacuation, shelter in place, or seek an area of refuge.
- ***Evacuation Assistants:*** Assist individuals with evacuation, report to first responders.
- ***Floor Evacuation Coordinators:*** Assist individuals with evacuation, report to first responders.
- Do not evacuate vertically unless the person is able to ambulate.
- Do not use the elevators unless assisted by the fire department.

REMEMBER Fire Extinguisher Key Words: P.A.S.S. and ABC fire types:

P.A.S.S:

Pull the Pin,
Aim at the base of the fire
Squeeze the handle
Sweep Side-To-Side

ABC Fire Types:

Class **A**: Wood, Paper, Plastic;
Class **B**: Oil, Grease, Flammables
Class **C**: Electrical

Using the Fire Alarm Pull Box

As you walk towards an EXIT in the corridor or near the stairwell door, you should find at least one wall-mounted metal box - a fire alarm pull box. In case of fire or smoke, just pull it down as indicated, an alarm should sound and an announcement might also follow, where equipped. The alarm system can also be activated automatically when a heat or smoke detector senses a fire or smoke condition.

Once the alarm is activated, notification goes to the Department of Public Safety, who then dispatches appropriate responders. Use the fire alarm pull box promptly to minimize the loss of life and property due to fire.

Some pull boxes have Plexiglas covers which when lifted, produces a local warning sound. Note that this is not a fire alarm sound. To activate the fire alarm throughout the building, you must pull the inner pull box.

To ensure that the system will protect you, you should know at least two pull box locations in your area. Maintain pull boxes free of obstructions and clearly visible at all times.

Report any fire alarm related concerns to:

OSU Fire Prevention: 614-247-FIRE (3473)

Fire Incident Response

In addition to the fire evacuation procedure, the following responses may be necessary:

Fire extinguishment

A fire extinguisher should only be used for small, incipient stage fires such as ones that might occur in a waste paper basket, and only by a trained individual. A large, developed or spreading fire should be handled by the responding fire department.

Clothing Fire and Burn Injury Response

What you do for a burn in the first few minutes can make a difference in the severity of the injury!

1. Stop the burning process. Remove the source of heat...if clothing catches fire, STOP, DROP, AND ROLL to smother out the flames.
2. Remove all burned clothes. Clothing may retain heat and cause a deeper injury. If clothing adheres to the skin, cut or tear around adherent area to preserve good skin tissue.
3. Pour cool water over areas burned. Keep pouring the cool water for at least 3-5 minutes (30-40 minutes for chemical injury). DO NOT PACK THE BURNED AREAS IN ICE! This may increase the extent of injury and cause hypothermia.
4. Remove all jewelry, belts, tight clothing. Etc. from over the burned areas and from around the victims neck. Swelling of burned areas occurs immediately!
5. Do not apply ointments or butter to wounds. These may cause infection due to their oil base and convert wounds to deeper injury.
6. Cover burns with a clean dry dressing, bandage or sheet.
7. Keep the victim warm!
8. Seek medical attention as soon as possible!

Rescue and Emergency Medical Procedure

All incidents requiring emergency rescue or medical treatment should be performed by the Columbus Fire Department or Department of Public Safety. **Call 9-1-1 to report an emergency.**

Fire or Smoke Incident Reporting

Students, staff, faculty, volunteers and outside contractors working on the university premises must immediately report all fire or smoke incidents regardless of its size or type, by calling **9-1-1** or **292-2121**. This notification must be made regardless whether or not the fire has been already been extinguished.

REPORT ALL FIRE OR SMOKE INCIDENTS BY CALLING 9-1-1!!!

The fire scene should not be disturbed. The removal of any items from the fire or smoke scene without prior approval is prohibited. This is to ensure that no evidence, which may be critical in incident investigation, is lost. The affected department should promptly notify the Department of Public Safety if there is a potential for further damage to property or injury to the occupants, if left on the fire scene. Where the department must act swiftly to protect valuable research or records from further damage, it should be made known to the Department of Public Safety. The Department of Public Safety documents all fires, regardless of size.

The area of the fire cannot be re-occupied until Public Safety Officials announce “All Clear”.

Responding Fire Department

Once a fire alarm is activated, notification goes to the Department of Public Safety who then dispatches appropriate responders. If you have specific emergency related information, share it with the responding Fire Department or OSU Public Safety personnel.

FIRE EMERGENCY PREPAREDNESS

Emergency Evacuation Plans

Each university-owned or leased facility has a Building Emergency Action Plan (BEAP) specific to that location. Each School/Unit Administrator and appropriate Building Emergency Coordinator (BEC) is responsible for developing a Building Emergency Action Plan, implementing it, and updating the BEAP in conjunction with Enterprise Continuity Management.

Upon discovering a fire or smoke condition or upon hearing a fire alarm, each building occupant should follow the instructions as noted on the posted evacuation floor plans, or follow the direction of the area floor captains or other emergency responders. Emergency procedures may require either total or partial building evacuation. Special "defend-in-place" procedures are also utilized for healthcare facilities and areas where critical activities are occurring. Procedures are available in one or more of the following formats:

Building Emergency Action Plans are required for all buildings. Copies of these plans should be made available to employees for review and use. Each written plan should outline the roles and responsibilities of departments or individuals during an emergency. Topics such as evacuation, communications, emergency procedures, fire safety, training, planning, and implementation are primary components of the BEAP. In addition, individual departments may add or create supplementary appendices to the BEAP to satisfy the needs of a specific area.

Emergency evacuation floor plans are also posted throughout the building to assist the building occupants in familiarization with their location, directions to exit, location of fire protection and safety devices. These plans also include a brief fire alarm emergency procedure. As you walk out from your work-area to an EXIT, you may find an evacuation floor plan posted on a wall, probably near the elevator lobby or fire alarm pull box. Take time to review the information for your safety.

Emergency Procedures for People with Disabilities

People with disabilities (PWD) are more at risk during an emergency situation. Their presence in the stairwells during an emergency, especially when stair landings are crowded with evacuating people, can significantly impede the flow of evacuation, potentially causing serious injury to both the evacuees and people with disabilities. Therefore, sheltering in place of people with disabilities, or their safe evacuation during fire or other emergencies, requires careful planning and preparedness. Appropriate procedures that are based on risk-factors, such as occupant and building characteristics, are required to prevent serious life safety hazards.

Emergency procedures for PWD have been developed to promote the safety of PWD and all other building occupants during emergency evacuation. It may also be used with appropriate modifications in areas where patients may be undergoing medical procedures and where discontinuation of any active patient care may pose an increased risk to the patient. In these cases, those who are directly involved in patient care should assure that all necessary communications, notifications, and safety measures outlined in the procedure are implemented.

Each department should develop and implement a departmental plan, using the "Emergency Evacuation Procedures for People with Disabilities" form provided in the 'Forms and Procedures' section of this Guide, in conjunction with the Building Emergency Coordinator (BEC), Enterprise Continuity Management, and the Division of Emergency Management and Fire Prevention (EMFP) as required. The department should ensure that this procedure is incorporated in the building-specific Building Emergency Action Plan (BEAP).

EMFP can offer technical assistance for emergency preparedness training for Evacuation Assistants and Floor Evacuation Coordinators as part of training programs, and for individual departments as requested.

Fire Exit Drills

Fire exit drills are conducted to provide an opportunity for students, faculty, staff and emergency responders to become familiar with the building fire safety features, to practice emergency procedures, and to ensure the efficient and safe use of exits.

To ensure that this practice is adequate, the Building Emergency Coordinator (BEC) in consultation with the Division of Emergency Management & Fire Prevention (EMFP) should arrange the drills so that they simulate probable varying emergency conditions specific to the building. The schedule for such drills should be representative of various shifts. All drills must be coordinated with the Building Emergency Coordinator (BEC) and EMFP in such a manner so as to minimize the disruption of normal business operations or patient-care to the greatest extent possible.

An unscheduled fire alarm evacuation may be considered as a drill, provided the Building Coordinator has completed the Fire Alarm Procedure Evaluation form (provided in 'Forms and Procedures' section) and submitted this form to EMFP for record keeping, and have addressed any evacuation related deficiencies.

All deficiencies identified during the drills must be promptly addressed. The Building Emergency Coordinator (BEC) or Floor Evacuation Coordinators must follow-up on the identified issues. EMFP or the Building Emergency Coordinator should report all building related items to the "Service2Facilities" number 614-292-4357, or via web based reporting as provided by Facilities Operations and Development.

