



## 3.18 Hot Work

### Information Sheet

#### Purpose

The purpose of this Information sheet is to guide the University on how to conduct hot work activities safely and provide guidance to meet the requirements of the University's [Hazard Management Chapter](#), the [Code of Practice for Welding Processes](#) and [Australian Standard 1674.1-1997 Safety in welding and allied processes - Fire precautions \(AS 1674\)](#).

#### Q1 What is Hot Work?

Hot work is any activity that includes grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations, for example welding or other sources of ignition near a hazard.

For the purposes of this information sheet outdoor activities such as 4 wheel driving and harvesting are not Hot Work. For these activities please refer to the [Hazard Management](#) chapter and follow the processes outlined for managing the risks.

#### Q2 Do I need to conduct a risk assessment before commencing Hot Work activities?

All hot work activities require that a risk assessment is conducted in accordance with the University's [Hazard Management](#) process. A checklist of requirements needs to be completed to ensure that:

- no hot work is undertaken in a hazardous area;
- all combustible/flammable substances are removed from and around the hot work area or can be adequately protected;
- the area is properly ventilated;
- all tags, warning signs and the permit to undertake hot work are prominently displayed; and
- fire/smoke detection systems have been isolated (if applicable).

#### Q3 What qualifications and training is required to conduct Hot Work?

All staff who conduct hot work need to be identified on the School/Branch/Area [Training Needs Analysis and Training Plan](#) and must be qualified (eg. Welder certification, Engineering qualification) or are proficient (see definitions) before undertaking any hot work activity.

#### Q4 What do I need to do to perform Hot Work activities?

All workers must:

- ensure they are competent and qualified to carry out the work required;
- assist the Responsible Officer (see [Q10](#)) for the activity in:
  - conducting the site inspection and completion of the Hot Work permit to work;
  - ensuring that all necessary controls are in place (as identified by the risk assessment); and
  - enforcing appropriate precautions to limit access by unauthorised persons (including Lock-out and Tag-out systems, see Plant/ Equipment Safety Management);
- check that the required equipment is in place in the work area and in a suitable condition for use (including fire resistant shielding and flash screens if appropriate);
- use personal protective equipment and other equipment as required and consistent with the manufacturers' procedures/recommendations and training; and
- ensure they are trained in the use of fire extinguishers.

All contractors must also:

- have a Hot Work and Permit to Work system in place which meets the requirements of AS 1674; and
- provide a copy of the completed Permit to Work to the University staff member who engaged their services together with all hazard management documentation (e.g. Job Safety Analysis).

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 1 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			

**Q5 What are the requirements for performing Hot Work in welding bays?**

Work undertaken in University areas that are specifically designed for hot work such as engineering workshop welding bays must be monitored to ensure that:

- where hot work constitutes a fire or explosion hazard, the requirements of AS1674 are observed;
- any flammable and combustible liquids are stored in accordance with Australian Standard 1940 - The storage and handling of flammable and combustible liquids; and
- fire extinguishers are provided in accordance with Section 5 of AS1674 (i.e. be appropriate for the particular type of fire hazard, be located within 10 m of the work area., comply with the relevant Australian Standard, be adequately maintained, be used in accordance with the recommendations of the manufacturer or supplier of the equipment).

For more information please see AS 2444-2001 Portable fire extinguishers and fire blankets - Selection and location and AS 1940-2004 The storage and handling of flammable and combustible liquids

**Q6 What is a total Fire Ban Day?**

**A Total Fire Ban Day** may be imposed by the Fire Service at any time of the year restricting the hot work activities, and other activities, you undertake which may result in igniting a fire.

For details about what you can and cannot do during a fire ban please see the [CFS Website](#). Restrictions vary across the state – visit [CFS](#) for more details.

**Q7 Are there any requirements for performing Hot Work in confined spaces?**

Hot work in confined spaces shall be performed in accordance with [WHS Regulations](#) 62-77 the [Code of Practice for Confined Spaces](#), [Australian Standard](#) 2865 “Confined Space” and AS 1674. An additional Permit to enter a Confined Space is also required.

(For further information and guidance on requirements for Confined Space entry, please refer to the [Confined Space Information Sheet](#) or [HSW Team](#).)

**Q8 What is a Fire Watcher and when is one required?**

A fire watcher will observe the hot work area to detect and prevent the spread of any fire produced by the hot work process. The fire watcher should be a qualified person proficient in the operation of fire extinguishing equipment and conversant with the local area emergency procedures.

If hot work is to be conducted within 15 metres of any combustible material, a permit must have fire watch procedures in place, including a nominated fire watcher regardless of protection provided.

