

**HOT WORK POLICY**

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**PURPOSE**

Baylor University recognizes that there is a potential for injury to people and damage to property that can result from fire or sparks that arise when hot work is performed outside of a designated safe hot work area. This operating procedure establishes a permit authorization system to ensure that all hazards are evaluated and that appropriate safety measures and controls are taken prior to and during any operation that uses an open-flame or spark-producing apparatus.

This operating procedure is written in accordance with the Occupational Safety & Health Administration's (OSHA) workplace standard, 29 CFR 1910.252, Welding, Cutting and Brazing and the National Fire Protection Association (NFPA) code standard 51B, Fire Prevention in Use of Cutting and Welding Processes.

**SCOPE**

Hot work operating procedures shall apply to all Baylor University personnel and all contract personnel conducting hot work at, in, and around all University-owned, leased, and/or occupied properties. This policy does not apply to major renovations that result in an unoccupied facility or to new construction. Therefore, general contractors must show proof of compliance within their own system for the management of hot work, and are subject to audit of the program/worksite by Baylor Facilities Services staff & Baylor University Department of Public Safety Fire Safety and Emergency Management Specialist.

**DEFINITIONS**

- Hot Work

Any work using an open-flame or spark-producing apparatus. Hot work includes, but is not limited to, welding, cutting, burning, grinding, and any related heat-producing job that could ignite combustible materials or flammable atmospheres.

- Designated Safe Hot Work Area

Areas that have been designed and constructed for performing open-flame or spark-producing work.

- Fire Watch

Trained personnel who are in attendance during the entire hot work operation and are immediately available to extinguish a fire or take other effective action if needed. The fire watch individual must have attended a Baylor sanctioned hot work permit training course to qualify for fire watch.

- Hot Work Operator

Any employee or contractor who operates an open-flame or spark-producing apparatus or performs any hot work

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- Hot Work Permit

A special permit issued by Baylor University Department of Public Safety which authorizes specified hot work at a specific location and time.

### **RESPONSIBILITY**

#### A. Departments

Departments are responsible for ensuring that the requirements of this operating procedure are understood and practiced by their employees. Any department that employs an outside contractor, who will be performing any hot work, as defined, must comply with the requirements of this procedure. Specific responsibilities of individual departments conducting or coordinating any hot work operations include:

1. If the work involves Baylor facilities the Department will be required to contact Baylor Facilities Services, then the group or person shall coordinate with BFS to assure that procedures outlined in this policy are followed.
2. For special events, the event coordinator shall be responsible for the area in which the hot work is to take place and shall determine if they have any specific concerns about the procedure.
3. Determine the combustible materials and hazardous areas present or likely to be present in the work location.
4. Protect combustibles in the work location by:
  - a. Moving the work to a designated safe hot work area or a location free of combustibles;
  - b. Moving the combustibles (if the location cannot be changed) to a safe distance from the work or properly shielding the combustibles against ignition; or
  - c. Scheduling the hot work during a time when the combustibles are not likely to be in the area.
5. Ensure that workers are provided with and using proper safety equipment, including personal protective equipment and fire extinguishing equipment.

#### B. Baylor Facilities Services

BFS is responsible for providing resources for equipment and personnel training, and for periodically auditing operations to ensure compliance with this procedure. Specific responsibilities include:

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1. Review and approve, in coordination with a departmental representative and/or zone manager, locations approved for hot work operations (designated safe hot work areas).
2. Maintain a list of designated areas.
3. Periodically inspect designated areas to ensure that conditions have not become unsafe for hot work.
4. Provide training for hot work operators, document training and issue certificate.
5. Suspend hot work if conditions become unsafe for the work being performed.

**C. Fire Watch**

A fire watch shall be required whenever hot work is performed at any location on campus other than a designated safe hot work area. The fire watch shall be any BFS employee or contractor employee designated on the hot work permit, but shall not be the actual employee(s) performing the hot work operation. The fire watch must comply with the procedures as set forth in the procedures section of this policy.

**D. Hot Work Operators**

Shall obtain proper authorization to perform hot work operations via the HOT WORK PERMIT and shall handle the equipment safely and use it so as not to endanger lives and property. The operator is also responsible to:

1. Ensure full compliance with the requirements of this procedure.
2. Become fully trained to perform required hot work and verify that equipment, (including fire suppression equipment) and tools are in good working order.
3. Obtain a HOT WORK PERMIT from Baylor University Department of Public Safety for any work that is to be performed outside of a designated safe hot work area. The permit must be displayed at the work site.
4. Use appropriate safety equipment, including eye and face protection, hand protection, body protection, head protection, hearing protection, and respiratory protection, as needed.
5. Designate a responsible person to serve as a fire watch.
6. Avoid hot work operations where conditions ARE NOT SAFE.
7. Stop work when conditions change from those set when work was approved. If the designated fire watch must leave the work site, operations shall cease and the operator shall remain at the work site for at least 60 minutes following job completion to monitor for fires.