Fire exit drills must be conducted utilizing the procedure established by EMFP and the Ohio Fire Code.

Occupancy Group B: Annually

Occupancy Group E: Monthly

Occupancy Group R-2: Quarterly

High Rise: Quarterly

For questions regarding the occupancy type of your building, contact OSU Fire Prevention by dialing 614-247-FIRE (3473) for more specific information.

Fire Alarm Procedure Evaluation

All building Floor Evacuation Coordinators, Evacuation Assistants, and Building Emergency Coordinators should complete a Fire Drill Checklist (in 'Forms and Procedures' section) to evaluate all fire alarms, including fire exit drills and fire incidents. The purpose of this form is to evaluate fire alarm response performance and identify and correct any deficiencies. The completed form is then forwarded to OSU Fire Prevention.

Fire Safety Training and Education

Fire and life safety training and education is provided to the university faculty, staff, students, area Floor Evacuation Coordinators and Building Emergency Coordinators as part of fire exit drills, hands-on fire extinguisher training, student orientation programs, and other training as necessary. Appropriate department managers or supervisors should ensure that their staff is adequately informed or trained in building-specific fire emergency evacuation and response procedure. The department managing the project should ensure that all outside contractor personnel are informed of the building fire emergency procedures.

Emergency Management and Fire Prevention offers fire and life safety education and training for the Building Emergency Coordinators, Floor Evacuation Coordinators and Evacuation Assistants as part of scheduled fire exit drills and extinguisher training programs. EMFP also offers additional training as requested. The following areas are covered during the quarterly pre-drill training session: explanation of the plan, how to sound an alarm; how to isolate the fire or smoke; how to evacuate; how to use a fire extinguishers; fire exit drill procedure; and the location of fire exits, pull boxes, exit stairwells and areas of refuge.

Fire Extinguishers

Portable fire extinguishers of appropriate type and size are provided as required in all areas. Extinguishers are inspected, tested, maintained and documented as required by the Ohio Fire Code. FOD, EHS, and EMFP must ensure compliance with this requirement as applicable. Fire extinguishers are provided throughout all OSU buildings for the use by trained students, faculty, and staff. The Division of Emergency Management & Fire Prevention (EMFP) provides related class room training during scheduled fire exit drills and also during hands-on training events. Each user should be familiar with the following basic safety information in the fire extinguisher fact sheet.

Portable fire extinguishers effectively extinguish 90% of all fires before fire department response. Research shows that fires get out of control in 3-5 minutes. A fire extinguisher is your First-Aid to fire fighting. An average extinguisher discharges completely in less than 1 minute. Therefore, it is important that you know at least two locations for extinguishers nearest to your work area, and know how to use it effectively.

Safety Precautions:

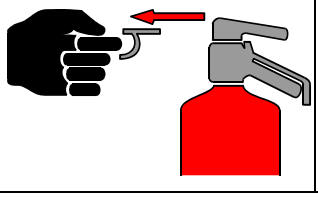
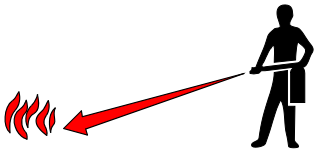
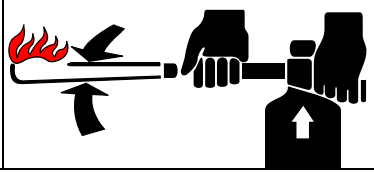
- Before using a fire extinguisher, ALWAYS pull the building fire alarm first.
- Do not attempt to use a fire extinguisher if the fire is large and spreading. Use it only for small fire-defense, e.g., a waste paper basket.
- Do not use the fire extinguisher if the lock pin is tampered, the cylinder is damaged, or if the pressure gauge pointer is in the 'RECHARGE' zone.
- Do not use the fire extinguisher if you are not trained and confident about using it.
- Read the extinguisher label to check if it is of right type for the kind of fire at hand. The label indicates one or more of the following fire classes and symbols, and specific applications for which it can be used.
- Protect yourself at all times:
  - Never block your escape route.
  - Stay low. Avoid breathing the heated smoke and fumes.
  - If the fire cannot be controlled, get out immediately to safety.

Types of Fire Extinguishers:

CLASS	SYMBOL	APPLICATION	IDENTIFICATION/DESCRIPTION
A	Letter "A" in Triangle	Ordinary Combustibles e.g. wood, paper, cloth	Stainless steel cylinder body with pressure gauge. Cools fire with pressurized water. Do Not use for flammable liquids (B) or electrical (C) fire.
B	Letter "B" in Square	Flammable liquids / gases (e.g., gasoline, oil, paint)	Red cylinder body and horn, No gauge. Deprives the fire reaction of oxygen with carbon dioxide. Home kitchen fire use.
C	Letter "C" in Circle	Energized Electrical Equip. e.g. powered appliances	Interrupts chemical chain reaction. Both carbon dioxide & ABC type extinguishers can be used.
ABC	A, B & C	All of the above applications Multipurpose ABC, home use	Red cylinder body. Interrupts chemical chain reaction of fire with dry chemical powder. Most commonly used.
K	Letter K	Commercial cooking, deep-frying with oil & fats. Minimum rating: 2A: 1B: C: K	Stainless steel cylinder body with long safety wand. Cools & Interrupts chemical reaction. Uses wet chemical with fine mist application. Relatively new.
AC	Water Mist Letter "A" Letter "C"	Trash, wood, paper and electrical equipment. For clean rooms; Minimum rating: 2A: C	White paint finish cylinder with long safety wand. Preferred for clean rooms, telecom, electronics equipment areas; Relatively new.

How to Use a Fire Extinguisher:

- Position yourself at a safe distance from the fire (e.g., 8-10 feet when using an ABC-type unit, 5-7 feet when using a CO2 unit, or 20-25 feet with Pressurized Water extinguisher).
- Remember the 'PASS' Procedure:
  - **P**ull the pin: This unlocks the operating lever and allows you to discharge the extinguisher.
  - **A**im low: Point the extinguisher nozzle/horn/hose at the base of the fire.
  - **S**queeze and hold the handle to discharge the extinguishing agent without any interruption.
  - **S**weep slowly from side to side as you hold the handle squeezed.
- Move closer carefully as the fire gets smaller and as you continue spraying.
- Watch the fire area until it has completely cooled down.
- Repeat the 'PASS' procedure if the fire re-ignites.
- Report the discharged extinguisher to Service2Facilities at 614-292-4357. Once used, the extinguisher must be recharged.

PULL PIN	AIM AT BASE OF FIRE	SWEEP SLOWLY FROM SIDE TO SIDE
		

BUILDING FIRE PROTECTION SYSTEMS

Fire Alarm Systems

As you walk in the hallways on your way to an EXIT – and usually near the stairwell door - you should find at least one fire alarm pull box. In case of fire or smoke, ALWAYS pull the alarm box first, regardless of the size of the fire. Upon pulling this box, an alarm should sound and verbal instructions might also follow.

The alarm system should also be activated automatically when a heat or smoke detector detects a fire or smoke condition – protecting both people and property even when the fire is not noticed by an individual. Once the alarm is activated, notification goes to the local fire department through the Department of Public Safety. Your awareness and prompt use of the fire alarm system can minimize the loss of life and property due to fire. To ensure that the system will protect you, you must:

- Evacuate during all fire alarms
- Respond to all alarms equally. Never assume that it is a test or a drill or a false alarm!
- Become familiar with your building's fire alarm system and alarm notification procedures.
- Know at least two pull box locations in your area.
- Know how to activate the fire alarm.
- Maintain pull boxes free of obstructions and clearly visible at all times.
  Report promptly to the Department of Public Safety, if the alarm is not heard properly in your area.
- Some pull boxes have Plexiglas covers which when lifted, produces a *local* warning sound. Please note that this is *not* a fire alarm sound. To activate the fire alarm *throughout* the building, you must pull the *inner* pull box.

Sprinkler Systems

Sprinklers are installed in many building areas to protect both life and property. In case of fire, each head detects temperature in the room and begins spraying water as soon as the room temperature exceeds a pre-determined value. Not all buildings or areas are equipped with sprinkler systems. Hazardous locations, storage areas and basement levels are generally protected with sprinklers as required by the Ohio Fire Code. Many new houses are now equipped with residential sprinkler system because most fire related deaths continue to occur in residential buildings.

