



# Office of Environmental Health and Safety

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## Hot Work Operations

### *Standard Operating Procedure*

SOP Number:	F – 01 - 03
Effective Date:	April 14, 2023
Next Review:	April 14, 2026

#### 1. PURPOSE

To prevent fires from hot work activities and to ensure compliance with university policy, regulatory requirements, and best management practices pertaining to hot work activities performed on the university campus and properties.

#### 2. SCOPE

This procedure applies to university employees, students, contractors, and/or visitors performing hot work involving open flame or spark producing equipment at UMass Boston including work by contractors in areas under the control of UMass Boston and for hot work done in designated maintenance shops. This procedure does not apply to laboratory research work involving the use of Bunsen burners.

#### 3. PRECAUTIONS AND HAZARDS

- Hot work may result in unattended fire caused by the flame and/or heat created in the hot work process.
- Hot work activities can produce personnel exposure to UV radiation, welding and other fumes, heat and electrical hazards.

#### 4. PROCEDURE

##### a. Permits

A hot work permit must be obtained from the Office of Environmental Health and Safety (OEHS) for any work covered under this procedure. The permit (example found in Section 12, Attachments) must be filled out in its entirety before submittal to OEHS. The permit request must be submitted at least 24 hours prior to any planned hot work. Emergency permit requests shall be made through the

OEHS office during normal business hours and by contacting OEHS through the UMB Police Department during afterhours. Permits for emergency hot work will happen as quickly as possible after the permit is completed and submitted to OEHS. A hot work permit is only valid for the days/times submitted and a new permit must be requested if work shall continue outside of the original permit coverage.

**b. Permit Exceptions**

Hot work permits are not required for the use of electronic test equipment or portable tools that do not eject sparks or flames. They are not required for the routine laboratory use of open flame using a Bunsen burner in specified areas approved by OEHS such as in labs properly design for work with Bunsen burners. A permit is not required for soldering activities using less than 150 W electric soldering guns. Hot work permits are not required for work occurring in the listed designated hot work areas which shall be reviewed regularly by OEHS. Designated Hot Work Areas shall be posted with a permit as found in the attachments and will regularly be inspected by the hot work supervisor and OEHS.

1. Designated Hot Work Areas:
  - a. Plumbing Shop, S&S-UL-004
  - b. Grounds Garage, S&S-LL-004

**c. Pre-Hot Work**

The hot work operator shall determine if any alternatives are available so that hot work can be avoided. The hot work operator will inspect the hot work area to insure the absence of combustible, flammable, or explosive materials. The operator will ensure that all hot work equipment is in proper, functioning order and that at least a 5 lbs. ABC dry chemical fire extinguisher is present at the hot work area. The operator will verify that all combustibles or flammables have been removed from within 35 feet of the hot work area. The work area must be inspected for fire protection systems. The hot work supervisor or operator must contact UMB Facilities if any fire protection devices such as heat or smoke detectors must be deactivated.

OEHS will review any hot work area if the hot work operator reports that there are flammable materials within 35 feet of the hot work area, that the hot work will occur within a laboratory, or if there are any other hazardous conditions the operator has questions about.

**d. Hot Work**

All provisions of this procedure and those criteria listed on the hot work permit checklist shall be followed. Hot work will be performed in a hot work designated area, when possible. The hot work operator and fire watch shall be focused on the hot work and not distracted by other job duties. The hot work operator will ensure that employees, students, visitors, contractors, and the campus are suitably protected against the hot work hazards.

**e. Post Hot Work**

The fire watch or hot work operator must stay on site for at least 30 minutes after any hot work procedure involving open flame or sparks is completed. This would include welding or torch/plasma cutting. The hot work operator must inspect the hot work area to verify that there is no fire or smoldering debris when the above-mentioned time has elapsed after completion of hot work activity. The hot work operator will then remove the hot work permit, sign it as complete, and return it to OEHS for filing.

**5. ROLES AND RESPONSIBILITIES**

**a. Hot Work Operators:**

- Are responsible for following the details of this procedure as well as City, State and Federal regulations.
- Must have successfully completed the NFPA's Hot Work Safety Certificate Program or other approved by the City or State
- Must request and obtain a UMB Hot Work Permit.
- Must be properly trained and proficient in the hot work equipment they are utilizing.
- Must ensure that all hot work equipment is in good working condition.
- Must protect all nearby personnel, passersby, and combustible materials from the flame, heat, and sparks they are producing or working with.
- When required, they shall not conduct hot work without the presence of a fire watch.
- Must conduct daily workplace surveillance prior to and upon completion of the actual hot work being performed under their permit.
- Shall visibly post the completed Hot Work Permit in the direct area of the hot work being performed.
- Shall notify OEHS of any hazardous incident that occurs during a hot work procedure.
- The hot work operator must contact Facilities if any fire protection devices such as heat or smoke detectors must be deactivated.

