
Hot Work Safety Policy

University of Portland
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Version 2.0

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Prepared by:

Environmental Health and Safety



Table of Contents

- SECTION ONE - PURPOSE 1**
 - 1.1 UNIVERSITY OF PORTLAND 1
 - 1.2 STATE OF OREGON..... 1
- SECTION TWO – DEFINITIONS 2**
- SECTION THREE – APPLICATION 3**
 - 3.1 COVERAGE 3
 - 3.2 ADDITIONAL..... 3
- SECTION FOUR – RESPONSIBILITIES 4**
 - 4.1 HOT WORK SUPERVISOR 4
 - 4.2 HOT WORK OPERATOR 4
 - 4.3 FIRE WATCH..... 5
- SECTION FIVE – OPERATIONAL REQUIREMENTS 7**
 - 5.1 DESIGNATED HOT WORK AREAS 7
 - 5.2 NON-DESIGNATED HOT WORK AREAS..... 7
 - 5.3 HOT WORK PERMIT 7
 - 5.4 HOT WORK CLOSE-OUT..... 9
- APPENDIX I – HOT WORK PERMIT 10**

Review and Approval

This University of Portland Hot Work Safety Policy is hereby approved and effective as of this date.

University Officer Signature	Printed Name	Title	Date
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This University of Portland Hot Work Policy has been reviewed for content and applicability.

Public Safety Representative Signature	Printed Name	Title	Date
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Physical Plant Representative Signature	Printed Name	Title	Date
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SECTION ONE - PURPOSE

1.1 UNIVERSITY OF PORTLAND

- 1.1.1 The University of Portland is dedicated to the safety of personnel, whether faculty, staff, students, or non-University.
- 1.1.2 This policy is designed to assure that all University employees (faculty, staff, students) and contractors working under University supervision shall comply with the elements of this policy.
 - 1.1.2.1 This policy is intended to assure proper communication and decision-making within the Physical Plant for hot work operation, due to maintenance or emergency requirements.
 - 1.1.2.2 This policy is established to assure adequate communication between the Physical Plant and the areas of the University affected by hot work operation, due to maintenance or emergency requirements.
 - 1.1.2.3 It is also intended that all contractors (non-University personnel) follow the guidelines as set forth in this policy.

1.2 STATE OF OREGON

- 1.2.1 The authority governing hot work safety at the University of Portland is Oregon OSHA Standard § 1910.252 through 1910.254.

SECTION TWO – DEFINITIONS

- 2.1 Designated Hot Work Area – semi- or permanent location specifically designed for regular hot work operation and approved by the Hot Work Supervisor.
- 2.2 Hot Work – any operation that includes cutting, welding, use of open torch, brazing, glass blowing, or similar operation producing a spark, flame, or heat that is capable of initiating a fire or explosion.
- 2.3 Hot Work Area – the area that is exposed to sparks, hot slag, or radiant or convective heat as a result of the hot work.
- 2.4 Hot Work Checklist – a tool utilized to establish necessary communication and safeguards as required by this policy and made part of the Hot-Work Permit.
- 2.5 Hot Work Equipment – equipment that is electric or gas welding or cutting equipment used for hot work.
- 2.6 Hot Work Operator – individual designated by the University to perform hot work under the authorization of a Hot Work Supervisor.
- 2.7 Hot Work Permit – the instrument through which permission for a hot work operation is granted, ensuring that all necessary communication and safe guards for the hot work have been accomplished.
- 2.8 Hot Work Supervisor – individual who has successfully completed training in hot work safety and is considered by the University competent in this area.
 - 2.8.1 Individual cannot be the hot work operator.
 - 2.8.2 For outside contractors, the hot work supervisor shall be identified and the name provided to the University's project manager.
- 2.9 Non-Designated Hot Work Area – any area utilized for hot work that has not been established as a Designated Hot Work Area.

SECTION THREE – APPLICATION

3.1 COVERAGE

3.1.1 This policy is designed to prevent injury and loss of property from fire or explosion as a result of hot work operation in all University spaces and activities.

3.1.2 Coverage includes:

3.1.2.1 Welding,

3.1.2.2 Brazing,

3.1.2.3 Soldering,

3.1.2.4 Heat treating,

3.1.2.5 Grinding,

3.1.2.6 Powder-actuated tools,

3.1.2.7 Hot riveting, and

3.1.2.8 Similar applications producing a spark, flame, or heat.

3.1.3 Coverage does not include use of:

3.1.3.1 Candles,

3.1.3.2 Laboratory activities,

3.1.3.3 Pyrotechnics or special effects,

3.1.3.4 Cooking,

3.1.3.5 Soldering irons, or

3.1.3.6 Torch-applied roofing (see NFPA 241)

3.2 ADDITIONAL PERMITS OR REQUIRMENTS

3.2.1 Hot work operations in confined spaces require additional safeguards and are addressed in the University of Portland Confined Space Policy and Permit Program.

