Northwestern

# Fire Prevention

Environmental Health and Safety

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# I. Purpose

The purpose of this program is to ensure the safety of the Northwestern community by identifying and reducing potential fire hazards and maintaining fire control equipment.

# II. Scope

This program applies to all Northwestern staff, faculty, students, and contractors on Northwestern property.

# III. Responsibilities

A. **Environmental Health and Safety (EHS)**
   i. Review and revise this program, as necessary.
   ii. Conduct and document building inspections in Northwestern-owned buildings and submit corrective actions when necessary (refer to Northwestern's Building Inspection Program).
   iii. Coordinate Northwestern-owned building inspections for regulatory agencies (e.g., OSHA) and city inspectors (e.g., City of Chicago, City of Evanston).
   iv. Coordinate fire watch activities with Facilities, other departments, and contractors as necessary during planned and unplanned fire detection, alarm, or suppression system impairments (refer to Northwestern's Fire Watch Program).
   v. Provide consultation and guidance when necessary.

B. **Northwestern Departments, Schools, and Units**
   i. Ensure this program is implemented and adhered to within their areas of responsibility.
   ii. Ensure all applicable staff, students, contractors, and visitors adhere to this program.
   iii. Report any program deficiencies or concerns to EHS immediately.

C. **Residential Services and Fraternity and Sorority Life**
   i. Adhere to the requirements of this program.
   ii. Ensure residents are aware of prohibited heat-producing items and accepted locations for approved heat-producing items (refer to the Residence Hall Policies and Procedures and Student Handbook for additional details).
   iii. Facilitate EHS, city, and regulatory agency building inspections and ensure any deficiencies in residential buildings are addressed.
   ii. Report any program deficiencies or concerns to EHS immediately.

D. **Facilities**
   i. Adhere to the requirements of this program.
   ii. Maintain fire detection, alarm, and suppression systems equipment in accordance with regulatory requirements.
   iii. Correct any life safety action items identified by EHS inspections or other authority having jurisdiction, (e.g., city, OSHA).
   iv. Report any program deficiencies or concerns to EHS immediately.

E. **Contractors**
   i. Adhere to the requirements of this program and Northwestern's Contractor Safety Program.
   ii. Provide an adequate number of fire extinguishers in construction and renovation areas.

iii. Remove all trash and refuse from worksites daily.
iv. Ensure any deficiencies identified by Northwestern or other authority having jurisdiction (e.g., city, OSHA) are corrected in a timely manner.
v. Not permitted to impair any fire or life safety system.

## IV. Compressed Gas Storage

A. Storage of liquefied petroleum gas cylinders is prohibited in Northwestern-owned buildings.
B. Store compressed gas cylinders away from vehicular traffic, excessive heat, and electrical circuits.
C. Keep oxygen cylinders at least 20 feet from fuel gas cylinders or combustible materials, or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
D. Secure cylinders upright to prevent them from falling with a chain or securing to a cart.
E. Compressed gas cylinders, containers, and tank valves must be protected from physical damage by means of protective caps, collars, or similar devices.

## V. Events and Catering

A. Schools, departments, and units hosting an event must ensure all general safety precautions in this section are followed, including but not limited to:
    i. Occupancy cannot exceed pre-approved occupancy limits, as identified by the authority having jurisdiction.
    ii. Ensuring the caterer is aware it must supply and ensure fire extinguishers are available.
    iii. Catering managers must ensure all staff have attended fire extinguisher training.
    iv. Ensure personnel in charge of site catering operations are familiar with the location of the closest fire alarm pull station and the procedures for summoning emergency assistance.
    v. Ensure exits remain unobstructed and provide clear access at all times during the event, including tent and courtyard exits.
    vi. Banners and informational material cannot block any emergency safety equipment (i.e., fire alarm panels, pull stations, stairs, smoke detectors, hoses, fire extinguishers, exit signage, exit paths).
    vii. Table, chair, and equipment set-up arrangements that may interfere with exits must be reviewed and approved by EHS.
B. Small heat sources, such as solid alcohol-burning devices (e.g., Sterno gel fuel), are allowed in public spaces, provided the devices are attended to while a flame is present. The use of solid alcohol-burning devices is prohibited in non-approved areas (e.g., offices and residence hall sleeping rooms).

