

UC Merced

Hot Work Permit Procedure

(Short Form)



Purpose:

To provide a short procedure that details the general requirements, purposes and forms to use when performing hot work at the UC Merced (UCM) main campus, UCM ancillary locations and any UCM leased facilities.

Scope:

This procedure applies to all persons performing “Hot Work” including employees and contractors.

Definitions:

Hot work: any work with equipment that produces a spark or an open flame, or a process that generates excessive heat. If there is a risk of fire, the process is by definition “Hot Work.” Also, it should be noted that any work involving electric or gas welding, cutting, brazing or similar flame producing operations is also considered “Hot Work”

Fire Watch: a temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department. Impairment Fire Watch entails the entire affected area of the impairment (e.g. entire building, floor). Hot Work Fire Watch entails the immediate area of the hot work area which is defined by “area exposed to sparks, hot slag, radiant heat, or convective heat as a result of the hot work”.

Hazards of hot work are:

- Fire, property or personal loss;
- Explosion of compressed gases;
- Flammable or combustible vapors, solids, liquids near the area of the hot work;
- Processes involving oxygen and fuel gases or flames on torches;
- Metal splatter and electric shock potential from welding or arc flashes;
- Confined space issues involving any “Hot Work.”

Procedures for Hot Work Permits are intended to:

- Establish areas for cutting and welding, and procedures for cutting and welding, in other areas;
- Designate an individual responsible for authorizing cutting and welding operations in areas not specifically designed for such processes;
- Ensure that supervisors and employees are suitably trained in the safe operation of their equipment and the safe use of the process;
- Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.

Cutting or welding shall not be permitted in:

- Areas not authorized by Designated Campus Fire Marshal (DCFM);
- Sprinklered buildings when fire protection is impaired;
- The presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleansed or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts within 35 feet of the designated work area.

Hot Work Procedures:

Before hot work is initiated, the DCFM or designee shall determine that a source of ignition can be safely used. In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition. A source of ignition shall not be introduced into an area until all of the following required actions have been completed:

- Tests for the presence of flammable gases and vapors shall be made when the concentration of flammable gases or vapors may reasonably be expected to exceed 20 percent of the lower explosive limit (LEL). The tests shall confirm that the concentration of flammable gases and vapors does not exceed 20 percent of the LEL;
- Oil accumulations or other combustible materials shall be removed or protected from ignition when present in exposed areas;
- The gauge valves shall be closed and the gauges drained, or the gauge glasses shall be guarded when gauge glasses contain flammable liquids, vapors or gases and are exposed to the spatter of molten metal;
- A source of ignition shall not be used where the concentration of flammable gases or vapors exceeds 20 percent of the LEL;
- Suitable fire extinguishing equipment shall be readily available in the area where hot work is performed;
- That a “trained” fire watch is available and shall remain at the site for at least 60 minutes after the hot work is completed.

Hot work permit:

A written and numbered hot work permit (attachment 1) shall be issued by the DCFM or designee, before a source of ignition is used. As part of this hot work permit issuance procedure, the employer shall verify that all of the required actions identified have been completed before a hot work permit is issued. The employer’s supervisor designee shall then complete and sign the Hot Work permit.

The hot work permit shall contain the following information:

- The effective time and date;
- The place of use;
- The hours during which the source of ignition may be used, not to exceed 24 hours;
- The specific location or piece of equipment where the source of ignition will be used;
- The nature of the use;
- The nature of the use of the source of ignition;
- Any special precautions or limitations to be observed before, during or after the use of the source of ignition, including the need for a fire watch.

UC Merced DCFM shall revoke the permit under the following conditions:

- When circumstances would make the continued use of the source of ignition hazardous;
- Any time the conditions of its issuance change;
- Inactivity of permitted hot work in excess of two hours unless test(s) determines that the LEL is less than 20%.

Record Keeping:

- In addition to providing a copy with the DCFM, the supervisor or person designated by Department will keep the hot work permit for at least six months.



Permit for welding, cutting, hot work ZURICH

**BEFORE STARTING HOT WORK, REVIEW ALL SAFETY PRECAUTIONS.
CAN THIS JOB BE AVOIDED OR IS THERE A SAFER WAY?**

This permit is required for any temporary operation involving open flame or producing heat and/or sparks: welding, cutting, brazing, grinding, soldering, or using a torch to thaw piping or heat material. The permit applies to only this job, in the area specified, during the time and date noted.

Instructions

Supervisor:

1. Complete precaution and safeguard checklist at night.
2. Complete the form and retain Part 1.
3. Issue Part 2 to competent person doing the job.
4. Verify fire watch.

Permit information

Hot work done by:

- Employee

Contractor

Permit number

Location/building/floor

Work to be done

Person doing job (print and sign name)

Supervisor signature

I have verified that the above location has been inspected and the required precautions and safeguards have been taken. Permission is authorized only for the above work.

Date permit expires

Date work completed

Welder signature

Precaution and safeguard checklist

- Sprinkler protection in service and hose and extinguishers available.
- Hot work equipment in good repair.

Requirements within 35 feet (11 meters) of work

- Flammable liquids and combustible material removed from area.
- Floors swept and overhead structure clean from dust, lint and debris.
- Fire-resistant covers and metal shields provided as needed.
- All floor and wall openings covered and/or protected.
- Walls/ceilings: remove combustibles away from opposite side or adjacent structures.

Work on enclosed equipment

- Adequate ventilation provided.
- Thoroughly clean and remove all flammables and combustibles.
- Atmosphere checked with gas detector.
- Purge any flammable vapors.
- Concealed space/lockout permits, if required.

Fire watch

- Trained and equipped fire watch provided during operations and at least 30 minutes after. (Note: 60 minutes for torch applied roofing.) A final check-up of work area and adjacent areas must be conducted every 30 minutes until 4 hours after completion.

Special instructions

Special instructions area with horizontal lines for text entry.

Final check-up date

Fire watcher signature

Time

Time

Time

Time

Fire watcher signature

Time

WARNING! HOT WORK IN PROGRESS WATCH FOR FIRE!

In case of an emergency

Call

Call area with horizontal lines for text entry.

At

At area with horizontal lines for text entry.

Fire watch

Maintain watch throughout work. Watch must be maintained uninterrupted throughout lunch, breaks and ensuring shifts.

Maintain watch for 30 minutes following the completion of work (60 minutes for torch-applied roofing).