3.2.2 Hot work on and near building systems and piping may require additional safeguards with respect to hazardous energy and are addressed in the University of Portland Lock-Out/Tag-Out Procedures.

3.2.3 All hot work performed by outside contractors shall be in conformance, at a minimum, with this policy and with NFPA 51B.

SECTION FOUR – RESPONSIBILITIES

4.1 HOT WORK SUPERVISOR

- 4.1.1 The Hot Work Supervisor is responsible for the overall safe operation of hot work activity under his/her supervision.
- 4.1.2 These responsibilities include:
 - 4.1.2.1 Establishment of permissible areas for hot work,
 - 4.1.2.2 Ensuring only approved apparatus (torches, manifolds, regulators, pressure valves, etc.) are used,
 - 4.1.2.3 Ensuring that all individuals involved in hot work operations are familiar with this policy and its requirements,
 - 4.1.2.4 Ensuring that all individuals involved in hot work are trained in the safe operation of their equipment and possible emergency procedures,
 - 4.1.2.5 Determination of site-specific flammable materials, hazardous processes, or other potential fire hazards present, or likely to be present, in the work location.
 - 4.1.2.6 If warranted, ensuring the hot work area is periodically monitored for four (4) hours after the hot work is completed.
 - 4.1.2.7 Notification of hot work operation to Public Safety.

4.2 HOT WORK OPERATOR

- 4.2.1 The Hot Work Operator is responsible for his/her work area and safe operation therein to ensure safe operation of hot work activity under his/her control.
- 4.2.2 He/she shall handle the equipment safely and perform work so as not to endanger lives and/or property.
- 4.2.3 No hot work shall be conducted without specific written authorization from the Hot Work Supervisor by means of a Hot Work Permit.
- 4.2.4 The Hot Work Operator must immediately cease hot work operation if unsafe conditions develop or requested by the Hot Work Supervisor or Public Safety.
 - 4.2.4.1 If an unsafe condition develops, the Hot Work Supervisor (if not already aware) shall be notified immediately.
 - 4.2.4.1.1 Unsafe concerns expressed by affected personnel shall cause hot work operations to cease and immediate contact with the Hot Work Supervisor established.
- 4.2.5 Responsibilities include:
 - 4.2.5.1 Ensuring combustibles are protected from ignition by:

- 4.2.5.1.1 Moving the work to a location free from combustibles,
 - 4.2.5.1.2 If the work cannot be moved, ensuring the combustibles are moved to a safe distance or properly shielded against ignition,
 - 4.2.5.1.3 Ensuring hot work is scheduled such that operations that could expose flammables or combustibles to ignition do not occur during hot work operations,
 - 4.2.5.1.4 Ensuring that fire protection and extinguishing equipment are properly located and readily available,
 - 4.2.5.1.5 Ensuring sufficient local exhaust ventilation is provided to prevent accumulation of any smoke and fume.
- 4.2.6 If any of the above cannot be met, ensuring that hot work must not be performed.

4.3 FIRE WATCH

- 4.3.1 A fire watch may consist of any combination of Public Safety or Physical Plant personnel who are trained in the use of fire extinguisher use and in sounding a fire alarm.
- 4.3.1.1 It is the responsibility of the Hot Work Supervisor to determine whether or not a fire watch is required.
 - 4.3.1.2 The requirement of a fire watch shall be determined by the kind of hot work being performed and the circumstances under which the hot work is executed.
- 4.3.2 A fire watch, when warranted, shall be provided during and for 30-minutes after the hot work operation.
- 4.3.3 In conjunction with the Hot Work Supervisor, the Hot Work Operator shall establish proper fire-watch procedures when hot work is performed in a location where other than a minor fire might develop where the following conditions exist:
- 4.3.3.1 Combustible materials in building construction or contents are closer than 35 feet to the point of hot work,
 - 4.3.3.2 Combustible materials in a building are more than 35 feet away but are determined to easily ignite by sparks,
 - 4.3.3.3 Wall or floor opening are within 35 feet and expose combustible materials in adjacent areas; this includes combustible materials concealed in walls or floors,
 - 4.3.3.4 Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.
- 4.3.4 More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch; e.g., in adjacent rooms.