As you store materials and boxes in your area, always maintain a minimum of 2 feet clearance between the ceiling and the storage. This clearance allows the sprinkler head to spray water uniformly and extinguish the fire effectively. If you notice any unsafe conditions such as a sprinkler head that is painted over or heavily laden with dust, blocked in any other manner or broken, promptly report this condition to the Division of Emergency Management & Fire Prevention and Facilities Operations and Development Office (FOD).

Fire and Smoke Doors

University buildings are equipped with fire rated doors and smoke-barrier doors. These doors prevent smoke and heat from traveling up stairwells and along corridors. OSU Facilities Operations and Development is tasked with maintaining these doors, including all hardware.

Fire Hose Connections

As you walk in the building corridor, you may find cabinets marked “Fire Hose Connection”. The fire department generally connects their fire hose to this connection. This area must be maintained free of obstructions and clearly visible at all times for effective fire fighting. If you see any fire hose connection that is not properly capped or a cap is missing, please report it to the Division of Emergency Management & Fire Prevention and Facilities Operations and Development.

FIRE PREVENTION

Avoiding Fire Code Violations

The University is required to comply with the fire safety regulations enforced by the State of Ohio Department of Commerce, Division of the State Fire Marshal and other granting and accrediting agencies. Therefore, the University is subject to various inspections by these agencies. The Division of Emergency Management & Fire Prevention inspects all buildings owned, operated and rented by the University at least on an annual basis, and the University Medical Center on a quarterly basis.

The following tips chiefly reflect the most commonly cited violations at OSU. Look for these items or conditions in your workplace, correct them or contact Emergency Management and Fire Prevention for assistance.

Maintain Safe Egress Corridors

- Maintain all egress corridors in a safe condition, available for immediate utilization and free of all obstructions.
- Do not store combustibles, hazardous materials in any egress corridors.
- Maintain fire alarm pull boxes, fire extinguishers, hose connections, safety showers, eyewashes, and other emergency response equipment free of obstructions and clearly visible at all times.
- Do not use doorstops, wedges or other unapproved hold-open devices with fire rated or smoke doors.

Maintain Safe Ceiling Clearances in All Areas:

- Maintain at least *24-inch clearance* between all material storage and ceiling.

Maintain Safe Chemicals Storage in Laboratories:

- Limit the quantities of flammable liquids to *ten* gallons per laboratory, and combustible liquids to *thirty* gallons per laboratory.
- Store flammable liquids not in active use in an approved flammable storage cabinet. Storage of flammable liquids is not permitted outside of an approved flammable storage cabinet in laboratories constructed or renovated after *December 2001*.
- Consult Environmental Health and Safety (EHS) for a safety review if quantities are expected to exceed the above limits.
- Keep all chemical containers, which are not in active use, properly capped
- Do not store any (empty or full) *chemical bottles or containers on the laboratory floor* without proper containment.
- Do not store flammables in standard refrigerator or freezer or cold room.
- Do not keep *peroxide former such as ethers* beyond the pre-printed expiration date on the label.

- Restrict the container size to *one gallon* for all flammable liquids, i.e., liquids with flash point less than one hundred degrees Fahrenheit. Flammable liquids received in original approved containers, which are of a *five-gallon* or less capacity, are exempt from this requirement.
- Do not dispense by gravity, any flammable liquids in quantities of one gallon or more. Use approved pumps taking suction from the top of the container.
- Collect hazardous waste in appropriate containers and transfer to the designated Hazardous Waste Storage Room within *three* working days.

Respect the Sleeping Giants: Compressed Gas Cylinders

- *Secure* all cylinders (in service or storage, full or empty) *adequately* with chains to prevent falling or being knocked over. A cylinder chained to a laboratory desk drawer is *not* adequately secured.
- Strictly limit the number of cylinders in a laboratory to a *two-month supply*. Make every effort to limit the number of cylinders of flammable compressed gas.
- Store excess cylinders in a separate *ventilated room* approved for that use.
- Group different types of gases in a laboratory *according to their properties*. Keep flammable gases (e.g., acetylene, ethylene oxide, hydrogen) separate from oxidizing gases (e.g., oxygen).
- Ensure that all cylinders are *properly marked* with the name of the contained gas.
- *Report* any damaged cylinder or valve immediately to Environmental Health and Safety and the supplier.

Electrical Safety:

- Replace or report promptly any *defective or damaged* wiring or equipment.
- Keep all wiring away from general traffic areas and *secure properly* to prevent falls/trips.
- Do not use *extension cords* as a substitute for permanent wiring.
- Plug heavy equipment like refrigerators or freezers *directly into an outlet.*
- Maintain proper *clearances* between electrical equipment and hazardous chemical storage.

Fire/Heat and Smoke Detectors:

- Smoke detectors are installed in your area to save life and property. If these devices are covered by plastic or other objects, report the condition to the Division of Emergency Management & Fire Prevention (EMFP) and Facilities, Operations, and Development (FOD).

Emergency Exits:

- Emergency exits are provided in all buildings. Report if any exit is blocked by storage or by snow/ice. Fire rated doors or smoke-barrier doors protect people and property in case of fire. Report to the Division of Emergency Management & Fire Prevention and Facilities Operations and Development if you discover that any such door is damaged or not working properly.

Door Stops, Wedges and Hold-Open Devices:

- The use of doorstops, wedges and certain type of hold-open devices are not permitted by the fire code.
- Where such devices are used to accomplish tasks such as environmental services related activities, moving furniture or materials through the doors etc., they must be promptly removed once the task is completed.
- Report use of such devices on a permanent basis in your area.
- The Division of Emergency Management & Fire Prevention must be consulted prior to the installation of a permanent hold-open device on any means of egress doors.
- Any individual or department creating a fire code violation by employing the use of unapproved doorstops, wedges or hold-open devices is responsible for any fire or life safety hazards created by such use.

Workplace fire safety conditions are evaluated on a regular basis to assure compliance with applicable Fire Codes. OSU facilities are regularly inspected by State of Ohio fire code enforcing and accrediting agencies. The Ohio Fire Code requires that all fire and life safety systems, including fire detection and alarms, sprinklers, fire hydrants, fire pumps and others be inspected, maintained, and tested regularly.

While these features are inspected by the professional, routine walk-through inspections by building occupants is also of extreme importance. For instance, a temporarily stored material in the EXIT passage may become permanent creating a life safety hazard, if not immediately addressed. Therefore, every individual should know and check his/her areas and activities for fire safety. Use the fire safety checklist in the Forms section. Always contact Emergency Management and Fire Prevention (EMFP) for assistance or appropriate corrective measures.

Compressed Gases and Cryogenic Liquids

All compressed gases and cryogenic liquids should be stored, handled and used in accordance with the requirements of the applicable Ohio Fire Code, OSU's Chemical Hygiene Plan (CHP) and OSHA regulations to minimize the hazards of fire, explosion and personal injury. Each department or laboratory storing or using compressed gases and cryogenic liquids should, as a minimum, comply with all the applicable safety requirements of this Guide.

The term Compressed Gas (CG) refers to gases and mixtures of gases stored under pressure in cylinders. CG can be mainly grouped as Liquefied gases (LG), Non-liquefied gases (NLG) or Dissolved Gases (DG). Cylinders containing compressed gas are used every day on campus without incident, but these gas cylinders may easily become a serious hazard if mishandled or stored improperly. A cylinder with broken valve can easily take off like an uncontrolled rocket or a pinwheel, bounding around the room and even breaking brick walls.

Many compressed gases are toxic or very toxic. They could cause various health problems depending on the specific gas, its concentration, the length of exposure and the route of exposure. Contact between the skin or eye and liquefied gases in liquid form can freeze tissue and result in a burn-like injury. With the exception of oxygen and air (19.5% O2), possibly the greatest hazard to the user of CG is asphyxiation. All gases are asphyxiants. If suddenly released, especially cryogenics *(liquefied gases at very low temperatures, having boiling points below -150°C or - 238°F)* such as liquid nitrogen can expand up to 700 times and displace all breathing oxygen, presenting a serious asphyxiation hazard. Also, it can create a highly visible fog (due to condensation of moisture in the air), which may obscure the emergency EXIT path.