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- 8. Have a representative check the hot work area 4 hours after completion of the hot work procedure as outlined by FM Global in their Hot Works Policy. Baylor Police dispatch shall be contacted at the end of this 4 hour period to verify area is safe. In areas where fire alarm actuation devices are within 35 feet of the hot work area the 4 hour visible check will not be required. Per FM Global policy these devices will act as 4 hour check.

E. Baylor University Department of Public Safety

- 1. Conduct walk through of the proposed hot work site before the issuance of a permit.
- 2. Issue Hot Work Permit.
- 3. Audit all operations to ensure compliance with this procedure.
- 4. Periodically inspect designated hot work areas to ensure that conditions have not become unsafe for hot work.
- 5. Suspend hot work if conditions become unsafe for the work being performed.
- 6. Document verification of 4 hour check as communicated by Hot Work Operator when required.

**HOT WORK REQUIREMENTS**

A. Permissible Areas

Routine hot work operations shall be allowed without the requirement of a permit only in areas that have been designated as a SAFE HOT WORK AREA. For the purpose of this operating procedure the following campus areas are designated as SAFE HOT WORK AREAS:

<b>Building Name</b>	<b>Specified Locations</b>
Facilities Operations & Maintenance	Welding shop and garage
Hooper Schaefer / Lewis Art	Welding shop and foundry Scene shop -- welding area
Sciences Building	Glass Shop, Machine Shop, and Electronics Shop
Rogers Engineering	Mechanical Shop
Facilities Annex Building	Welding Shop and Garage
LL Sams	Grounds Shop

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LL Sams	Special Event Welding Shop
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**B. Permit-Required Areas**

In areas where it is not practical to move the work to a designated SAFE HOT WORK AREA, hot work shall only be permitted once the area is made fire safe by removing combustibles or protecting combustibles from ignition sources.

Unless prior approval has been granted by BUDPS, hot work operations are strictly prohibited under the following conditions:

1. In areas not designated as SAFE HOT WORK AREAS where a proper HOT WORK PERMIT has not been obtained;
2. In sprinklered buildings while such protection is impaired or the fire alarm control panel has been red tagged.
3. In the presence of explosive atmospheres, such as mixtures of flammable gases, vapors, liquids, or dusts with air; on or in any drum, container, or vessel that has not been properly cleaned to remove any possible explosive atmospheres that can develop inside from residual contents; or
4. In areas near the storage of large quantities of flammable or combustible materials that can readily ignite.

**HOT WORK PERMIT TRAINING**

**A. Persons to be trained**

All persons who conduct hot work; managers, project managers and supervisors of those conducting hot work; and those issuing hot work permits shall complete the FM Global approved training course, this course must be taken annually. A certificate of completion or a signed and dated training roster shall be maintained for the person requesting/requiring a permit, before the permit will be issued.

**B. Training registration**

To register for training, contact BFS, 1919 S. 1<sup>st</sup> Street, 254-710-6187 or x1364.

**HOT WORK PROCEDURES**

**A. Preparation of work area**

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Before a hot work permit is approved and issued, the department or individual requesting the permit shall verify that:

1. All hot work equipment to be used is in satisfactory condition and in good repair.
2. Any combustible materials such as paper clippings, wood shavings, or textile fibers on the floor are swept clear for a radius of 35 feet. Floors constructed of combustible materials are properly protected by either wetting the surface or are covered by fire-resistant shields. Where floors have been wetted down, personnel operating arc hot work equipment shall be protected from possible shock.
3. All combustible materials are relocated at least 35 feet horizontally from the work area. Where relocation is not practical, the combustible materials shall be protected with flame-proof covers or otherwise shielded with metal or fire-resistant shields or tarps.
4. Openings or cracks in walls, floors, or ducts within 35 feet of the work area are tightly covered to prevent the passage of sparks to adjacent areas. Where hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire-resistant shields or guards are provided to prevent ignition.
5. If hot work is to be done on a metal wall, partition, ceiling, or roof, precautions are taken to prevent ignition of combustible materials on the other side, such as relocation or covering the materials, due to conduction or radiation. If the combustible materials cannot be relocated or protected, a fire watch shall be provided on the opposite side of the wall where the work is being performed.
6. No hot work is to be attempted on a metal partition, wall, ceiling, or roof having a covering, nor on walls or partitions of combustible sandwich-type panel construction.
7. Hot work is not undertaken on pipes or other metals that are in contact with combustible walls, partitions, ceilings, or roofs if the work is close enough to cause ignition by conduction.
8. Nearby personnel are suitably protected against heat, sparks, slag, etc.
9. If hot work is to be done in close proximity to a sprinkler head, the head is covered by a wet cloth to prevent activation. The cloth must be removed immediately at the conclusion of the hot work.
10. All smoke detectors in the area should be covered or disabled prior to hot work. The dust covers must be removed immediately or enabled immediately at the conclusion of the hot work.
11. Prior to permit application if a sprinkler head and/or a smoke detector are required to be disabled, this work must be performed by an approved vendor selected by Baylor University. Any cost incurred for this work will be the responsibility of the contractor who will contact BFS to schedule this work. When the devices are returned to normal, it shall be verified by BFS and documented on the permit by the fire watch.

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**B. Fire Watch**

The contractor or BFS for facility related hot work, or the event coordinator for event hot work; who request the HOT WORK PERMIT is responsible for designating a fire watch. The fire watch shall:

1. Make fire extinguishing equipment readily available and be trained in its proper use and limitations.
2. Know how to activate the building's fire alarm system, if applicable, or who to notify in the event of a fire.
3. Watch for fires in all exposed areas, and try to extinguish them first, only when obviously within the capacity of the equipment available, or otherwise sound the alarm immediately.
4. Ensure that the work area is given an inspection one hour after completion of the job to detect and extinguish possible hot spots or smoldering fires. In addition, the site will be periodically monitored for an additional three hours after dismissal of the fire watch. The fire watch shall be released after the one hour initial inspection.
5. Correct or stop any conditions which may lead to a fire and report conditions to BFS & BUDPS at the earliest opportunity. Attempt to extinguish fires appropriate to the available equipment and level of training or otherwise activate the fire alarm system.
6. If the fire watch must leave the work site, all hot work must stop and the fire watch shall remain in effect for 60 minutes after the work stoppage.

**C. Baylor University Department of Public Safety Notification and Approval**

Once the work area has been properly prepared, the department or individual requesting the HOT WORK PERMIT shall contact BUDPS for final review and approval. BUDPS shall:

1. Review the permit request and verify that all necessary precautions have been properly taken. If necessary, a visual inspection may be conducted prior to final approval.
2. Determine if the work area has any fire alarm detectors that need to be disabled to prevent false alarms, and have a designated Baylor vendor appropriately disable only those devices that could be accidentally activated.
3. Verify the location, start time, and duration of the hot work operation. A HOT WORK PERMIT shall only be valid for the time duration identified. Generally, no HOT WORK PERMIT should exceed a 24-hour period. If additional time is needed, the requester must notify BUDPS for an extension or issuance of a new permit. In cases requiring multiple work days, a permit may be issued for the duration of one week, and a log documenting each hot work occurrence will be required. This will be maintained by the contractor performing the hot work. Each day, fire watch must be maintained and the 60 minute fire watch period shall apply, as though the permit were complete.

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4. Once approved, the permit shall be posted at the work area for the duration of the job.

**SPECIAL PRECAUTIONS**

A. Work Stoppage

When work is stopped for an extended period of time the equipment must be shut down and secured to prevent accidental sparking. If the work stoppage will exceed the original duration time of the HOT WORK PERMIT, the requester must notify BUDPS to have the permit extended or to request issuance of a new permit.

B. Confined Spaces

Any hot work that is to be performed in a confined space shall be conducted in accordance with the OSHA and university requirements.

C. Hot work on Containers

No hot work is to be performed on any drums, tanks, containers or any vessel that may have contained chemicals or materials that when heated may produce flammable, explosive, or toxic atmospheres, if the container has not been thoroughly cleaned and prepared.

D. Hot Tapping

Hot work that must be performed on any utility piping used for the transmission or distribution of flammable gases or liquids shall only be performed by a crew qualified to make hot taps.

E. Outside Contractors

Contractors shall perform all hot work procedures in accordance with this operating procedure or be able to demonstrate that they have a comparable procedure that meets or exceeds the requirements of this operating procedure.