

UD HOT WORK PERMIT PROGRAM

A. PROGRAM ADMINISTRATION

Per State and National Fire Regulations, the Hot Work Permit Program is implemented to prevent fires during welding, cutting, and other associated hot work. The Department of Environmental Health and Safety is responsible for program administration. Construction Project Managers, General Contractors and Operations and Maintenance Supervisors should oversee the issuing of Hot Work Permits for projects and jobs they are supervising or managing.

B. DEFINITIONS AND TERMS

Hot Work: Any work that involves burning, welding, cutting, brazing, soldering, grinding, using fire- or spark-producing tools, or other work that produces a source of ignition. Roofing operations involving torches and/or open flames. Welding and cutting operations are common to drilling and servicing operations.

Fire Safety Supervisor: Construction Managers, Operations and Maintenance Supervisors, and EHS/Fire Protection Representative who completes the Hot Work Notification Form and issue the Hot Work Permit.

Fire Watch: Person or persons who are responsible to standby during hot work operations to prevent unwanted ignition, or heating of materials. Where applicable, more than one fire watch may be required due to work involving multiple areas and/or levels. The fire watch will have a serviceable fire extinguisher nearby and immediately stop work in the event of unwanted ignition; signs off on the Hot Work Permit Form at start of hot work. Persons performing fire watch shall meet the following qualifications:

- A. The fire watch shall be trained to understand the inherent hazards of the work site and of the hot work.
- B. The fire watch shall ensure that safe conditions are maintained during hot work operations.
- C. The fire watch shall have the authority to stop the hot work operations if unsafe conditions develop.
- D. The fire watch shall have fire-extinguishing equipment readily available and shall be trained in its use.
- E. The fire watch shall be familiar with the facilities and procedures for sounding an alarm in the event of a fire.
- F. The fire watch shall watch for fires in all exposed areas and try to extinguish them only when the fires are obviously within the capacity of the equipment available. If the fire watch determines

that the fire is not within the capacity of the equipment, the fire watch shall sound the alarm immediately.

Hot Work Notification Form: Online form located on Environmental Health & Safety's website that must be completed prior to any hot work taking place (link: <https://www.formstack.com/forms/?3686669-X3bdLDM5ZN>). If there is a need for any shop support (e.g. fire alarm bypassed) this form must be completed a minimum of 5 days prior to the start date.

Hot Work Permit: UD Hot Work Permit Form obtained by submitting a Hot Work Notification Form and issued by a Fire Safety Supervisor to person or persons when performing hot work in Permit Required Hot Work Areas. Permit is typically valid for a single days work period but can be extended to longer periods when conditions warrant. The checklist and precautions appearing on the form will act as a worksite checklist.

Hot Work Permit Monitor: Person who performed the hot work or fire watch and is responsible for monitoring of welding area for up to 3 hours upon completion of hot work, and signs off the Final Check-up section of the Hot Work Permit Form. The duration of the monitoring period will be established by the Fire Safety Supervisor.

Non-Permit Required Hot Work Area: Spaces within buildings designated as non-permit required due hot work typically being conducted in the space, construction features allowing the work, and fire protection systems provided. Examples include sheet metal shops and similar industrial locations. Areas exterior to the buildings when greater than 35 feet from structures or other exposures such as cylinder storage and propane tanks, etc.

Permit Required Hot Work Area: Spaces and areas within and around structures on campus that are not declared Non-Permit Required Work Areas. The area around structures includes a radius of 35 feet and closer at the exterior of structures, unless declared otherwise.

C. PROGRAM PROCEDURES

1. Construction Projects:

- A. Preconstruction Meeting with DEHS/Fire Protection Representative and proposed contractors will be conducted to outline Hot Work Permit Program.
- B. Fire Safety Supervisor or designee will complete the online Hot Work Notification Form. If shop support is required, the form shall be completed (5) business days prior.
- C. Once the Hot Work Notification has been submitted the applicant will receive an email obtaining the hot work permit. This permit shall be printed and taken to the job site. The job site is to be inspected by PPD Project Manager or General Contractor acting as the Fire Safety Supervisor. The checklist provided within the permit document will be utilized during site survey to verify conditions are safe. Upon declaring the work site acceptable, the

written permit form will be completed by the Fire Safety Supervisor and posted onsite for the duration of the hot work.

- D. An assigned Fire Watch will sign off on the permit at the start of the hot work and will remain at the site for the duration of the hot work. The fire watch will have a serviceable fire extinguisher and a means of communication. They will readily stop work and extinguish spot fires should they occur. In the event of a fire beyond their capability to extinguish, the fire watch will call 9-1-1 and initiate an evacuation of the job site. **All** fires should be reported to Environmental Health & Safety.
- E. Upon completion of hot work, the fire watch or person conducting the hot work will monitor the work site for the duration specified in appendix A of this policy, to ensure no smoldering or hidden fire conditions exist. Upon completion of the monitoring period, the monitor will sign-off the final check-up section of the permit form and return to the Fire Safety Supervisor for filing at the work site.
- F. A copy of the completed Hot Work Permit should be sent to Environmental Health & Safety via email at Fire-Safe@udel.edu or dropped off at the General Services Building Room 132 222 S. Chapel Street, Newark, DE 19716.