To ensure safety of life and property, all compressed gases and cryogenic liquids should be stored, handled and used in accordance with the requirements of the applicable Ohio Fire Code, NFPA 45, OSU Fire Safety Policy, and OSU Chemical Hygiene Plan (CHP) to minimize the hazards of fire, explosion and personal injury. Each department or laboratory storing or using compressed gases and cryogenic liquids should, as a minimum, ensure that:

- All employees have **adequate knowledge and training** regarding safety and first-aid procedures for gases being used or handled. Employees should be provided with and encouraged to read and follow the instructions on the warning labels, review applicable Safety Bulletins and Material Safety Data Sheets (MSDS) for specific gases.

- All individuals working on or near CG systems wear **eye protection at all times and wear protective gloves**, particularly, when handling cylinders containing cryogenic (super-cold) gases.

- **Maximum number of cylinders in a laboratory** is limited to a two-month supply. (Cylinders not 'in use' are not to be stored in the laboratory. A single cylinder secured alongside the cylinder in use as the reserve cylinder is considered 'in use.' Flammable compressed gas cylinders (e.g., *acetylene, butane, ethylene, hydrogen, methylamine and vinyl chloride)* in laboratories are limited to only those in current use. The maximum quantities of compressed gases and cryogenic liquids should never exceed those specified by the Ohio Fire Code or other applicable Fire Code. When non-compliance is identified during lab safety audit or fire code inspection, the Division of Emergency Management & Fire Prevention and EHS should work with the appropriate Department Manager to resolve this issue.

- **Excess cylinders and tanks** are stored in a separate ventilated room approved for that use.
  All cylinders (in service or storage, full or empty) are:
  - Adequately secured with chains or straps positioned around the upper third of the cylinder, or by proper nesting to prevent falling or being knocked over,
  - Protected with valve protective caps in place until the gas is about to be used.
  - *Never* stored in any portion of an exit or common corridor, elevator car or in space under the stairway. A CGC or a cryogenic container should not be located such that it could prevent safe egress in the event of accidental release of their contents unless a second means of access to an exit is available from a laboratory work area.
  - Stored away from elevators, staircases or main traffic areas to avoid dangerous impediments.
  - Promptly moved to their designated storage area once delivered.
  - Removed *within one day*, when placed in the hallways for pickup.
  - Moved with a suitable hand cart and never allowed to be dropped or banged together violently,
  - Kept away from fire, heat and spark-producing operations,
  - Grouped according to their properties. Do not store flammable gases next to exit or oxygen cylinders.
  - Stored such that flammable gases are separate from oxidizing gases, and empty cylinders are separate from the full cylinders. *Note: Oxidizing gases contain oxygen at higher than atmospheric concentrations (above 23-25 %). Common examples are: nitrogen oxides, halogen gases such as chlorine and fluorine.*
  - Properly marked with the name of the contained gas. Don't accept unidentified cylinders and don't rely on color codes; read the label.
  - Lecture bottle-sized Cylinders must be also be secured properly. Such cylinders with content health hazard 2 without physiological warning properties, health hazard 3 or 4, and pyrophoric (spontaneously ignitable) must always be stored in constantly ventilated hood/enclosure.

- **Each department or laboratory should** ensure that:
  - A CG cylinder is never used without a pressure-reducing regulator that safely reduces the cylinder pressure to the required level.
  - Only those regulators are used that have both high-pressure gauge and a low-pressure gauge to be able to monitor both the pressure in the cylinder and in the system.
  - Never use a pressure gauge above 75% of its maximum face reading. Immediately replace any gauge whose pointer does not go back to its zero point when pressure is removed.
  - Cylinder valves are cleaned of any dust or dirt before attaching proper regulators.
  - Cylinder valve is closed properly and the protective cap is replaced before returning the cylinder.
  - Adjusting screw is released on regulator before opening cylinder valve.
  - An adaptor is never used between a cylinder and a pressure-reducing regulator.
  - Regulators are never interchanged. Some regulators are only for specific gases.
  - Excessive force is never used to connect a CGA connection.
  - Safety devices in cylinder valves or regulators are never tampered with.
  - Any damaged cylinder or valve is immediately reported to the supplier and to the Campus emergency number.
  - Any aid, such as pipe dope or Teflon tape, is never used to connect a regulator to a cylinder.
  - The users are trained to stand to the side of the regulator when opening cylinder valve and open the cylinder valve slowly.

- The users are instructed never to transfer CGs from one container to another, refilled or sucked back into the cylinder.
- Separate empty and full cylinders during storage. Mark empty cylinders "EMPTY" or "MT". *Note that cylinder with a pressure gauge reading of 0 psig (0 kPa) is not really empty. It still contains gas at atmospheric pressure. [Gauge pressure = Total gas pressure inside cylinder - atmospheric pressure (14.7 psi or 101.4 kPa).*

- **Cryogenic liquid** *(liquefied gases at very low temperatures, having boiling points below -150°C or - 238°F)* tanks are checked periodically to ensure that they:
  - Have not lost vacuum or insulation (a cold outside jacket of the tank indicates the need for tank service)
  - Are checked at the neck of the tank opening for any ice accumulation to prevent any blockage and subsequent pressure buildup within the container
  - Are checked for sabotage of the pressure relief devices on the tank.
  - The following two **safety precautions** must be taken with cryogenic gases:
    - Use protective gloves and eye wear when handling cylinders containing cryogenic (super-cold) gases.
    - Where cryogenic gases are vented or released at a rate anything more than a few cubic centimeters of gas per minute inside of an area, adequate 24-hour ventilation is required. Install continuous oxygen monitor (s) with a 'low oxygen' alarm in such areas for safety.

Construction, Renovation, and Demolition

Fires during construction, renovation, or demolition operations are an ever-present threat. Inherently, greater fire potential exists on these sites due to the presence of large quantities of combustible materials and debris, together with such ignition sources as temporary heating devices, hot work operations, open fires and smoking by construction workers. Life safety of the occupants during these projects is of great concern. Change in an exit route or restricted exit, storage of materials in the corridors, restricted access to the emergency response equipment are some of the important things to look for during these projects. If you notice any unsafe condition, report it promptly to the department managing the project and the Division of Emergency Management & Fire Prevention (EMFP).

Cooking Appliances and Sterno Heat

Cooking related appliances utilizing gas, electric or sterno heat, toasters, toaster ovens, hot plates, electric fry pans, woks and crock pots are *not* permitted to be used inside of any university building unless such use is necessary for conducting university business. Permission should be obtained from the appropriate school/unit's administrative office after consulting with OSU Emergency Management & Fire Prevention. Where one or more of these appliances are used, appropriate safety precautions should be taken as outlined below:

In facilities where the use of sterno heat is permitted, the following requirements must be complied with:

- When in use, sternos must be attended at all times.
- Keep all combustible materials, such as napkins and paper plates, away from any heat sources to avoid overheating or fire.
- Appropriate metal or ceramic trays must be used under the sternos cans to prevent accidental contact with any combustible material.
- Approved means of fire extinguishment capability.
- Ensure that two individuals, who are trained in the use of a fire extinguisher, are designated to monitor any unsafe condition. These individuals must not leave the area until all open flames are extinguished.

Decorations: Holidays, Candles and Open Flames

To prevent fires related to decorations and lighting during holidays or special events and to ensure compliance with the Ohio Fire Code requirements, each School/Unit Administrator or Building Emergency Coordinator should ensure compliance with the following specific fire prevention and safety requirements. All university students, staff, and faculty should comply with the following requirements.

Holiday Trees, Wreaths and Decorations

- Decorations and lighting must not be placed such that they may obscure emergency exit paths or signs.
- All decorative materials should either be non-combustible or flame resistant, or treated with an approved fire retardant in accordance with manufacturer's specifications, NFPA 701 Testing criteria, and the OSU Fire Safety Policy.
- Look for 'non-combustible' or 'flame resistant' labels on the decoration packages. If the decorations are to be re-used, retain the original package while in use.
- Live trees, natural wreaths, and other live greens are not permitted indoors.
- Use only flame retardant artificial trees and decorations in appropriate locations (flame retardant information can be found on the packaging).
- Trees or decorations must not block or obstruct exits, aisles, corridors, vision panels on the hallway doors, stairwells, fire extinguishers, fire alarm pull boxes, exit signage, evacuation floor plans and other emergency equipment/information.
- No trees or wreaths of any kind are permitted in laboratories. However, a wreath on the exterior of a laboratory door is permissible.
- Place all decorations and combustibles at least 3 feet away from sources of heat, e.g., radiators, lights.
- All decorations with powered electricity must be turned off when unattended or before leaving the area for the day.

