

## 1. RISK ASSESSMENT

---

### 1.1 Existent Confined Space Identification and Risk Assessment

---

#### 1.1.1 Requirements

The CSE Authorising Officer in conjunction with employees entering the space and standbys must refer to the Confined Space Identification and Risk Assessment for that space.

The CSE Authorising Officer must ensure that the controls listed on the Confined Space Identification and Risk Assessment form are included on the permit.

Confined Space Identification and Risk Assessment:

[http://www.pb.unimelb.edu.au/ehs/riskmanagement/Confined\\_Space\\_Identification\\_and\\_Risk\\_Assessment.pdf](http://www.pb.unimelb.edu.au/ehs/riskmanagement/Confined_Space_Identification_and_Risk_Assessment.pdf)

#### 1.1.2 Rationale

The Confined Space Identification and Risk Assessment lists the hazards and controls required for entering the space. It also takes into account additional controls that may be required where activities in or near the space may introduce further hazards.

There is also an opportunity here for the CSE Authorising Officer to review and revise (if applicable) the Confined Space Identification and Risk Assessment for the space.

### 1.2 Non-Existent Confined Space Identification and Risk Assessment

---

#### 1.2.1 Requirements

If a Confined Space Identification and Risk Assessment has not been documented, then the CSE Authorising Officer with employees entering the space and standbys must complete an assessment.

The CSE Authorising Officer should ensure that the assessment is forwarded to the GM Asset Services/Head of the Department responsible for the space.

#### 1.2.2 Rationale

It is recognised that the University of Melbourne is a large and complex environment. The property status of the University of Melbourne is constantly changing. For example, the purchase of new or old buildings and the refurbishment of existing buildings.

It is therefore expected that from time to time a confined space may not have been identified and assessed.

### 1.3 Risk Assessment of the Activity

---

#### 1.3.1 Requirements

The CSE Authorising Officer in conjunction with employees entering the space and standbys must complete a risk assessment and control for the activity, such as a JSA or SOP.

## 1.3.2 Rationale

The activity may change the nature of the space. For example under normal conditions the atmosphere within a space may have been assessed as oxygen depleted. Two pack painting activities within the space could produce an explosive atmosphere.

## 1.4 Non-Confined Spaces

---

### 1.4.1 Requirements

When the Confined Space Identification and Risk Assessment determines that the space is not confined the CSE Authorising Officer in conjunction with employees entering the space and standbys must complete a risk assessment and control for the activity, such as a JSA or SOP.

### 1.4.2 Rationale

The space may contain significant risks that require high level or special controls, such as:

- restricted access;
- signage;
- not working alone; or
- continuous communication.

The activity may also change the nature of the space. For example welding into a space will produce an atmospheric contaminant.

## 2. DOCUMENTATION FORMS AND PROCESS

---

### 2.1 Forms

---

#### 2.1.1 Requirements

All confined space entry is by permit only.

Prior to entry the CSE Authorising Officer must document on the permit:

- the date of entry;
- the permit expiry time; and
- the control measures that were identified during the:
  - Confined Space Identification and Risk Assessment process; and
  - Activity risk assessment (JSA, SOP etc).

#### **NOTE:**

The CSE Authorising Officer cannot be the person entering the confined space.

Identification of the space and the control measures are included in the Sections 1 to 15 of the Confined Space Entry Permit. All sections must be completed and are listed as follows:

1. Identification (identifies the space)
2. Description of the work
3. Hot work (Hot Work will require a Hot Work Permit)

4. Isolation (of services)
5. Purging and ventilation
6. Atmospheric testing
7. Communication
8. PPE and other equipment
9. Personnel (Entry personnel and standbys)
10. Emergency plans
11. Safe to Enter (Signature of CSE Authorising Officer)
12. University of Melbourne entry time
13. Entry and Exit Log
14. University of Melbourne exit time
15. Sign off (Signature of CSE Authorising Officer)

Sections 1 to 12 must be completed prior to entry.