**b. Hot Work Supervisors or Management (Facilities and/or others):**

- Shall be responsible for the safe handling of hot work equipment and processes.
- Must ensure that all their staff and contractors follow this hot work procedure as well as applicable City, State, and Federal regulations.
- Must have successfully completed the NFPA's Hot Work Safety Certificate Program or other approved by the City and or State

- Must ensure that hot work permits are issued for all hot work performed by their staff or contractors in scope of this procedure.
- Must ensure that hot work operators are properly trained and proficient in the hot work equipment they are utilizing.
- Shall conduct daily workplace surveillance at the hot work area under their staff's permit in high hazard areas such as laboratories or other areas with nearby flammables.
- When required, they shall provide staff for a fire watch in accordance with this hot work procedure.
- Must ensure that contractors performing hot work out of control of UMass Boston, but on UMass Boston property, are using their own approved hot work procedure in accordance with the Boston Fire Department (BFD), City of Boston, State of Massachusetts, and Occupational Health and Safety Administration (OSHA).
- If responsible for a designated Hot Work Area, must inspect the area monthly to ensure that the area meets the requirements called forth in the attached Hot Work permit.

**c. Fire Watch shall:**

- Be required when hot work:
  - Activities might lead to other than a minor fire.
  - Tasks such as welding and cutting are performed.
  - Occurs closer than 35 ft. to combustible materials.
  - Occurs closer than 35 ft. to combustible materials exposed by walls or floor openings.
  - Occurs on the opposite side of walls, ceilings, roof, etc. which might conduct heat or radiation to combustible materials that might be ignited.
- Be trained to properly use the fire extinguisher required for the hot work operation being performed.
- Have the proper fire extinguisher for the type of hot work being performed.
- Inspect daily their area of responsibility prior to the commencement of their hot work.
- Only operate as the Fire Watch with no other duties than to observe the area for fires, potential fires, or other hot work-related safety issues.
- Stay on watch for 30 minutes after the completion of the hot work as identified in section 4.e.

**d. UMass Boston Contractors shall:**

- Ensure that all of their employees and subcontractors under control of UMass Boston are following this hot work procedure.
- Ensure that hot work permits are issued for all hot work performed by their contractors and sub-contractors in scope of this procedure.

- Ensure that their employees and sub-contractors performing hot work outside the scope of this procedure are using their own hot work procedure in accordance with the Boston Fire Department, City of Boston, State of Massachusetts, and OSHA. This includes obtaining a BFD Hot Work Permit when required.
- Ensure that hot work operators are properly trained and proficient in the hot work equipment they are utilizing.
- Ensure that their hot work operators have successfully completed the NFPA's Hot Work Safety Certificate Program
- They shall procure any and all permits and licenses, required for this work, by any regulatory agency.

**e. Environmental Health and Safety (OEHS) shall:**

- Ensure that this procedure meets the requirements of UMass Boston and any applicable regulation.
- Update this hot work procedure as required.
- Provide hot work and fire extinguisher training when appropriate and requested.
- Provide an appropriate UMass Boston Hot Work Permit as listed in the definitions.
- Conduct workplace surveillance prior to the actual hot work being performed under UMass Boston's control in high hazard areas such as laboratories or other areas with nearby flammables.
- Investigate any report of a hazardous situation that was created or arose during a hot work operation.
- Track all reported hot work activities reported to be conducted under the control of UMass Boston.
- Inspect Designated Hot Work Areas regularly.

**6. REFERENCES**

- OSHA 29 CFR 1910 Subpart Q Welding, Cutting, and Brazing
- NFPA Standard 51B
- Massachusetts State Fire Code
- Massachusetts website for Welding, Cutting, and Other Hot Works
- Boston Fire Department Instructions for Cutting/Welding and other Hot Work

**7. EQUIPMENT AND MATERIALS**

- Hot Work Permit: See Section 12, Attachments for the acceptable UMass Boston Hot Work Permit.
- At least one 5 lb. ABC fire extinguisher
- Fire / welding blankets as required.