Holiday Lighting

- Carefully inspect new and previously used electrical light strings and replace damaged items before plugging lights in.
- All holiday lighting and electrical decorations should be 'UL' (Underwriters Laboratories) listed and should be plugged directly into wall-mounted outlets or 'UL' listed power-strips (Look for a 'UL' symbol on the equipment). Follow manufacturer's instructions for installation and maintenance.
- Extension cords should not be used for holiday lighting. Instead, use 'UL' listed outlet power-strips with built-in fuse or circuit breaker protection.
- Electrical wires should not be extended through windows or doors or under carpeting.
- Lighted candles or lanterns should not be permitted in any university facilities.
- Electrical light bulbs should not be decorated with paper or other combustible materials unless flame resistant.
- All lighting must be turned off when unattended or before leaving the area for the day.

Removal of Decorations

- All decorations and lightings should be removed promptly upon the completion of an event or within seven calendar days after the end of the holiday period.

Life Safety Measures for Departmental Holiday Events

- Avoid the use of emergency EXIT corridors for seating and tables. If these spaces must be used, EMFP must first be consulted to ensure life safety of the occupants.

Candles, Incense, Open Flames

- Candles, incense, and other objects which produce open flames or burning (outside of approved kitchens and laboratories) are prohibited in all OSU facilities.

Door Wedges and Other Hold-Open Devices

University buildings are equipped with fire rated doors and smoke-barrier doors. These doors prevent smoke and heat from traveling up stairwells and along corridors. OSU Facilities Operations and Development maintains these doors, including all hardware, in good working condition.

A seemingly harmless door wedge used to hold open a fire door represents a serious fire/life safety hazard and fire code violation. Moreover, the inappropriate use of door wedges can cause damage to doors, resulting in significant expenditures for repair. Therefore, the use of doorstops, wedges and other hold-open devices, which are not permitted by the fire code, is prohibited in all university buildings.

Never prop open fire doors. Fire doors are to remain closed. If your operational needs call for a particular fire rated or smoke-barrier door to remain open, consult Emergency Management and Fire Prevention for appropriate resolution.

All fire rated or smoke-barrier doors that are approved to remain open during normal operation are equipped with electrically powered magnets which hold them in open position and release (close) automatically during a fire alarm.

Magnetically Locked Exit Doors

Numerous university buildings are equipped with EXIT doors that are electronically locked for security reasons. This type of lock allows people to exit the building safely during fire alarm emergencies. Check that all magnetically locked exit doors in your area automatically release (open) during an alarm to allow for your safe egress.

Electrical Safety

All departments, including laboratories, should comply with the university's electrical safety procedures outlined in this guide to minimize the hazards of fire due to improper use of electricity and electrical equipment. These procedures include restrictions on the use of portable electrical space heating devices, extension cords, cooking appliances utilizing gas, electric or sterno heat, toasters, toaster ovens, hot plates, electric fry pans, woks and crock pots. Any staff observing any hazardous electrical conditions should promptly report them to their supervisors or other appropriate department(s) for corrective action.

To protect building occupants and property from the direct (electric shock injury) and indirect hazards (heat, fire and explosion) of electricity, each school/unit should comply with the following electrical safety procedures.

- Use equipment in accordance with the manufacturer's recommendations. Never bypass electrical interlocks. Calibrate heating equipment regularly as required.

- Post procedures for critical equipment including "on-off procedures" and warning signs on or near the equipment. Clearly identify the equipment to be left "ON" when the laboratory is unoccupied, e.g. by posting on the lab door.

- All defective/damaged wiring (e.g. frayed, cut wires, broken/defective plug or switch) or equipment should be promptly reported to the Division of Emergency Management & Fire Prevention and OSU Facilities Operations and Development.

- To prevent fires due to electrical overload on fixtures and wiring, DO NOT USE:

  - Extension cords and flexible cords as a substitute for permanent wiring. Do not extend cords through windows or doors or under carpeting.
  - Multiple outlet strips, other than for computer systems. Use strips with built-in fuse or circuit breaker protection, having a minimum 12/3 (gauge/wires) labels, maximum length of 6 feet, and 'UL' (Underwriter's Laboratory) listed for the use.
  - Cube taps for multiple connections from a single outlet. These types of devises are not permitted within the university.
  - Multiple plugs in interconnection. In other words, never connect additional plug or plugs into the main plug that is inserted in the outlet or a power strip to connect multiple devices.

- Secure all wiring, cords, cables, and conduits. Keep them away from general traffic areas to prevent falls/trips.

- Allow appropriate clear spaces between electrical equipment and storage of flammable combustible materials. A minimum clearance of 36 inches should be maintained between electrical service equipment and any other storage to allow easy access for emergency use (42 inches clearance required for voltage level higher than 120 Volt). Never drape combustibles (e.g., cloth, paper) over equipment.

- Laboratory electrical motors should be of induction type - totally enclosed fan cooled since the sparks emitted from brush type motors can cause fire in a flammable environment. This information can be found on the equipment label.

- Dedicated circuits and proper grounding may be required for equipment such as refrigerators, freezers, dehumidifiers and air conditioners. Do not use extension cords with this equipment. Consult with Facilities Operations and Development to check for the adequacy of electrical power or circuits prior to the purchase, installation or relocation of such equipment.

- Cooking related appliances utilizing gas, electric or sterno heat, toasters, toaster ovens, hot plates, electric fry pans, woks and crock pots are *not* permitted to be used inside of any university building unless such use is necessary for conducting university business. Written permission should be obtained from appropriate school/unit's administrative office after consulting with FOD. Where one or more of these appliances are used, appropriate precautions should be taken as outlined in this guide.

- Portable electrical space heating devices are generally *not* permitted in any university building. Review specific restrictions and guidelines provided under a separate title "Space Heaters" in this guide.

- If electrical work is required in any area, it should be submitted for the Facilities Operations and Development for review and/or cost estimate and approval.

- Promptly report any unsafe hazardous electrical conditions to the department supervisor or OSU Facilities Operations and Development.

Fire Safety Inspections

Workplace fire safety conditions are evaluated on a regular basis to assure compliance with applicable Fire Codes. OSU facilities are regularly inspected by OSU Emergency Management & Fire Prevention, the State of Ohio, and the Columbus Fire Department. Fire code requires that all fire and life safety systems, including fire detection and alarm, sprinklers, fire hydrants, fire pumps and others be inspected, maintained, and tested regularly. While these features are inspected by the professional, routine walk-through inspections by building occupants is also of extreme importance. For instance, temporarily stored material in the EXIT passage may become permanent creating a life safety hazard, if not immediately addressed. Therefore, every individual should know and check his/her areas and activities for fire safety. Use the fire safety checklist in the Forms section. Always contact EMFP for assistance or appropriate corrective measures.

Furnishings and Decorations

Certain furnishings and decorations ignite very easily and quickly release a high amount of heat. Any item of upholstered furniture, wastebaskets, mattresses, curtains, draperies, surface coverings (carpet, wall and ceiling), acoustical, and other materials used for decoration can contribute fuel to fire. Therefore, in health care facilities, such items are required to be resistant to ignition by both cigarettes and small flames. Non-combustible or flame-resistant materials that are appropriate for use are available on the market.

Departments purchasing new furnishings and decorations, and OSU Purchasing must ensure compliance with the following requirements of the university's Fire Prevention and Life Safety Policy: (1) furnishings and decorations are non-combustible or flame resistant in accordance with the appropriate NFPA or other equivalent standard, (2) all upholstered furniture including sofas and mattresses comply at least with California Technical Bulletin (CAL TB) 117 and with CAL TB 133 (for unsprinklered general assembly areas, and (3) all other decorative materials comply with NFPA 701 standard.

Hazardous Materials and Chemicals

Hazardous materials and chemicals should be stored, handled and used in accordance with the requirements of the Ohio Fire Code and other applicable National Fire Protection Association (NFPA) Standards. To ensure uniform compliance university-wide, *each laboratory* or other areas using hazardous materials such as flammable and combustible liquids, oxidizing materials, radioactive materials, unstable (reactive) chemicals, highly toxic materials and poisonous gases should, at a minimum, comply with all the applicable safety requirements of this guide.