2. Facilities Operations and Maintenance Hot Work:

- A. Operations and Maintenance Supervisors will evaluate proposed work sites and determine if the location is Hot Work Permit or Non Hot Work Permit required.
- B. If the site is deemed permit required, the Fire Safety Supervisor (O&M Supervisor or designee) will complete the online Hot Work Notification Form. If additional shop support is required, the form shall be completed (5) business days prior.
- C. Once the Hot Work Notification has been submitted the applicant will receive an email obtaining the hot work permit. This permit shall be printed and taken to the job site. The checklist provided within the permit document will be utilized during site survey to verify conditions are safe. The job site is to be inspected by the Fire Safety Supervisor. Upon declaring the work site acceptable, the written permit form will be completed by the Fire Safety Supervisor and posted onsite for the duration of the hot work.
- D. An assigned Fire Watch will sign off on the permit at the start of the hot work and will remain at the site for the duration of the hot work. The fire watch will have a serviceable fire extinguisher and a means of communication. They will readily stop work and extinguish spot fires should they occur. In the event of a fire beyond their capability to extinguish, the fire watch will call 9-1-1 and initiate an evacuation of the job site. **All** fires should be reported to Environmental Health & Safety.

- E. Upon completion of hot work, the fire watch or person conducting the hot work will monitor the work site for the duration specified in appendix A of this policy, to ensure no smoldering or hidden fire conditions exist. Upon completion of the monitoring period, the monitor will sign-off the final check-up section of the permit form and return to the Fire Safety Supervisor for filing at the work site.
 - F. A copy of the completed Hot Work Permit should be sent to Environmental Health & Safety via email at Fire-Safe@udel.edu or dropped off at the General Services Building Room 132 222 S. Chapel Street, Newark, DE 19716.
3. All Other Requested Hot Work Permits:
- A. Requester will complete the online Hot Work Notification Form. If shop support is required, the form shall be completed (5) business days prior.
 - B. UD Fire Protection Staff will evaluate the proposed work site and determine if the location is Hot Work Permit or Non-Hot Work Permit required.
 - C. When a Hot Work Permit is required, the Fire Protection Staff will act as Fire Safety Supervisor. The checklist provided within the permit document will be utilized during site survey to verify conditions are safe. Upon declaring the work site acceptable, the written permit form will be completed by the Fire Safety Supervisor. An assigned Fire Watch will sign off at the start of the hot work and will remain onsite for the duration of the hot work. The fire watch will have a serviceable fire extinguisher and a means of communication. They will readily stop work and extinguish spot fires should they occur. In the event of a fire beyond their capability to extinguish, the fire watch will call 9-1-1 and initiate an evacuation of the job site. **All** fires should be reported to Environmental Health & Safety.
 - G. Upon completion of hot work, the fire watch or person conducting the hot work will monitor the work site for the duration specified in appendix A of this policy, to ensure no smoldering or hidden fire conditions exist. Upon completion of the monitoring period, the monitor will sign-off on the permit form and return to Environmental Health & Safety via email at Fire-Safe@udel.edu or dropped off at the General Services Building Room 132 222 S. Chapel Street, Newark, DE 19716.
4. Equipment: All equipment used for hot work shall be chosen for safe application to the work and shall be properly installed. Proper shielding and eye protection to prevent exposure to personnel from hot work hazards shall be provided and used.
5. Training: Workers designated to operate welding, soldering, cutting and other hot work equipment shall be trained in the use of the equipment. Additionally, workers who operate welding equipment shall be properly instructed and qualified to operate the equipment.

6. Fire Prevention: Precautions for fire prevention in areas where hot work is being done shall include isolating hot work activities, removing hazards from the vicinity and providing a fire watch.
 - Provisions for isolating smoke detectors shall be coordinated with the Facilities M&O Fire Alarm Senior Technician.
 - All Hot Work shall be **suspended** during SPRINKLER SYSTEM OUTAGES.

7. Ventilation: Mechanical ventilation shall be provided when welding or cutting:
 - beryllium, cadmium, lead, zinc, stainless steel or mercury;
 - fluxes, metal coatings or other material containing fluorine components;
 - where there is less than 10,000 cubic feet per welder;
 - in confined spaces;
 - where there is a possibility of fumes spreading in an occupied building

Questions regarding the Hot Work Permit Program may be addressed to [Kevin McSweeney](#) or call 831-8475

D. APPENDIX A

Construction and Occupancy Factors for Post-Work Fire Watch and Monitoring Periods

| | | Construction Factors | | | | | |
|--------------------------|--|---|---------|---|---------|--|---------|
| | | Noncombustible construction, or FM Approved Class 1 or Class A building materials | | Combustible construction without concealed cavities | | Combustible construction with unprotected concealed cavities | |
| | | Watch | Monitor | Watch | Monitor | Watch | Monitor |
| Occupancy Factors | Noncombustible with any combustibles contained within closed equipment (e.g., ignitable liquid within piping) | 30 minutes | 0 hours | 1 hour | 3 hours | 1 hour | 5 hours |
| | Office, retail or manufacturing with limited combustible loading | 1 hour | 1 hour | 1 hour | 3 hours | 1 hour | 5 hours |
| | Manufacturing with moderate to significant combustible loading except as noted below | 1 hour | 2 hours | 1 hour | 3 hours | 1 hour | 5 hours |
| | Warehousing | 1 hour | 2 hours | 1 hour | 3 hours | 1 hour | 5 hours |
| | Exceptions: Occupancies with processing or having bulk storage of combustible materials capable of supporting slow-growing fires (e.g., paper, pulp, textile fibers, wood, bark, grain, coal or charcoal) | 1 hour | 3 hours | 1 hour | 3 hours | 1 hour | 5 hours |

When performing torch-applied roofing, apply additional precautions and conduct a minimum 2 hours fire watch and 2 hours fire monitoring. If an infrared camera is utilized, reduce to a 1 hour fire watch and 1 hour fire monitoring.

When performing hot work on/in equipment containing nonremovable combustible linings or parts, apply additional precautions and conduct a minimum 1 hour fire watch and 3 hours fire monitoring within the equipment, and in the surrounding areas per Table above.