- 4.3.5 Where a fire watch is not required, the Hot Work Supervisor shall make a final inspection no less than 30 minutes after the completion of hot work operations for detection and extinguishing of smoldering fires.

SECTION FIVE – OPERATIONAL REQUIREMENTS

5.1 DESIGNATED HOT WORK AREAS

5.1.1 The University may approve specific areas to be designated for regular hot work without the need for repeated Hot Work Permits.

5.1.1.1 These areas shall meet all requirements contained in this policy at all times.

5.1.1.2 These areas shall have been constructed for regular hot work operation.

5.1.2 The Hot Work Supervisor, after inspection, shall initiate a Hot Work Permit on an annual basis for a designated hot work area, which shall be maintained by the Hot Work Operator in the vicinity of the designated hot work area.

5.2 NON-DESIGNATED HOT WORK AREAS

5.2.1 A Hot Work Permit is required each time hot work, as defined in this policy, is utilized in a non-designated hot work area.

5.2.2 A non-designated hot work area must be made safe by removing or protecting combustibles from ignition sources.

5.2.3 Hot Work is *not* allowed:

5.2.3.1 In buildings when its fire protection system is impaired,

5.2.3.2 In the presence of explosive atmospheres or potentially explosive atmospheres; e.g., on containers previously containing flammable solvents,

5.2.3.3 In areas where explosive atmospheres may develop; e.g., accumulation of combustible dust.

5.3 HOT WORK PERMIT

5.3.1 Prior to any hot work operation in a non-designated hot work area, a completed Hot Work Permit must be validated by a Hot Work Supervisor.

5.3.2 The Hot Work Permit cannot exceed 24 hours in duration.

5.3.3 The following conditions shall be addressed by the Hot Work Supervisor prior to the issuance of a Hot Work Permit:

5.3.3.1 Equipment to be used must be in a satisfactorily operational condition and in good repair,

5.3.3.2 The floor of the hot work area must be swept clean for a radius of 35 feet of all combustible materials; e.g., paper or wood shavings,

5.3.3.3 Combustible floors must be:

- 5.3.3.3.1 Kept wet or be covered with damp sand (note: where floors have been wet-down, personnel operating arc-welding or cutting equipment shall be protected from possible shock),
- 5.3.3.3.2 Be protected by non-combustible or fire-retardant shields.
- 5.3.3.4 All combustible materials must be moved at least 35 feet away from the hot work operation.
 - 5.3.3.4.1 If relocation is impractical, combustibles must be protected with fire-retardant covers, shields or curtains.
 - 5.3.3.4.2 Edges of covers at the floor must be tight to prevent sparks from going under them, including where several covers overlap when protecting a large pile.
- 5.3.3.5 Openings or cracks in walls, floors, or ducts within 35 ft of the site must be tightly covered with fire-retardant or noncombustible material to prevent the passage of sparks to adjacent areas.
 - 5.3.3.5.1 If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire-retardant shields or guards must be provided to prevent ignition.
 - 5.3.3.5.2 If hot work is to be done on a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles.
 - 5.3.3.5.3 If it is impractical to relocate combustibles, a fire watch on the opposite side from the work must be posted.
- 5.3.3.6 Hot work must not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.
- 5.3.3.7 Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles must not be undertaken if the work is close enough to cause ignition by conduction.
- 5.3.3.8 Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area.
 - 5.3.3.8.1 These extinguishers should be supplied by the group performing the hot work.
 - 5.3.3.8.2 The fire extinguishers normally located in a building are not considered to fulfill this requirement.
- 5.3.3.9 If hot work is done in the proximity to a sprinkler head:
 - 5.3.3.9.1 a wet rag shall be laid over the head and then removed at the conclusion of the welding or cutting operation.

5.3.3.9.2 During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems (for example, special extinguishing systems or sprinklers).

5.3.3.10 Nearby personnel must be suitably protected against heat, sparks, and slag.

5.4 HOT WORK CLOSE-OUT

5.4.1 A fire watch, if warranted, shall be maintained for at least 30 minutes after completion of hot work operations in order to detect and extinguish smoldering fires.

5.4.2 The Hot Work Supervisor shall ensure inspection of the job site 30 minutes following completion of hot work and close out the permit with the time and date of the final check.