**Q9 What are a Fire Watcher’s responsibilities?**

- Do not leave the job unless properly relieved by an authorised person.
- Ensure that an appropriate extinguisher is located within 10m of the work area and is used (if required) in accordance with the recommendations of the manufacturer or supplier of the equipment.
- Use Personal Protective Equipment (e.g. eye protection to protect against flashes where work involves arc welding, cutting or arc gouging).
- Inspect adjoining compartments, if heat transfer is possible.
- Maintain a continuous fire watch over the hot work, paying special attention to any changes in weather conditions (such as increased wind), and whether any actions have been taken that may lead to a hazardous situation in the hot-work area.
- Take immediate action to combat any outbreak of fire that may occur and alert the Responsible Officer if not the Fire Watcher.
- Maintain fire watch for at least 30 minutes after the completion of the hot work.

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 2 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			

**Q10 Who is a Responsible Officer and what are their responsibilities in relation to hot work activities?**

A Responsible Officer is a person who has a satisfactory knowledge of the fire, explosion and toxicity hazards associated with hot work in hazardous areas and who is adequately trained and experienced in the testing procedures and precautions necessary for the elimination of any risk involved. A Responsible Officer must be a University of Adelaide staff member.

Before hot work is undertaken the Responsible Officer is required to:

- conduct a risk assessment of planned hot work activities following the University’s Hazard Management process in consultation with the operators;
- complete the checklist of requirements ([Appendix A](#)) to ensure:
  - no hot work is undertaken in a hazardous area;
  - all combustible/flammable substances are removed from and around the hot work area or can be adequately protected;
  - the area is properly ventilated;
  - all tags, warning signs and the permit to undertake hot work are prominently displayed;
  - fire and emergency systems are in place; and
  - fire/smoke detection systems have been isolated (if applicable)
- issue a permit number;
- identify and attach any further permits that may be required e.g. Confined Space Entry, CFS permit;
- determine if a fire watcher is required;  
(Note - If hot work is to be conducted within 15m of any combustible material, the permit must have fire watch procedures in place, including a nominated fire watcher regardless of protection provided).
- sign the hot work permit when all criteria specified on the permit has been met; and
- ensure that each person associated with hot work is conversant with the precautions to be taken as specified on the hot work permit and with the safety requirements of the site.

During hot work the Responsible Officer is required to:

- supervise the hot work from commencement to completion;
- ensure that only authorised operators enter the hot work site;
- ensure that hot work is not conducted outside the area specified on the hot work permit;
- monitor changes in wind direction and any other potential hazards where applicable;
- immediately stop the work and withdraw the hot work permit, if a hazardous situation is observed or in the event of an emergency situation;
- remain onsite for the duration of the hot work activity; and
- amend the current hot work permit in the event that:
  - the hot work is to extend beyond the currency of the permit; or
  - ceases for a period of more than 2 hours; or
  - the work location changes.
 and sign/initial all changes on the permit.

On completion of hot work the Responsible Officer is required to:

- dispose of any contaminants (including cleaning fluids/materials in preparation for the hot work and after the hot work has been completed) following the University [Chemical Safety Management](#) process;
- inspect the site to ensure that no smouldering materials remain and the site is safe;
- sign the permit to accept that close out requirements have been completed and no further work is authorised;
- ensure that fire protection systems have been re-activated (where applicable); and
- maintain a copy of the closed permit on file together with the risk assessment in accordance with the School/Branch Health and Safety records management system (eg. with the [Health and Safety Officer](#) or delegate).

**Q11 What action should be taken in the event of a fire emergency during hot work?**

In the event of a fire emergency all activities should cease immediately and all equipment turned off. If it is safe to do so, the fire should be extinguished and any combustibles which could escalate the emergency should be removed. Operators should alert the Responsible Officer as soon as possible. The Responsible Officer should ensure that a watch is maintained in the area of the fire until it is considered that re-ignition is not possible. They should also ensure that no further work is carried out until effective fire equipment is available for use (eg. Additional extinguishers obtained).

If the fire cannot be extinguished immediately, the Responsible Officer should ensure that the Fire Service are notified (0) 000, in addition to Security (ext 35444) and notify the [HSW Team](#).

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 3 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			

**Q12 How do I report an incident?**

Ensure circumstances contributing to the fire and the results from any subsequent investigation are recorded in accordance with the University's [Incident Near Miss Reporting and Investigation](#) process.

In the event of a fire, notify the [HSW Team](#) as soon as practicable.

**Further Information**

If you require further information, please contact a member of the [HSW Team](#).