## VI. Extension Cords and Power Strips

A. Extension cords and power strips must be designated and approved by a nationally recognized testing laboratory (NRTL), labeled, and used in accordance with the manufacturer's guidelines.

B. Industrial/commercial grade equipment, power tools, and other high-current devices may not be plugged into power strips or extension cords, unless they are designated and approved with a NRTL mark for industrial/commercial use. The use of household extension cords (two-prong) and non-multi-plug adapters is prohibited.
C. Extension cords and power strips must be plugged into a wall outlet and may not be plugged into another extension cord or power strip (i.e., daisy chaining).
D. Extension cords may never be used in place of permanent wiring, may only be used for a temporary period of up to 90 days, and must be unplugged when not in use.
E. Extension cords and power strips that have a ground pin may only be plugged into grounded outlets. Devices that have a ground pin may only be plugged into extension cords and power strips that accept ground pins. Do not remove the ground pin from the plug of the device, extension cord, or power strip.
F. Ensure extension cords do not have cuts, nicks, or exposed wiring, and must be immediately removed from service if found.
G. Ensure cords are not running under carpeting or under doorways, or in any other manner that may cause damage to the cords.

## VII. Fire Control Equipment

A. **Fire Detection and Alarm System**
All Northwestern buildings have a fire detection and alarm system. If there is smoke or heat from a fire, it will notify emergency response of the fire alarm. Once activated, building occupants are expected to evacuate the building.
B. **Sprinkler System**
Sprinkler systems are installed in many Northwestern buildings. These systems are designed to contain a fire if activated. Once activated, the sprinkler system will activate the fire alarm and notify emergency response.
C. **Fire Extinguishers**
Fire extinguishers are located throughout Northwestern's buildings and are designed to extinguish a small, beginning stage fire by building occupants. Fire Extinguisher Training is recommended and available for Northwestern-affiliated individuals.

## VIII. Flammable Liquids

A. Flammable liquids must be stored in approved containers.
B. Not more than 60 gallons of Category 1, 2, or 3 flammable liquids and not more than 120 gallons of category 4 flammable liquids may be stored in a single, approved flammable liquid storage cabinet.
C. Do not store flammable liquids near exits, stairs, or any common path of exiting.
D. Ensure adequate precautions are taken to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to, open flames, lightning, smoking, cutting and welding hot surfaces, frictional heat, static, electrical and mechanical sparks, and spontaneous ignition, including heat-producing chemical reactions and radiant heat.
E. Flammable liquids (Category 1, 2, or 3) with a flashpoint below 100 °F cannot be dispensed into containers, unless the nozzle and container are electrically interconnected (e.g., where the metallic floorplate on which the container stands while filling is electrically connected to the stem, where the fill stem is bonded to the container during filling operations by means of a bond wire).

## IX. Indoor Fireplaces

A. Use fireplaces only as intended, which includes using screens.
B. Ensure flues are open prior to use, and closed once the fire is completely out and no longer hot.
C. Carbon monoxide detectors should be located near the fireplace.
D. Never leave a fireplace unattended while in use.
E. Do not put anything into the fire other than what it was intended for (e.g., wood).
F. For gas fireplaces, ensure gas valve keys are kept secured when not in use and gas is off when done.
G. A minimum 10lb ABC-type fire extinguisher must be readily available.
H. Fireplaces must be regularly inspected and maintained.
I. Fireplaces may only be used by authorized persons.

## X. Open Flames and Heat Sources

A. The use of open flames inside Northwestern-owned buildings is prohibited, unless the area is designated as such (e.g., research laboratory, kitchen).
B. Open flames (e.g., burners, ovens) in labs must be kept in hoods or clear of any combustible/flammable material when not in a hood (see Research Safety's General Lab Safety for more detailed information).
C. No Northwestern employee, student, contractor, or subcontractor may perform any hot work unless in a designated hot work area or a hot work permit is obtained and approved by Facilities and all requirement of Northwestern's Welding, Cutting, and Brazing (Hot Work) program are met.
D. Variances may be provided under certain circumstances (e.g., during the religious ceremonies, such as sage burning); approval must be obtained from EHS in advance.
E. In designated cooking areas, when cooking on a stove or using a microwave, never leave the area unattended. Always ensure the appliance is turned off when finished.