Sections 13 to 14 must be completed at the commencement, during and at the completion of entry.

Section 15 must be completed when all personnel, tools and equipment have exited the space and the area has been made safe.

Confined Space Entry Permit:

[http://www.pb.unimelb.edu.au/ehs/ehs/ehsm\\_guidance/#confinedspace](http://www.pb.unimelb.edu.au/ehs/ehs/ehsm_guidance/#confinedspace)

## 2.1.2 Rationale

Due to the hazardous nature of confined spaces a permit system ensures that strict controls are adopted to ensure the safety of both personnel working in the space and personnel in the area who may be affected by the work.

A permit system allows for strict control over the spaces that are entered and the activities that are undertaken within those spaces. It also ensures that personnel entering the space are aware of the hazards and controls associated with the entry and the activities.

A permit is only valid for a set time period so it is important to include the date and the time that it will expire.

## 2.2 Process

---

### 2.2.1 Requirements

1. The CSE Authorising Officer, after authorising the permit (Section 11), must retain a copy of the permit for the duration of the entry. The permit is now considered "open".
2. The personnel conducting the work must notify the "contact" on the permit (Section 12) at the initial entry time.
3. The standby must keep a log of entry and exit into the space by entry personnel for the duration of the open permit (Section 13).
4. The personnel conducting the work will notify the "contact" on the permit (Section 14) at the completion time.

5. The personnel conducting the work must ensure that all equipment and tools have been removed from the space, that all entry personnel are accounted for and that the area has been made safe (eg restricting access, removing rubbish etc).
6. The personnel conducting the work must return the permit to the CSE Authorising Officer at the completion of work.
7. The CSE Authorising Officer must ensure that the all entry personnel are accounted for and that the area has been made safe (eg restricting access, removing rubbish etc) and sign off the permit. The permit is now considered “closed”.

Where the CSE Authorising Officer opening the permit is unable to sign off the permit another prearranged CSE Authorising Officer can close the permit.

## **2.2.2 Rationale**

The CSE Authorising Officer has oversight of the safety of personnel entering the space. In addition to being satisfied with the controls on the permit, the CSE Authorising Officer must ensure that personnel (other than the entry and standby personnel) are aware that confined space entry is taking place and must be satisfied that the controls on the permit are satisfactory.

This provides two levels of safety. That is:

- firstly, a nominated person (see point 3.12 Section 12-University of Melbourne Entry Time) is contacted at the commencement of confined space entry and the completion of confined space entry; and
- secondly, the CSE Authorising Officer opens and closes the permit.

## **2.2.3 Note on Permit Expiry**

The CSE Authorising Officer must discuss with the entry personnel the time that entry into and exit out of the space is likely to occur. The expiry time will be based on this.

# **3. SECTIONS 1 TO 15 ON PERMIT**

---

## **3.1 Section 1 – Identification**

---

### **3.1.1 Requirements**

Fill out all relevant information that clearly identifies the space, including:

- Location of space
- Address
- Confined space number
- Manhole number (if applicable)
- Pumping Station (if applicable)

### **3.1.2 Rationale**

A confined space entry permit is valid only for the space that is indicated on the permit.

The controls identified for the safe entry into a confined space are specific to that space and may not be adequate for another confined space.

## 3.2 Section 2 – Description of Work

---

### 3.2.1 Requirements

Provide a brief description of the work/activities to be carried out in the space.

### 3.2.2 Rationale

This assists with the hazard and identification process and provides information to the CSE Authorising Officer. It also ensures that the confined space entry permit is valid for the actual work.

If the work is significantly altered or likely to be altered then a new permit may be required.

## 3.3 Section 3 – Hot Work

---

### 3.3.1 Requirements

Indicate on the permit if hot work **is** or **is not** required.