**Definitions**

**Combustible Substances** - materials that can maintain combustion without addition of an external heat source

**Confined Space** - a space that has been defined as a Confined Space in line with Australian Standard 2865

**Contaminated Ground** - any area that has been contaminated by spilled flammable or combustible liquid or solid

**Energy Source** - electricity, systems under pressure such as gases, oil, water, air, steam or other stored energy equipment such as flywheels, gravitational and kinetic systems that pose a threat to peoples safety

**Field Site** - any area external to the precincts of Adelaide University Campuses on which persons are required to undertake work.

**Fire watcher** - a person who observes the hot work area to detect and prevent the spread of any fire produced by the hot work process. The fire watcher should be a qualified person proficient in the operation of fire extinguishing equipment and conversant with the local area emergency procedures.

**Flammable Substances** - liquids, mixtures of liquids or mixtures of liquids and solids (e.g. paints and varnishes) which give off flammable vapours at temperatures less than 65.6°C

**Hazardous Area** - any area in which flammable or combustible liquids, vapours, gases, dusts, fibres and/or explosive substances may be present.

**Hot Work** - any activity that includes grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations, for example welding or other sources of ignition near a hazard.

**Lock-out** - the use of a lock and authority system that prevents an energy source from being inadvertently turned on during equipment maintenance or repair.

**Proficiency** - training provided on a one-on-one basis or as a group where the operator must demonstrate to their assessor that they are proficient to undertake the task. The proficiency is generally mapped against a Safe Operating Procedure, or could be via a log book or series of supervised training sessions.

**Responsible Officer** - a person having a satisfactory knowledge of the fire, explosion and toxicity hazards associated with hot work in hazardous areas and who is adequately trained and experienced in the testing procedures and precautions necessary for the elimination of any risk involved. A Responsible Officer must be a University of Adelaide staff member.

**Tag-out** - a system utilising warning tags indicating an item of plant or equipment that has been isolated for maintenance and may not be turned on or used.

\_\_\_\_\_  
Authorised by  
Associate Director, HR Compliance and Improvement Services

\_\_\_\_\_  
Date

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 4 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			

## HOT WORK - PERMIT TO WORK (Template)

**This template must be used by the School/Branch unless an equivalent template has been developed which meets the requirements of AS1674 “Safety in welding and allied processes”.**

The University Information Sheet for [Hot Work](#) should be read prior to completion of this form.

Responsible Officer to complete:

PERMIT NO. \_\_\_\_\_

Time of the hot work	This permit is valid from _____ am/pm on ___/___/___ to _____ am/pm on ___/___/___	
Location	Campus:	Building (or nearest):
	Room or Area (describe):	

Description of the hot work to be covered by this permit	
--	--

Equipment to be used (including PPE) eg, gloves, welders mask, shielding.	
---	--