Extensive use of flammable solvents in laboratories and other areas presents a potentially serious fire and explosion hazard. Even a very small quantity involved in the fire can significantly increase the potential of fire spreading. To ensure uniform compliance university-wide, *each laboratory* or other areas using hazardous materials should:

- Maintain an up-to-date inventory of hazardous chemicals by types and quantity, as required by the Ohio Fire Code and the university policy, Ohio Emergency Planning and Community Right to Know Act (EPCRA), Superfund Amendments and Reauthorization Act (SARA Title III), State Emergency Response Commission (SERC), Local Emergency Planning Committee (LEPC).

- Work with Environmental Health and Safety to ensure that initial inventory is created and updated as required.
- Restrict the container size to *one gallon* for all flammable liquids, i.e., liquids such as alcohol, toluene, acetone and benzene with flash point lower than 100 degrees Fahrenheit. Flammable liquids received in original approved containers, which are of a *five-gallon* or less capacity, are exempt from this requirement.
- All chemical containers, which are not in active use, should be properly capped.
- No chemical containers should be stored on a laboratory floor without proper containment**.**
- All flammable and combustible liquids containers should be stored in a cool area, away from sunlight or any sources of heat or ignition, and away from any corrosives or oxidizers.
- Flammable liquids not in active use should be stored in an approved flammable storage cabinet. Storage of flammable liquids is not permitted outside of an approved flammable storage cabinet in laboratories constructed or renovated after *December 2001*.
- Storage cabinets used in laboratories should not be required to be vented for fire protection purposes. Where vented, performance-based requirements of NFPA 30 should be complied with.
- Flammable Liquids Dispensing and Transferring: Dispensing and transfer of these liquids can present a static electricity hazard depending on their ability to generate static electricity, how well they conduct electricity (conductivity), and their flash point. Thus, the level of hazard depends on factors such as the type of containers, the type of liquids (flash point, vapor pressure) being transferred, working environment (temperature) and the rate of liquid transfer.

To ensure safety during such activity, all flammable liquids dispensing and transfer should comply with the following requirements:

  - Flammable liquids in containers larger than 4 L (1.1 gal) should not be dispensed by gravity whether the containers are conductive or not. Approved pumps taking suction from the top of the container should be utilized. Containers with bottom spout are acceptable but not recommended because of an increased risk of spill caused by damaged spout.
  - Any transfer of flammable liquid between conductive containers larger than 4 L (1.1 gal) should be bonded and grounded. Note: Transferring flammable liquids from 4 L (1.1 gal) glass containers to any metal containers is relatively hazardous and such a practice is not considered prudent. Therefore, this should be avoided.
  - Transfer of flammable liquids is not permitted in any exit access corridor.
  - Transfer of flammable liquids to smaller containers from bulk stock containers not exceeding 19 L (5 gal) should be performed only in a lab hood or an approved inside area, and in an adequately ventilated area that must not allow the accumulations of flammable vapor/air mixtures to exceed 25% of the lower flammable limit.
  - Where practicable, dispensing operations should be separated from the storage area because of the exposure of greater quantities to the hazards of dispensing operations.
  - Any transfer of more than 19 L (5 gal) of flammable liquids is not allowed inside the building except in an area specifically designed and protected for dispensing such liquids.
  - Consult EMFP for any activity that you think may not comply with these requirements to determine appropriate strategy to control fire hazard.

- Collect hazardous waste in appropriate containers as specified by OSU Environmental Health and Safety. Once a container is full, promptly contact EHS to schedule a pickup and transfer to the designated Hazardous Waste Store Room within *three* working days.

- Limit the quantities of flammable liquids to *ten gallons* per laboratory, and combustible liquids to thirty gallons per laboratory. In cases, where a common fire area is divided into multiple laboratories, each laboratory may have to comply with more stringent quantity restrictions. When non-compliance is identified during lab safety audit or fire code inspection, EMFP will work with the appropriate Department Manager to resolve this issue in accordance with the applicable fire code requirements.

- Ensure that radioactive materials are stored, handled and used only by the trained authorized users to keep exposure As Low As Reasonably Achievable (ALARA) and to minimize the property damage by radioactive materials resulting from fires and explosions. The users of such materials should also comply with the requirements of the University's radiation safety policies and procedures.

Lecture Halls and Places of Assembly

The Fire Code classifies lecture halls, multi-purpose rooms, and places of assembly as a "life hazard use group" due to safety concerns for a large number of people in these areas. In case of fire, people must be able to evacuate these areas safely and in a reasonable time frame.

To ensure safe and timely evacuation, changes in furniture "set ups" must be pre-planned and approved by the university. Your facilities Building Emergency Coordinator or a designee reviews and approves all "set up" plans in consultation with the EMFP as needed to ensure compliance with the State of Ohio Fire Code.

Re-arrangements of "set ups" are prohibited without the proper authorization. The individual requesting the "set up" is responsible for ensuring that the approved "set up" is not re-arranged after approval. In any case, the Maximum Occupancy Load for all Places of Assembly must be adhered to WITHOUT EXCEPTION! Exceeding the occupancy load by one (1) person is cause for the function to be suspended until the legal occupancy load is achieved.

Space Heaters

Portable space heaters can pose a major workplace fire safety hazard. Use of unapproved or unsafe space heaters – or use of space heaters in an inappropriate or unsafe manner - presents a

significant fire risk. Also, if the size of the heater is too big for the area, it can be a source of pollution, energy waste and fire. Therefore, to ensure safety of life and property from the risks of space heater use at OSU, all students, faculty, and staff or visitors are required to comply with the following requirements of the OSU Fire and Life Safety Compliance Guide in accordance with the Fire and Life Safety Policy.

Space Heaters Policy:

1. Portable space heaters are **not permitted** in any university owned or leased facility unless OSU Facilities Operations and Development or the landlord of a leased facility has approved such use as a *temporary* measure to address inadequate heating by the building's Heating Ventilation and Air Conditioning (HVAC) system. Space heaters *should not be used as a substitute for any required repair or maintenance* of the HVAC system. Where approved, *only electrical* type space heaters, which at least meet the safety criteria listed on the next page, are allowed.

2. Any non UL rated space heaters are not permitted for use on university premises.

3. Space heaters of any kind are strictly prohibited in **all OSU laboratories**, in all areas in **healthcare occupancies** accredited by the Joint Commission, (except, under certain circumstances, in a ***nonsleeping staff or employee areas only)***, and in all areas primarily used for **the storage of combustible materials** such as office stationary, drapes or chemicals.

4. Where the use of an electrical space heater (in any previously approved area) may present an undue danger to life or property, the authority having jurisdiction or an **EMFP representative may prohibit** such use. Any heating unit or its use that does not comply with this policy **must be confiscated.**

5. **The user of space heater is ultimately responsible** for any hazard or fire code violation created as a result of unauthorized or inappropriate use.

6. If a space heater is to be used, the following safety criteria must be met and operational safety precautions must be followed:

Safety Criteria for Space Heaters:

All electrical space heaters must meet the following criteria:

1. The equipment is UL (Underwriter Laboratories) approved for the use for which it is designed.

2. The equipment has a sealed element, and does not produce any flames, fumes, or use any fuel.

3. The equipment is equipped to turn off automatically when tilted or turned over.

4. The heating elements cannot exceed 100 degrees Centigrade or 212 degrees Fahrenheit.

5. Oil-filled electrical space heaters are recommended over any other types of heaters because they have the best safety record.

Operational Safety Precautions for Space Heaters:

Students, staff, and faculty or visitors should comply with the following operational safety precautions:

1. Maintain a minimum clearance of three feet (or one meter) at all times between stored materials and the heating device.

2. Never leave the heating unit “ON” when unattended.

3. Plug the heating unit directly into an outlet with sufficient capacity.

4. Never use an extension cord with heater because it may overheat and cause a risk of fire.

5. Check the heating unit before each use to make sure that all indicator lights are working. Remove the defective unit from service immediately.

6. Ensure that the power cord is properly plugged in and is not damaged, or crushed by objects, or covered under carpet or rug.

7. Promptly report any unsafe or hazardous conditions to the Division of Emergency Management & Fire Prevention and OSU Facilities Operations and Development.

8. Contact OSU Division of Emergency Management & Fire Prevention for any space heater related questions.

Special Public Events: Exhibitions, Vendor Fairs, Parties, Carnivals, Picnics

To prevent fires during indoor and outdoor public events such as exhibitions, vendor fairs, parties, carnivals, picnics, etc. and to ensure compliance with the State of Ohio Fire Code requirements, each School/Unit Administrator or Building Emergency Coordinator should comply with the following fire prevention and safety requirements for on-campus indoor and outdoor public events. All such events should be organized with appropriate consultation with the Department of Public Safety. Compliance with all applicable fire safety requirements for decorations and lightings and electrical safety procedures outlined in this guide is required.