If hot work is required then a Hot Work Permit must also be completed and attached to the Confined Space Entry Permit. List the hot work permit number on the Confined Space Entry Permit.

Hot Work Procedure:

<http://www.unimelb.edu.au/ehsm-new/11.html#11.30>.

Hot Work Permit:

[http://www.pb.unimelb.edu.au/ehs/ehs/ehsm\\_guidance/#hotwork](http://www.pb.unimelb.edu.au/ehs/ehs/ehsm_guidance/#hotwork)

### 3.3.2 Rationale

All hot work must be carried out in accordance with University's procedure for hot work which includes the requirement for a Hot Work Permit.

Hot work presents unique hazards that may result in fire /explosion resulting in loss of life and/or property damage. It is therefore important that hot work is strictly controlled in a manner similar to entry into confined spaces.

Because the two activities (confined space entry and hot work) are linked it is important that the permits are kept together.

## 3.4 Section 4 –Isolation

---

### 3.4.1 Requirements

All services and parts/equipment in or near a confined space that could be a hazard during entry must be locked out, tagged out and isolated in accordance with the University's and isolation and lockout/tag out procedure.

Lockout/Tag Out Procedure:

<http://www.unimelb.edu.au/ehsm-new/11.html#11.27>.

These services and parts/equipment should be identified on the permit.

Where Asset Services is required to isolate services this should also be documented on the permit.

### 3.4.2 Rationale

Services leading into the space may be hazardous to entry personnel. For example if the space is intended to be filled with water and the pipe work is not isolated the personnel in the space could drown.

Parts/equipment within a space may also be hazardous to entry personnel. For example there may be moving parts within the space that could result in entrapment.

## 3.5 Section 5 – Purging and Ventilation

---

### 3.5.1 Requirements for Purging

Record on the permit if purging is or is not required.

If it is required record the gas used.

### 3.5.2 Rationale for Purging

Inert gases are commonly used to purge confined spaces particularly where there is an explosive atmosphere. These gases are known to displace or dilute other gases including oxygen. It is therefore important, that following purging, the confined space must be ventilated and monitored again to determine that all contaminants have been removed and that there is a safe level of oxygen.

### 3.5.3 Requirements for Ventilation

Prior to any work taking place:

- The space must be naturally ventilated for a minimum period of ten minutes.
- The atmosphere must then be monitored to determine if natural ventilation resulted in satisfactory atmospheric levels.
- If the natural ventilation does not result in satisfactory atmospheric levels then mechanical ventilation must be used.

Record the ventilation requirements on the permit. If mechanical ventilation is required record the type eg. extraction (negative pressure), dilution (positive pressure).

Assess the nature of the space and the activity to determine if continuous ventilation will be required for the duration of entry. Record this on the permit.

### 3.5.4 Rationale for Ventilation

Given that the space is likely to contain an atmospheric contaminant it is essential that this is assessed prior to entry. For many spaces where there is air movement around the space, natural/fresh air ventilation is often adequate to produce appropriate atmospheric levels (see Section 3.6).

Mechanical ventilation can be used if fresh air ventilation is ineffective. It is important to determine the type of mechanical ventilation that required. For example if the space is inside a building and contains fumes then extraction ventilation would be more appropriate than dilution ventilation which would blow out the fumes into the surrounding area.

Some activities will also produce contaminants. For example, welding in the space will produce fumes and mechanical extraction ventilation would be required to remove the contaminants.

## 3.6 Section 6 – Atmospheric Testing

---

### 3.6.1 Requirements

Monitoring must be done prior to entry into the space and the results entered on the permit.

Atmospheric levels within the confined space must not exceed the limits set in the following table. In the case of oxygen there are upper and lower limits.

REQUIRED ATMOSPHERIC LEVELS				
LEL %	CO ppm	O <sub>2</sub> %	H <sub>2</sub> S ppm	CO <sub>2</sub> %
5 %	30 ppm	19.5 to 23.5 %	10 ppm	5,000 ppm

Do not enter if these levels are exceeded.