## XI. Outdoor Fire Pits

A. Outdoor woodburning fires may only be in approved areas (i.e., lakefill). Refer to this page for more information.
B. Fire pits must never be left unattended while in use, and must be fully-extinguished when use is completed.
C. A minimum 10lb ABC-type fire extinguisher must be readily available.
D. For fixed gas fire pits, ensure gas valve keys are kept secured when not in use and gas is off when done.
E. Fire pits may only be used by authorized persons.

## XII. Outdoor Grilling

A. Follow all manufacturer safety guidelines.
B. Grills may not be used in areas that serve as a means of egress.
C. Grills must only be used outdoors, away from flammable and combustible materials.
D. When in use, grills must be kept at least 10-feet from all buildings, structures, and vehicles.
E. Grills must only be used on flat, stable, and level surfaces.
F. Never leave grills unattended when in use.

G. Inspect grills for proper operation (e.g., no propane leaks, no damage) before use.
H. A minimum 10-pound, portable ABC-type fire extinguisher must be located in close proximity to the grill, but not affixed to the grill.
I. Hot ashes or cinders must be deposited into non-combustible receptacles free of all combustible materials and away from combustible construction.
J. Clean grills after use.

## XIII. Portable Generators

A. Portable generators powered by gasoline, diesel, propane, kerosene, or other flammable fuel source must adhere to Northwestern's Portable Generator Guidelines, OSHA requirements, and manufacturer guidelines.
B. An appropriately sized ABC fire extinguisher must be readily available when portable generators are in use.

## XIV. Rechargeable Battery-Powered Equipment

A. Rechargeable battery-powered equipment (e.g., cellular phones, cameras, laptops, micro mobility devices, powered pallet jacks) must be operated, stored, maintained, and charged in accordance with manufacturer guidelines and any applicable University policy.
B. Dispose of batteries in accordance with the Northwestern Hazardous Waste Program.

## XV. Small Electrical Appliances and Equipment

A small appliance is a portable machine, generally used on tabletops, countertops, or other surface to accomplish tasks (e.g., hot plates, microwave ovens, toasters, toaster ovens, fans, lamps, electric kettles, coffee makers, air purifiers, (de)humidifiers).

A. In Northwestern offices, microwaves, hot plates, coffee makers, toaster ovens, toasters, and refrigerators larger than 3 cubic feet are prohibited.
B. In sleeping rooms, microwaves, hot plates, toaster ovens, or any cooking or heating of food or beverages are prohibited. Other heat-producing appliances (e.g., irons) may not be used in sleeping rooms. Refrigerators with interiors larger than three cubic feet are prohibited.
C. Small appliances must be housed in Northwestern kitchens, pantries, or break rooms that are designed for such use.
D. Small, electrical appliances must be approved by a nationally recognized testing laboratory (e.g., Underwriters Laboratories).
E. All electrical appliances (e.g., coffee makers, microwaves, refrigerators, and toasters) must be plugged directly into a wall outlet. The use of extension cords to power such appliances is prohibited.
F. Keep all electrical appliances at least 3 feet away from combustible materials.
G. All electrical appliances must be turned off and unplugged the end of each day or when not in use.
H. Appliances must be grounded (i.e., equipped with a three-pronged cord) or clearly labeled as "double insulated." The case or body of the appliance must be intact with no cracks, chips, or broken parts, and there can be no exposed metal parts or wires.

## XVI. Smoking

Smoking, including the use of electronic cigarettes and vaping, is prohibited in Northwestern-owned buildings and within 25 feet of building entrances, as well as in designated outdoor facilities and where posted.