Requirements for Indoor Events:

- Use or storage of propane cylinders and propane or charcoal grills is PROHIBITED.
- Implement these fire and life safety measures as a minimum for all indoor events:
  - Maintain clear isle width and keep all emergency EXITS accessible at all times. Avoid the use of emergency EXIT corridors for seating and tables. If these spaces must be used, EMFP must first be consulted to ensure life safety of the building occupants.
  - Observe maximum occupancy limits for a specific area.
  - Maintain good housekeeping and areas free of clutter.
  - Follow the applicable Electrical Safety Procedures and comply with all applicable fire safety requirements for decorations and lightings outlined in This Guide .
  - Have readily available at least two ABC type fire extinguishers of minimum 10-pound capacity to extinguish small fires. Contact your campus FOD or EMFP office to obtain the needed fire extinguishers.
  - Ensure that at least two individuals, trained in the use of a fire extinguisher, are designated to monitor any unsafe conditions for the duration of the event. Contact your campus EMFP office for specific training needs.
  - IN CASE OF A FIRE, call **9-1-1**. Do not attempt to extinguish a large or spreading fire.
- **Cooking appliances** utilizing gas, electric or sterno heat, toasters, toaster ovens, hot plates, electric fry pans, woks and crock pots are *not* permitted to be used inside of any university building unless such use is necessary for conducting university business. Permission should be obtained from appropriate School/Unit's administrative office after consulting with EMFP. Where one or more of these appliances are used, appropriate safety precautions should be taken.
- In facilities where the use of **sterno heat** is permitted, compliance with the following requirements is mandatory:
  - When in use, sternos must be attended at all times.
  - Keep all combustible materials, such as napkins and paper plates, at a safe distance to avoid overheating or fire.
  - Appropriate metal or ceramic trays should be used under the sternos cans to prevent accidental contact with any combustible material.
  - A 10-pound ABC type fire extinguisher should be readily available and located within a 20 feet distance to extinguish small fires. Use the fire extinguisher fact sheet in this guide.
  - Ensure that two individuals, who are trained in the use of a fire extinguisher, are designated to monitor any unsafe condition. These individuals must not leave the area until all open flames are extinguished.

Requirements for Outdoor Events:

- IN CASE OF A FIRE, follow the campus emergency procedure. Do not attempt to extinguish a large or spreading fire.
- During State-declared drought or dry weather conditions, the use of propane or charcoal barbecue grills will not be permitted on grassy or mulched areas. Smoking must also be prohibited in such areas. To prevent brush fires, such activity should only be conducted on a paved area away from grass.
- Use of barbecue grills and other propane cooking equipment is PROHIBITED on porches, balcony or any other portion of a building. All such equipment should be used at least 15 feet away from any building with consenting prior approval through OSU Fire Prevention.
- Do not store any spare propane gas cylinder in any part of the building.
- Charcoal Grills are not permitted except in pre-approved recreational facilities in consultation with OSU Fire Prevention.
- Keep all combustible materials away from grills to avoid any fire. Have 10-pound ABC type fire extinguishers available to extinguish small fires.
- Ensure that at least two individuals, who are trained in the use of fire extinguishers, are available during any event. These individuals should be responsible for monitoring any unsafe condition.
- Where tents are to be installed outside on the campus ground, appropriate permits should be obtained from the State of Ohio, City of Columbus, and fees must be paid. In this case, the State Fire Official, Columbus Fire Inspector, or OSU Fire Prevention may also choose to inspect the location before and during the event. Contact Emergency Management & Fire Prevention for assistance in coordinating approval.

Storage Safety

Storage of materials, equipment and furniture in corridors and stairwells used for an emergency exit can present an impediment and falls and trips hazards to both building occupants and responding fire fighters. Storage in corridors may also block installed emergency equipment such as fire extinguishers, safety showers and fire hose connections. Inappropriate storage height in sprinklered areas can hinder effective fire fighting. To avoid these problems, the following should be complied with regard to storage:

Storage in Egress Corridors

Corridors leading to EXITS or any other similar elements of the means of egress should be maintained in a safe condition, available for immediate utilization and free of all obstructions at all times. Obstructions such as tables, display cases, holiday decorations, powered equipment, display boards, signs, coat racks and other movable equipment that may interfere with fire-fighting access are prohibited. Storage of combustible, flammable or other hazardous materials, including compressed gas cylinders and cryogenic liquid tanks in any portion of an exit, elevator car or under the stairway is prohibited. Chairs, tables, and other furniture or equipment in each room must be arranged to provide ready access to each egress door.

Safe Ceiling Clearance for Storage

To allow for effective fire fighting, the individual departments should ensure that a *two* feet ceiling clearance is always maintained when *storing materials* on shelves. Any storage flush with the room walls is exempt as long as such storage does not present other safety hazards (e.g. storage that is unstable or very close to an electrical fixture). All *new furniture* or equipment, including storage racks/shelves, should allow a minimum of *two* feet clear distance between the ceiling and the top surface.

Forms and Procedures

FIRE DRILL CHECKLIST

Facility Information: _____

Name and Address of Building:	
Name and Contact Information to Individual Completing this Document:	
Name and Department(s) Located in this facility:	
Number of Building emergency egress/exterior doors:	
Number of Stairways out of the building:	
Check for primary and alternative means of notifying occupants of a fire or emergency:	☐Building is equipped with horns & strobe lights ☐Building fire alarm issues a preprogrammed voice message ☐Building is equipped with an intercom system ☐Other – please describe
Check the primary and alternative means of Reporting fires or emergencies to the fire department:	☐Bldg is equipped with fire alarm monitoring ☐OSU Public Safety Dispatch Center (Blankenship Hall) ☐Other – please describe ☐Dial 9-1-1
Number of manual fire alarm pull station boxes:	
Location of closest fire hydrants:	
Location of Assembly Points:	
Is there a Building Emergency Action Plan (BEAP) Available to building occupants:	
Contact Person for BEAP:	

Fire Drill Exercise Questions	**Response**
Date/time of Fire Drill Exercise:	
Notification Method Used:	
Number of Occupants Evacuated:	
Weather Conditions:	
Elapse Time to Evacuate (goal is under 5 minutes):	
Did identified sweepers confirm sweep of floor(s) and report to evacuation point:	
Were any primary evacuation or secondary evacuation routes Blocked or were individuals unable to use exit doors:	
List issues, mistakes or problems that occurred During this fire drill exercise:	
Action steps to be taken to address issues, Mistakes or problems listed above:	
Was this a successful fire drill exercise:	

NAME:_____**DATE:**_____

Emergency Procedures for People with Disabilities

Introduction:

This general procedure has been developed to promote the safety of people with disabilities and all other building occupants during emergency situations including fire alarm evacuation. It may also be used with appropriate modifications in areas where patients may be undergoing medical procedures and *w*here discontinuation of any active patient care may pose an increased risk to the patient. In these cases, those who are directly involved in patient care should assure that all necessary communications, notifications, and safety measures outlined in this procedure are implemented in addition to any department-specific measures.

The evacuation route must be pre-determined!

Procedure:

Individual departments should ensure that the following general procedure is followed as a minimum requirement and should assign two volunteers per disabled person. Any specific changes must be reviewed and approved by the Building Emergency Coordinator in conjunction with Enterprise Continuity Management and Emergency Management and Fire Prevention (EMFP).

Evacuation Assistants should:

- Follow the building-specific Building Emergency Action Plan (BEAP) until specifically instructed otherwise by the responding Fire Department (RFD).
  Note: The RFD may call for a different procedure depending on their judgment and the nature of the emergency.
- Identify any people with disabilities by observation and inquiry. Ask if anyone is in need of assistance.
- Never attempt to move or evacuate any person using stairs or using elevators unless authorized by the RFD.
- Report the presence, exact number, and specific location of any person with a disability in the building to the RFD.

Responding Fire Department

- Once on the scene, the Responding Fire Department should coordinate all evacuations for people with disabilities, if necessary. Everyone must follow the instructions of the Responding Fire Department.

