

# Hot Work Permit Guidelines



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## A. Introduction

Hot work operations include welding, brazing, torch cutting, grinding, and torch soldering. These operations create heat, sparks, and hot slag that have the potential to ignite flammable and combustible materials in the area surrounding hot work activities. The United States averages 12,630 hot work fires resulting in \$308.9 million in property damages and 31 deaths per year. A single hot work fire can be devastating, as occurred in the hot work fire at the Old Capitol in Iowa City. The repairs and restoration work associated with this fire resulted in the expenditure of over \$5 million.

Hot work is frequently performed in University of Illinois at Chicago facilities. The university Hot Work Permit Program was developed in accordance with OSHA regulations, NFPA recommendations, and these Hot Work Permit Guidelines with the goal of preventing hot work fires. The purpose of this booklet is to outline the requirements of the University of Illinois at Chicago [Hot Work Permit Program](#).



Photo by Gary Galluzzo, University News Services, University of Iowa

## B. Who's involved in the Hot Work Permit process?

**Department Supervisors** oversee the Hot Work Permit program for hot work operations under their supervision. Supervisors are responsible for designating employees as Permit Authorizing Individuals (PAI), who will issue Hot Work Permits. Blank forms can be found on the EHSO website, [www.ehso.uic.edu/fire\\_safety](http://www.ehso.uic.edu/fire_safety)

- Any employee who has successfully completed hot work safety training may be a Permit Authorizing Individual
- Hot Work Operators are allowed to be PAI, but they are not allowed to issue their own hot work permits.

**Project Managers (PM)** will advise all outside contractors that a Hot Works Permit is required, and provide them with the EHSO Fire Safety Contact information and website. [www.ehso.uic.edu/fire\\_safety](http://www.ehso.uic.edu/fire_safety)

**Outside Contractors** all outside contractors shall provide proof of hot works and fire extinguisher training. Or take the on-line EHSO training courses and forward copies of the certificate of completion, to [firesafety@uic.edu](mailto:firesafety@uic.edu). Both classes are located at [www.ehso.uic.edu/tools/training](http://www.ehso.uic.edu/tools/training), scroll down to occupational safety. All contractors shall use the UIC Hot Work Permit follow our policies when conducting hot work, on campus. This includes emailing a copy to the EHSO [Fire/Safety Division](#).

A **Permit Authorizing Individual (PAI)** inspects hot work sites prior to the start of hot work operations using the checklist found on the Hot Work Permit Form. When a fire watch is required, the Permit Authorizing Individual will designate an employee to serve as Fire Watch. Once all requirements on the forms have been satisfied and the form is signed by a Permit Authorizing Individual, the document becomes a Hot Work Permit and must be posted in the area where hot work is to be performed.

**Hot Work Operators (HWOs)** are employees who perform hot work operations. An HWO must always obtain a Hot Work Permit before beginning hot work.

A **Fire Watch** is posted to monitor the safety of hot work operations and watch for fires. Fire Watches are posted by a Permit Authorizing Individual if the situation requires one, during hot work, and for at least 30 minutes after work has been completed. Any employee who has successfully completed hot work safety training can serve as the Fire Watch. See page 4, for information regarding circumstances that require a Fire Watch.



## C. What is the process for obtaining a Hot Work Permit?

A Hot Work Operator determines a need for hot work.



The Hot Work Operator ensures the area around hot work activities is in compliance with the safety requirements of the Hot Work Permit.



The Hot Work Operator contacts a Permit Authorizing Individual.



The Permit Authorizing Individual inspects the hot work site and completes the Hot Work Permit Form.



The Permit Authorizing Individual posts a Fire Watch if the situation requires one.



Once all permit safety guidelines are satisfied, the Permit Authorizing Individual signs and posts the permit.



The Hot Work Operator can then begin hot work.

## D. What safety measures are required by the Hot Work Permit?

### The 35-Foot Rule

- All flammable and combustible materials within a 35-foot radius of hot work must be removed.
- When flammable and combustible materials within a 35-foot radius of hot work cannot be removed, they must be covered with flame-retardant tarps and a fire watch must be posted.
- Floors and surfaces within a 35-foot radius of the hot work area must be swept free of combustible dust or debris.
- All openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat, and flames must be covered.

### Fire Detection and Suppression

- A fire extinguisher must be readily available and accessible.
- Entire building smoke detection and alarms systems cannot be shut down, the system shall be impaired by the Fire, Access, Safety, Team. All smoke detectors in the area of hot work shall be covered for the duration of hot work to prevent false alarms, and damage to the detectors.
- Automatic sprinkler systems may not be shut down to perform hot work.

### Fire Watch

A Fire Watch must be posted by an if the following conditions exist:

- Combustible materials cannot be removed from within a 35-foot radius of the hot work.
- Wall or floor openings within a 35-foot radius of hot work expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
- Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited.