## XVII. Space Heaters

Space heaters are prohibited in all Northwestern-owned spaces. In the event of temperature-related emergencies, space heaters may be used temporarily. Departments must obtain approval from Facilities Operations and EHS prior to purchasing or operating a space heater. If the department has received approval to use a space heater, they must meet the following requirements:

A. Use only electric space heaters with water/oil fluid-enclosed heating elements or ceramic-covered heating elements that provide radiant heat.
B. Space heaters must be kept three feet from combustible materials (e.g., waste baskets, furniture, coat racks, drapery, and other upholstered materials).
C. Space heaters cannot be placed in areas where flammable or explosive vapors may be potentially found.
D. Space heaters must:
    i. Have a properly working thermostat with overheat protection that automatically shuts off in the event of overheating.
    ii. Have an on/off switch, with an "on" indicator light or some other apparent way of determining that the space heater is "on."
    iii. Be approved by a nationally recognized testing laboratory (e.g., Underwriters Laboratories).
    iv. Have functional tip-over protection (i.e., space heater must turn off automatically if tipped over).
    v. Plug directly into an electrical outlet; the use of extension cords connected to space heaters is prohibited.
    vi. Always be turned off and unplugged when not in use and may not be left hot or on while unattended.

## XVIII. Storage of Combustible Materials

A. Reduce excess storage and keep paper or plastic away from ignition sources.
B. Ensure excess garbage (e.g., empty boxes) is properly removed and disposed of.
C. Storage should be kept in designated areas (e.g., rooms, cabinets) away from egress paths and doors.
D. Storage should be at least 36 inches away from any electrical panel, cabinet, water heater, boiler, or any potential heat-creating device.
E. All storage should be at least 18 inches below the ceiling of any building with sprinklers to allow for effective activation if there is a fire.
F. Do not store materials in mechanical rooms.

## XIX. Tents

A. Tents over 10-ft by 10-ft must adhere to Northwestern's requirements and this section.
B. Departments, schools, and units must submit a request through Norris Events.
C. Tents must be inspected by EHS and the fire department prior to hosting the event.

D. The tent/canopy must be composed of flame-resistant material or treated with a flame retardant. The tent/canopy must have an affixed label.
E. In general, 10-pound, portable, ABC fire extinguishers must be mounted in conspicuous locations; in kitchen areas, K-type fire extinguishers must be provided instead of ABC-types.
F. Tents, where cooking is performed, must be a minimum of 20 feet from all other tents and approved for use by the fire department.
G. Equipment used for cooking must be vented to the outside and equipped with spark arresters (when required). Vents/flues must be a minimum of 12 inches from the tent.
H. Outdoor cooking must be performed a minimum of 20 feet from tents.
I. Cooking and heating equipment must be a minimum of 10 feet from exits or combustible materials.
J. LP-gas containers less than 500 gallons must be a minimum of 10 feet from tents; LP-gas containers greater than 500 gallons must be a minimum of 25 feet from tents.
K. Flammable and combustible liquids must be stored outside in an approved manner a minimum of 50 feet from tents.
L. Refuel flammable-liquid-fueled equipment at least 20 feet from tents.
M. Generators and similar items must be a minimum of 20 feet from tents.
N. A multiplex power strip with surge protection or temporary wiring approved by the fire department must be used.
O. Electric heaters must be labeled and connected to electricity by a cable suitable for outside use and of a sufficient size to handle the load.
P. Floors within tents and the ground outside tents within a 30-foot perimeter must be kept clear of combustible waste.
Q. Smoking is not permitted in tents.

## XX. Regulatory Authority and Related Information

Northwestern and contractors will comply with the Occupational Safety and Health Administration's (OSHA) standards, National Fire Protection Association's (NFPA) codes, and any other applicable codes and standards, including:

OSHA 29 CFR 1910.39 – Exit Routes and Emergency Planning
OSHA 29 CFR 1910.157 – Portable Fire Extinguishers
OSHA 29 CFR 1910.106 – Flammable Liquids
NFPA 55 – Compressed Gasses and Cryogenic Fluids
City of Evanston Title 4 – Building Regulations, Chapter 4 – Fire Prevention Regulations
Northwestern Tent Inspections
Northwestern Fire Watch Program
Northwestern Welding, Cutting, and Brazing (Hot Work) Program
Northwestern Contractor Safety Program
Northwestern Residence Hall Policies and Procedures
Northwestern Student Handbook

## XXI. Contact

For questions, contact Environmental Health and Safety at ehs@northwestern.edu or (847) 467-6342.