If monitoring must be undertaken on more than one occasion, for example when determining the ventilation requirements discussed in Section 5, the times and results can be recorded on the back of the permit. Record the final results in Section 6.

Assess the nature of the space and the activity to determine if continuous monitoring will be required for the duration of entry. Record this on the permit.

### 3.6.2 Rationale

The exposure limits set in the above table are based on the requirements of the *Safe Working in a Confined Space Standard AS/NZS 2865:2001*.

During the risk assessment process it may be determined that there are other contaminants not included in the above group. The "other" column provides space for recording this information.

Information from various sources can be obtained to determine the occupational exposure standards including:

- The Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC 1003 (1995),
- Safe Working in a Confined Space [AS/NZS 2865:2001]'
- Guidelines for Safe Working in a Confined Space [HB 213:2003]' and
- the relevant MSDS.

Some activities will also produce contaminants. For example, welding in the space will produce fumes and continuous monitoring would be required to ensure that the ventilation controls are effective.

## 3.7 Section 7 – Communication

---

### 3.7.1 Requirements

A system of continuous communication must be established between the entry person and the standby as listed on the permit.

List the method of communication on the permit.

Examples of communication include:

- voice
- radio

- hand signals
- lifeline
- telephone

### **3.7.2 Rationale**

The entry person and the standby need to establish the best method of continuous communication prior to entry. In the event that the entry person gets into difficulties or there is an emergency outside the space communication needs to be affective and immediate.

## **3.8 Section 8 – PPE and Other Equipment**

---

### **3.8.1 Requirements**

PPE and other equipment requirements identified on the Confined Space Identification and Risk Assessment form must be ticked off on the permit.

Further PPE and other equipment requirements due to additional risks from the activity must also be ticked off on the permit.

As a minimum the following safety equipment should be included:

- gas detector, lifelines, harness
- warning signs, barricades, traffic management signs, fire extinguisher

Emergency equipment can also be ticked off in this section.

### **3.8.2 Rationale**

This section not only provides a list of all the PPE and other equipment required to carry out the entry safely but it also functions as a checklist.

## **3.9 Section 9 – Personnel**

---

### **3.9.1 Requirements for Entry Personnel**

Entry personnel must be listed on the permit and have received accredited confined space training.

Signage needs to be erected indicating that the entry person is in the space.

Except in the case of rescue, personnel whose names are not on the permit are not authorised to enter the space.

### **3.9.2 Rationale for Entry Personnel**

Entry personnel must understand both the hazards and controls associated with entering confined spaces. Accredited confined space training assists in this process.

Under extraordinary circumstances the standby person may have left/abandoned their position. Signage indicating that there is an entry person in the confined space could assist rescuers or other essential services.

### **3.9.3 Requirements for Standby Personnel**

Standby personnel must be listed on the permit and have received accredited confined space training.

The standby person must be positioned adjacent to the opening of the confined space and be in constant

communication as documented on the permit.

The standby person is also responsible for:

- maintaining the entry and exit log;
- control of the lifeline (if applicable); and
- activation of emergency procedures.

Under no circumstances can the standby person enter the confined space.

The standby person should not leave their position except under the following situations:

- All persons are out of the space and area safe.
- Another designated standby (named on the permit) relieves the standby.
- To raise the alarm or get help. Return immediately.
- The standby's life is in immediate danger if they stay.

### **3.9.4 Rationale for Standby Personnel**

Standby personnel must understand both the hazards and controls associated with entering confined spaces. Accredited confined space training assists in this process.

The main responsibility of the standby person is to ensure the continuous safety of the entry person. This includes:

- ensuring that the controls are adequate;
- recognising if the entry person gets into difficulty;
- alerting the entry person to vacate the space in the case of emergency;
- ensuring that they have vacated the space at the completion of the confined space entry; and
- initiating emergency procedures, such as contacting the emergency contact listed on the permit (Section 10).