**8. TRAINING**

- Fire extinguisher training is required for any person acting as the fire watch.
- All hot work operators shall be trained in the proper use and maintenance of their hot work-related equipment.
- Successful completion of NFPA's Hot Work Safety Certificate Program (or other as approved by the City) required for hot work operators and fire watch staff.
- UMB hot work operators, fire watch, and supervisors should take the UMB online hot work training a year after the NFPA course is completed.


**9. DEFINITIONS**

- Designated Hot Work Area: A fixed area that is set up for hot work activities on a regular basis. Designated Hot Work Areas shall be posted with signage as found in the attachments and will regularly be inspected by the hot work supervisor and OEHS. A list of the current area (s) can be found in Section 4.b.1.
- OEHS: Office of Environmental Health and Safety
- Hot Work: Work which involves riveting, welding, flame cutting or other fire or spark producing operation. It includes but is not limited to the following activities: welding, soldering, flame cutting, brazing, work with open flame, grinding, and torch applied roofing.
- UMass Boston: UMass Boston shall include the campus at 100 Morrissey Boulevard, the Bayside Office Building, and the Nantucket Branch Campus.

**10. RECORDKEEPING**

- a. The hot work operator shall return the hot work permit to OEHS after completion of the hot work activities.
- b. OEHS shall store the expired Hot Work Permit for one year after the date of completion.
- c. OEHS shall track all reported hot work operations within the control of UMass Boston.
- d. OEHS shall file all reports of hot work-related incidents.

**11. APPROVAL SIGNATURE**

	Zehra Schneider Graham OEHS Director	4/14/23
Approved by signature	Name, Title	Date

**12. ATTACHMENTS**

# HOT WORK PERMIT

All temporary operations involving open flames or producing heat and/or sparks require a Hot Work Permit. This includes, but is not limited to, brazing, cutting, grinding, soldering, thawing, and welding.

## INSTRUCTIONS FOR FIRE SAFETY SUPERVISOR

1. Verify precautions listed at right (or do not proceed with the work).
2. Complete PLY 1 and retain for job files.
3. Post PLY 2 in vicinity of hot work.

DATE \_\_\_\_\_ JOB NO. \_\_\_\_\_

LOCATION/BUILDING & FLOOR (Be Specific) \_\_\_\_\_

DESCRIPTION OF WORK BEING PERFORMED \_\_\_\_\_

NAME OF PERSON DOING HOT WORK \_\_\_\_\_

The above location has been examined, the precautions checked on the Hot Work Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNED: \_\_\_\_\_  
(Fire Safety Supervisor)

SIGNED: \_\_\_\_\_  
(Person doing Hot Work)

SIGNED: \_\_\_\_\_  
(Fire Watch)

TIME STARTED: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM

PERMIT EXPIRES: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM

## PART A

### HOT WORK CHECKLIST

- Sprinklers and fire hoses streams in service/operable.
- Hot Work equipment in good condition (e.g., power source, welding leads, torches, etc.)
- Multi-purpose fire extinguisher and/or water pump can.

### REQUIREMENTS WITHIN 35 FEET OF WORK

- Dust, lint, debris, flammable liquids and oily deposits removed.
- Explosive atmosphere in area eliminated.
- Combustible floors (e.g., wood, tile, carpeting) wet down, covered with damp sand or fire blankets.
- Flammable and combustible material, remove where possible. Otherwise protected with fire blankets, guards, or metal shields.
- All wall and floor openings covered.
- Walkways protected beneath hot work.

### WORK ON WALLS OR CEILINGS

- Combustibles moved away from other side of wall.

### WORK IN CONFINED SPACES

- Confined space cleaned of all combustibles (example: grease, oil, flammable vapors).
- Containers purged of flammable liquids/vapors.
- Company confined space guidelines followed.

### FIRE WATCH/HOT WORK AREA MONITORING

- Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.
- Fire watch is supplied with an extinguisher, and/or water pump can, also making use of other extinguishers located throughout work area.
- Fire watch is trained in use of this equipment and familiar with location of sounding alarm.
- Fire watch is required for opposite side of walls, above, and below floors and ceilings.

### OTHER PRECAUTIONS TAKEN

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

FILL OUT EMERGENCY INFORMATION ON BACK OF PLY 2.

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**WARNING!**

**HOT WORK IN PROGRESS  
WATCH FOR FIRE!**

**IN CASE OF AN EMERGENCY:**

**CALL:** \_\_\_\_\_

**AT:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**WARNING!**