- Elevators typically return to the ground floor when a fire alarm is activated and then can only be operated by use of a “firefighters” keyed switch. In case of fire emergencies requiring an evacuation, elevators should be used ONLY as per instructions of the responding fire department. In the event of non-fire emergencies requiring an evacuation, emergency responders may use elevators, if it is safe.

Evacuation Assistants and/or Floor Evacuation Coordinators should:

- Exercise caution to avoid falls and trips while assisting the person with a disability.
- First remove the people with disability from the area of immediate danger and then move them carefully to a primary (pre-determined) waiting area, usually the corridor by the nearest exit stair.

  Important: Do not lift any person unless you are specifically trained and it is required by your department-specific procedure. Provide plain brief note to a person having a hearing disability, if necessary. Offer your elbow to any visually impaired person guide him or her to safety. Communicate as needed, to assure safe evacuation.

- If the primary waiting area is not safe, (i.e., if you see or smell smoke or fire) then move to the pre-determined secondary designated waiting area.

Designated Evacuation Assistants and/or Fire Wardens should:

- Position the person with disability and yourself on one side of the corridor near the stair door such that traffic is not obstructed. Caution: Unless otherwise directed by the RFD, buddies should use only the Safe Waiting Area specified in the Building Emergency Evacuation Plan (BEAP).

- Do not attempt to walk the person up or down the stairwell.
  Note: Stairway evacuation of wheelchair users should be conducted only by trained professionals such as the responding Fire Department, and only after major traffic has passed. Discourage any person with mobility impairment from using stairs without assistance, even though they may be able to go up and down stairs easily. They may not be able to properly operate door locks, latches, and other devices.

- Keep the stair doors closed at all times. Caution: If the stairs doors are left open, the fire smoke may enter the stairwell.

- Once people with disabilities are positioned at the safe pre-determined waiting area,
  - Evacuate, and report to the RFD or to the Command Post if set up,
  - Report the exact location and # of people with disabilities to the responding fire department and/or other responders. Give them the disabled person's cell phone number,
  - Wait at the designated assembly area or near the Command Post, as directed by the emergency responder to provide any information as required.
  - Follow-up with the responding fire department if the people with disabilities who were reported as waiting in the building, have been contacted or if they are being assisted.
  - *Follow-up if the emergency seems to be of continuing nature or lasting for more than 10 minutes (for low-rise buildings), or 15 minutes (for all high-rise buildings).*

Department Specific Emergency Plan for People with Disabilities

Update this information after each training and drill to reflect lessons learned

Department: _____ Building/Room# _____Phone #_____

Department Head/Supervisor: _____ E-mail: _____

Areas/Groups that should defend-in-place *(Indicate any critical patient areas or experiments that must continue)*

Name of Area or Group	Location	Approx. # of People

Floor Evacuation Coordinators

	Name	*Building/Room#*	*Phone*	*E-mail*
1				
2				
3				
4				
5				

Evacuation Assistants *(List names of those trained ONLY IF ALL staff members are NOT trained as Evacuation Assistants.)*

	Name	*Building/Room#*	*Phone*	*E-mail*
1				
2				
3				
4				
5				

Designated Waiting Areas

Waiting Area	*By Stair # /Nearest room#*	*Nearest Available Phone #/Room*
Primary waiting area		
Secondary waiting area		

Training Participation

Trainee group	*Date 1*	*Date 2*	*Total # trained*
Floor Evacuation Coordinators			
Evacuation Assistants			
Staff			
Persons with Disabilities			
Have provided clear written directions to employees/students with disabilities			
Have shown physically the path usable by the PWDs to arrive safely at the safe waiting area			

Drills Participation *(Each department is required to practice the PWD procedure at least twice a year)*

Date	*Drill scenario practiced (Describe)*

PWD Plan Review and Update *(at least annually or when changes occur)*

	Department Name	*EMFP*	*Building Emergency Coordinator*
Reviewed by: Name/Signature			
Email/Phone Ext.			
Date reviewed			

Checklist for Department Supervisors and Managers

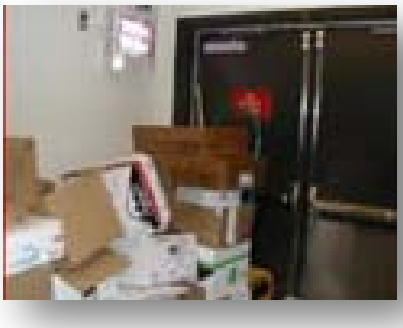
Action Item	Yes/No	Comment/Status
1. Department Specific Emergency Plan for people with disabilities has been developed?		
2. The Plan has been provided for approval by the facilities Building Emergency Coordinator?		
3. The Plan has been provided to and approved by EMFP?		
4. The Plan has been incorporated in the Building Emergency Action Plan?		
5. There are areas of critical patient care: List all		
6. There are areas of critical experimental procedures: List all		
7. Have provided clear written directions to employees and students with disabilities: (e.g., brochure, map showing directional signs leading to safety)?		
8. Have shown physically the path usable by the PWDs to arrive safely at the safe waiting area?		
9. Have designated at least two Floor Evacuation Coordinators for the department?		
10. Have designated at least two evacuation assistants to assist PWDs?		
11. Adequacy of floor captains and evacuation assistants has been evaluated: *(consider department size, staff location, and number of potential PWD)?* Last evaluated: Date_____		
12. My department's main function is patient care, and all staff members are required to perform the duties of floor coordinators and evacuation assistants.		
13. Each staff member is trained initially?		

14. Each staff member is trained annually?		
15. Each staff member performs his/her role during all fire alarms, including drills and completes an evaluation form?		
16. Primary waiting area (e.g., common corridor spaces by the exit stairs) for the PWDs from my department is:		
17. Secondary waiting area for the PWD from my department is:		
18. Each floor captain and evacuation assistant has participated in training and drills at least twice a year?		
19. Have practiced the Plan for the PWDs at least twice every year during the scheduled fire exit drills?		
20. Formal evaluation of the procedure is done every time it is executed?		

MOST COMMON FIRE CODE VIOLATIONS

Compressed gas unsafe storage

Blocked exit and storage



Exit blocked

Poor housekeeping

Combustibles

Exit sign inoperable

No fire stopping in open penetration

Open electrical panel

Storage in stairwell

Material storage in hallway

Unsafe storage of chemicals

Door Wedge

Using door chock to hold open a fire door

Using extension cords

In place of permanent wiring

FIRE SAFETY RESOURCES

While you can always call EMFP for assistance in fire safety matters, valuable fire and life safety fact sheets are available on the internet. EMFP recommends that you use the information available from the following two sources:

1. National Fire Protection Association (NFPA)'s home page at nfpa.org: Just click on: Learning > Public education > Safety tips and fact sheets.
2. U. S. Fire Administration's website at http://www.usfa.dhs.gov/citizens/focus/.

Fact sheets on the NFPA website include:

- Home escape planning: Learn the steps to create a home fire escape plan - and putting it into practice.
- Safety in the home: Candles, cooking, escape planning, heating, smoking, CO poisoning, and more
- Safety in other occupancies: High-rises, hotels/motels, nightclubs, nursing homes, campus and dormitories, and more
- Prepare for an emergency: Your family need to be prepared because you won't have time to shop or search for supplies when a disaster strikes
- For people with disabilities: Ensure that people with disabilities are included in safety planning.
- Children playing with fire: Children playing with fire cause hundreds of deaths and thousands of injuries each year.
- Electrical safety: Safety in the home and with circuit interrupters
- Fire protection equipment: Automatic sprinkler systems, fire extinguishers, smoke alarms
- Homeland Security: Free access to NFPA 1600 and other information and resources
- Mine fires and explosions: Mining and mineral processing facilities represent significant fire and explosion exposures.
- Seasonal safety: Fireworks, Christmas trees, grilling, Halloween safety, winter and summer safety
- Vehicles/gas/fuel safety: Gasoline at home, propane, service station safety, and more
- Wild land fires: Learn to protect your family and community from wild land fires

Related Topics on the **U.S. Fire Administration**'s website include the following topics:

- Candle Fire Safety
- Electrical Fire Safety
- Heating Fire Safety
- Portable Generator Hazards/Carbon Monoxide Poisoning
- Wildfire: Are You Prepared?

Other Links of Interest:

- American Red Cross (disaster services)
- Consumer Product Safety Commission (portable generator hazards)
- National Candle Association (fire safety)
- Ready.gov (preparing Americans for all kinds of emergencies)
- Older Adults
- Federal Emergency Management Agency