5.4.3 The completed Hot Work Permit shall be retained for one (1) year following completion of the project.

APPENDIX I – HOT WORK PERMIT

<h2 style="margin: 0;">HOT WORK PERMIT</h2>	University of Portland Physical Plant				
BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED? IS THERE A SAFER WAY?					
<p>This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, torch applied roofing, and welding.</p>					
<p style="text-align: center;">INSTRUCTIONS</p> <ol style="list-style-type: none"> 1. Person doing Hot Work: <ol style="list-style-type: none"> a. Indicate time started & post permit at location b. After Hot Work, indicate time completed and leave permit posted for Fire Watch 2. Fire Watch: Prior to leaving area, do final inspection, sign, leave permit posted, and notify Physical Plant 3. Monitor: After 4 hours, do final inspection, sign, and return permit to Physical Plant 	<p style="text-align: center;">REQUIRED PRECAUTIONS CHECKLIST</p> <p>Contact requirements:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Public Safety (x7161) before and after Hot Work and for any emergency. <input type="checkbox"/> Physical Plant (x7306) for any assistance. <p>Equipment requirements:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Available sprinklers, hose streams, and extinguishers are in service and/or operable. <input type="checkbox"/> Hot Work equipment is in good repair. <p>Requirements within 35 ft of work:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Flammable liquids, dust, lint, and oily deposits are removed. <input type="checkbox"/> Explosive atmosphere in the work area is eliminated. <input type="checkbox"/> Floors are swept clean. <input type="checkbox"/> Combustible floors have been wetted down, covered with damp sand or fire-resistant sheets. <input type="checkbox"/> Remove other combustibles where possible – otherwise protect with fire-resistant tarps or metal shields. <input type="checkbox"/> All wall and floor openings are covered. <input type="checkbox"/> Fire-resistant tarps are suspended beneath work when warranted. <p>Work on walls or ceilings</p> <ul style="list-style-type: none"> <input type="checkbox"/> Construction is non-combustible and without combustible covering or insulation. <input type="checkbox"/> Combustibles on other side of adjacent walls are moved away. <p>Work on enclosed equipment</p> <ul style="list-style-type: none"> <input type="checkbox"/> Enclosed equipment is cleaned of all combustibles. <input type="checkbox"/> Containers purged of flammable liquids/vapors. <p>Fire watch/Hot Work area monitoring</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fire watch will be provided during and for 30 minutes after work, including any coffee or lunch breaks. <input type="checkbox"/> Fire watch is supplied with suitable extinguishers. <input type="checkbox"/> Fire watch is trained in use extinguisher and in sounding fire alarm. <input type="checkbox"/> Fire watch may be required for adjoining areas – above and below. <input type="checkbox"/> Monitor Hot Work area for 4 hours after job is completed. <p>Other Precautions Taken</p> <ul style="list-style-type: none"> <input type="checkbox"/> _____ <input type="checkbox"/> _____ 				
<p>HOT WORK BEING DONE BY:</p> <p><input type="checkbox"/> EMPLOYEE</p> <p><input type="checkbox"/> CONTRACTOR _____</p>					
<p>DATE _____ WORK ORDER / PO NO. _____</p>					
<p>LOCATION/BUILDING & FLOOR _____</p>					
<p>NATURE OF WORK _____</p>					
<p>NAME OF PERSON DOING HOT WORK _____</p>					
<p>I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.</p>					
<p>SIGNED: (PHYSICAL PLANT DIRECTOR OR ASSISTANT DIRECTOR) _____</p>					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;">PERMIT EXPIRES:</td> <td style="width: 30%; text-align: center;">DATE _____</td> <td style="width: 30%; text-align: center;">TIME _____</td> <td style="width: 20%; text-align: center;">AM PM</td> </tr> </table>	PERMIT EXPIRES:	DATE _____	TIME _____	AM PM	
PERMIT EXPIRES:	DATE _____	TIME _____	AM PM		
<p>FIRE WATCH SIGNOFF</p> <p>Work area and all adjacent areas to which sparks and heat might have spread were inspected during the fire watch period and were found fire safe.</p> <p>Signed: _____</p>					
<p>FINAL CHECKUP</p> <p>Work area was monitored for 4 hours following Hot Work and found fire safe.</p> <p>Signed: _____</p>					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;">HOT WORK PERMIT NO.</td> <td style="width: 80%; text-align: center; font-size: 2em; font-weight: bold;">05- _____</td> </tr> <tr> <td></td> <td style="text-align: center; font-size: 0.8em;">(Work Order Number)</td> </tr> </table>	HOT WORK PERMIT NO.	05- _____		(Work Order Number)	
HOT WORK PERMIT NO.	05- _____				
	(Work Order Number)				
<p>Hot Work Permit Form – Revised 12/04</p>					