Site Inspection to be conducted by the Responsible Officer	Yes	N/A
A Hot Work Risk Assessment has been conducted and attached	<input type="checkbox"/>	<input type="checkbox"/>
Other Work Permits identified completed and attached (e.g. Confined Spaces) if applicable	<input type="checkbox"/>	<input type="checkbox"/>
Fire detection systems have been isolated within the area for the duration of the hot work (contact Campus Security).	<input type="checkbox"/>	<input type="checkbox"/>
Services (electricity, gas, water, hydraulic) isolated if applicable	<input type="checkbox"/>	<input type="checkbox"/>
Warning signs and barricades are in place to prevent unauthorised entry	<input type="checkbox"/>	<input type="checkbox"/>
All persons involved with hot work have been trained and are competent	<input type="checkbox"/>	<input type="checkbox"/>
The Personal Protective Equipment identified on the Risk Assessment and Safe Operating Procedure are available for use	<input type="checkbox"/>	<input type="checkbox"/>
Spark/flash/protective screens are in place	<input type="checkbox"/>	<input type="checkbox"/>
Equipment is in good condition and conforms to required standards	<input type="checkbox"/>	<input type="checkbox"/>
Wind direction is satisfactory for hot work to be done (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
Combustible materials have been removed from the area or made safe	<input type="checkbox"/>	<input type="checkbox"/>
• Any fire hazard (including the presence of flammable or combustible liquids, gases, vapours, dusts, fibres or substances) within 15 m from the hot work has been identified and controlled	<input type="checkbox"/>	<input type="checkbox"/>
• Relevant hazards that may exist outside the area have been considered and protected appropriately	<input type="checkbox"/>	<input type="checkbox"/>
• Potential for a grass fire has been considered and immediate area cleared/soaked sufficiently to prevent a fire (if applic).	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Systems are in place	<input type="checkbox"/>	<input type="checkbox"/>
• Fire equipment has been checked and is on stand-by at the work site	<input type="checkbox"/>	<input type="checkbox"/>
• If the work is within 15m of any combustible materials, fire watch procedures have been implemented, including a firewatcher to remain onsite until 30 minutes after the hot work has been completed	<input type="checkbox"/>	<input type="checkbox"/>
• All emergency numbers are clearly posted at the hot work area	<input type="checkbox"/>	<input type="checkbox"/>
• Adequate first aid kit/s and/or facilities are readily available at the hot work area	<input type="checkbox"/>	<input type="checkbox"/>
A safe entry to and exit from the hot-work area is available	<input type="checkbox"/>	<input type="checkbox"/>
Ventilation is adequate	<input type="checkbox"/>	<input type="checkbox"/>
Testing for the presence of flammable gas or vapour has been conducted within 15m of the hot work and in any pipe, drum, tank, vessel and piece of equipment adjacent to or involved in the hot work (results entered below)	<input type="checkbox"/>	<input type="checkbox"/>
The concentration of any flammable gas and flammable vapour is less than 5 percent of its lower explosion limit (LEL)	<input type="checkbox"/>	<input type="checkbox"/>
Drains, pits and depressions have been checked, isolated and sealed	<input type="checkbox"/>	<input type="checkbox"/>
Have tanks, valves, vents and pipelines been blanked off or effectively isolated?	<input type="checkbox"/>	<input type="checkbox"/>
Leaks from valve and pump glands, flanges and the like have been controlled	<input type="checkbox"/>	<input type="checkbox"/>
Contaminated ground has been covered	<input type="checkbox"/>	<input type="checkbox"/>
Pressure relief valves have been vented to safe areas	<input type="checkbox"/>	<input type="checkbox"/>
If hot work will be undertaken within a building the chief warden/local area warden and local building occupants have been informed of the intended work (including notification that the Fire Systems have been isolated if applicable). (Refer to the Evacuation Posters for the names of Wardens or <a href="https://www.adelaide.edu.au/infrastructure/staff-services/emergency/">https://www.adelaide.edu.au/infrastructure/staff-services/emergency/</a> )	<input type="checkbox"/>	<input type="checkbox"/>

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 5 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			

**Gas testing shall be conducted if required after conducting the Hot Work Risk Assessment (use separate sheet if necessary)**

Equipment make and model	Serial No.	Date and time of test	Results of tests	Percentage L.E.L.	Is hot-work safe to proceed?	Initials of tester

The following conditions and precautions were observed:

.....

.....

.....

**The following Operators have been authorised and agree to abide by the conditions and precautions of this Permit**

Persons undertaking the hot work	Supervisor (Responsible Officer)	
	Name of Operator(s):	
	Name of Fire Watcher (if required):	
	Signature of Fire Watcher:	

**PERMIT AUTHORISATION**

I have read the University process for hot work and understand my role and responsibilities for this activity and the conditions of this permit. The Hot Work described on this permit is, in my opinion, safe to commence using all precautions described and that all persons nominated are adequately trained to undertake the work described in this permit. This permit is valid for the period nominated.

Supervisor (Responsible Officer).....  
 (print name) (signature) (Date/ Time)

**THIS HOT WORK PERMIT MUST BE DISPLAYED PROMINENTLY AT THE WORKSITE  
 UPON COMPLETION, CANCELLATION OR WITHDRAWAL OF THIS PERMIT  
 IT MUST BE RETURNED TO THE ORIGINAL POINT OF ISSUE**

**A new permit is required in the event of an emergency or where:**

- the hot work is to extend beyond the currency of the Permit, or
- the hot work ceases for a period of more than 2 hours, or
- the work location changes.

**PERMIT COMPLETION**

The worksite has been inspected by me at the expiry/cancellation of this hot-work permit and declared safe for normal operations to resume. Contaminants have been disposed of appropriately and fire watch checks have been completed.

Supervisor (Responsible Officer).....  
 (print name) (signature) (date/ time)

**PERMIT CANCELLATION/ WITHDRAWAL**

This Hot Work Permit is hereby cancelled/withdrawn for the reason/s stated below:

.....

.....

Supervisor (Responsible Officer).....  
 (print name) (signature) (date/ time)

**The original copy of this document is to be filed and maintained by the Supervisor (Responsible Officer) (or delegate e.g. Health and Safety Officer) and a copy attached to the Risk Assessment (e.g. in RMSS or hard copy)**

HSW Handbook	Hot Work	Effective Date:	4 September 2015	Version 1.0
Authorised by	Associate Director, HR Compliance and Improvement Services	Review Date:	4 September 2018	Page 6 of 6
Warning	This process is uncontrolled when printed. The current version of this document is available on the HSW Website.			