## General Guidelines

- Work should be performed using alternative methods other than hot work whenever possible.
- Hot work should be performed in designated hot work rooms whenever it is practical.
- A Hot Work Permit is valid for one day and one area and ***shall be posted*** in the area of hot work for the duration of the activity.
- A copy of every permit shall be filed by the PAI in a location designated by the supervisor and kept for a period of at least six months.
- A copy of every permit shall be email to EHSO Fire Safety, a shortcut button is located at the bottom of the form to assist with this requirement.
- A fire extinguisher must be present when performing hot work.
- The UIC Hot Works Permit can be found at [Click Here](#)



## E. Is a Hot Work Permit always required?

### Designated Hot Work Rooms



A designated hot work room is a permanent location designed for hot work. These rooms do not require a permit to perform hot work. For a room to be classified as a designated hot work room, it must meet the following requirements:

- It must be of noncombustible fire-resistive construction, essentially free of combustible and flammable contents.
- It must be suitably segregated from adjacent areas.
- It must be equipped with fire extinguishers.
- It must be inspected and approved by EHSO Fire Safety.

Upon request, EHSO Fire Safety will inspect departmental hot work locations to receive Designated Hot Work Area status. Designated Hot Work Areas must be inspected and certified by EHSO Fire Safety. All hot work completed in areas not certified by EHSO Fire Safety must be performed under the Hot Work permitting process. Designated Hot Work Areas will be re-inspected and certified by EHSO Fire Safety annually.



### Operations Not Requiring a Hot Work Permit

Operations that produce a flame, sparks, hot slag or enough heat to ignite combustible materials should be considered hot work with a few exceptions. The following operations do not require a Hot Work Permit:

- Bunsen burners in laboratories
- fixed grinding wheels
- electric soldering irons
- cooking operations

*All operations that produce open flames, hot sparks, or metals that could ignite combustible materials should be handled with care and treated with fire safety in mind.*

If you are unsure if an operation is considered hot work, please contact EHSO Fire Safety at [firesafety@uic.edu](mailto:firesafety@uic.edu)

## F. Are there any situations when hot work is not allowed?

### Non-permissible Hot Work Situations

Hot work is not permitted when the following conditions exist:

- When an entire building fire detection system is shut down.
- In the presence of explosive atmospheres where mixtures of flammable gases, vapors, liquids, or dusts may exist.
- In tanks, drums, or other containers and equipment that contain or previously contained materials that could create explosive atmospheres.



## G. What hot work safety training is required?

### EHSO Training

Individuals involved in hot work are required to complete hot work training, including supervisors, permit authorizing individuals, hot work operators, and fire watch personnel. The following *EHSO courses* must be completed.

Contractors that do not have proof of training, shall take the on-line Hot Works and Fire Extinguisher training. They shall forward a copy of the certificate of completion to [firesafety@uic.edu](mailto:firesafety@uic.edu). The training can be found at [www.ehso,uic.edu/tools/training](http://www.ehso,uic.edu/tools/training), scroll down to occupational safety

- **Hot Work Permit Training** - required upon initial assignment and refresher training required every five years.
- **Fire Extinguisher Training** - required once a year. The hands-on classroom training must be completed for the initial class. The online fire extinguisher training course may be completed for the yearly refresher requirement.

### Departmental Training

Managers shall train employees on departmental Hot Work Permit procedures and specific safety procedures for the type of hot work equipment used. This training shall be completed upon initial assignment and cover the following subjects:

- Safety procedures specific to the equipment used.
- Required personal protective equipment for job tasks.
- Identification of Permit Authorizing Individuals and how they can be contacted.
- Locations of designated hot work rooms where a Hot Work Permit is not required.

## H. Are there hot work requirements for contractors?



Outside contractors working on the UIC campus are required to have hot work safety procedures as a part of their project safety programs. Contractors working on projects at UIC are required to show proof of hot work safety and fire extinguisher training.

## Do you have hot work related questions?

If you have any questions regarding hot work or would like more information, call EHSO Fire Safety at (312) 996-7116, or [email](#).

## I. Hot Work Fire Facts

### The top ten materials most frequently ignited by welding torches in non-residential structure fires

1. Thermal or acoustical insulation (11%)
2. Unclassified form of material (9.8%)
3. Structural member or framing (9.6%)
4. Rubbish, trash or waste (6.7%)
5. Dust, fiber, or lint (6.6%)
6. Exterior roof covering or finish (5.8%)
7. Accelerant or other gas or liquid in or from pipe or container (4.0%)
8. Fuel (3.9%)
9. Interior wall covering (3.9%)
10. Box, carton, or bag (3.7%)

### The top ten areas of fire origin for non-residential welding torch structure fires

1. Maintenance shop or area (11.9%)
2. Process or manufacturing area (8.8%)
3. Attic, ceiling/roof assembly, or concealed space (6.5%)
4. Wall assembly or concealed space (6.5%)
5. Garage (6.5%)
6. Machinery room or area (5.6%)
7. Product storage area, tank, or bin (4.9%)
8. Exterior roof surface (4.6%)
9. Exterior wall surface (3.6%)
10. Duct (3.0%)