## **3.10 Section 10 – Emergency Plans**

---

### **3.10.1 Requirements**

Emergency contact numbers must be listed on the permit. There may be more than one number, particularly if the entry is likely to extend into after hours.

Emergency contact numbers must take into account that they will be answered at all times and that the person answering can initiate appropriate emergency measures. For example at the Parkville campus the security telephone number (8344 6666) should be considered.

The emergency equipment required for the confined space entry should be listed on the permit. The safety equipment should be based on emergency outcomes that may result if the control(s) fails. The risk assessment process and controls listed on the permit will help with this process.

### **3.10.2 Rationale**

Emergency situations in confined spaces can:

- occur suddenly and with little or no warning; and
- rapidly deteriorate resulting in significant injury or death.

It is therefore essential that if an emergency occurs that the emergency plan is affected efficiently, quickly and without delay.

## **3.11 Section 11 – Safe to Enter – Authoring Officer**

---

### **3.11.1 Requirements**

The CSE Authorising Officer must sign the permit to indicate that all controls on the permit are adequate and have been initiated.

Where the CSE Authorising Officer is not satisfied that all confined space entry requirements have been met they should not sign the permit and should outline the additional controls required.

Confined space entry can not commence without the permit being signed by the CSE Authorising Officer.

### **3.11.2 Rationale**

The CSE Authorising Officer has control over the confined space entry process, including opening and closing the permit, and are therefore responsible for ensuring that the controls listed on the permit are appropriate and initiated.

The CSE Authorising Officer also determines and keeps a record of the expiry time. This is important because if the permit is not returned before the expiry time the CSE Authorising Officer must establish the cause and be prepared to initiate emergency procedures.

## **3.12 Section 12 – University of Melbourne Entry Time**

---

### **3.12.1 Requirements**

A university contact person, other than the CSE Authorising Officer, is listed in this section of the permit.

List the time that this person is contacted and the telephone number on the permit. The time will be based on the actual commencement of entry into the space.

### **3.12.2 Rationale**

The usual contact will be the same as the emergency contact (eg Security) or the person who requested the work.

The contact time is based on the actual entry into the space because there can be a delay between the opening the permit and the commencement.

The contact person ensures an additional process for tracking an open permit.

## **3.13 Section 13 – Entry and Exit Log**

---

### **3.13.1 Requirements**

The standby records the:

- name(s) of the entry personnel who enter the space;
- time(s) they entered the space; and

- time(s) they exited the space.

### **3.13.2 Rationale**

This documents who entered the space and provides a record that they exited the space. This is particularly important where there are multiple entry personnel and not all of them enter the space.

## **3.14 Section 14 – University of Melbourne Exit Time**

---

### **3.14.1 Requirements**

The contact in Section 14 is the same as Section 12.

List the contact time and the telephone number on the permit. The time will be based on the completion of entry into the space.

### **3.14.2 Rationale**

The contact time is based on the actual exit from the space because there can be a delay between the completion and closing the permit.

## **3.15 Section 15 – Sign Off – CSE Authorising Officer**

---

### **3.15.1 Requirements**

On completion of work all personnel shall exit the space and the area shall be made safe (including restricting access, removing signs, barricades and so on).

The CSE Authorising Officer shall sign off the permit indicating that this has occurred.

The CSE Authorising Officer shall retain permit for thirty days.

### **3.15.2 Rationale**

The CSE Authorising Officer has control over the confined space entry and exit process, including opening and closing the permit, and are therefore responsible for ensuring that on completion of work all personnel are accounted for and that the area has been made safe and returned to its original state. That is access to the confined space should be restricted, for example locked.

Where it is not reasonably practicable to return the space to pre-entry conditions then other controls must be in place to limit unauthorised access, for example temporary barriers and signs.

The Occupational Health and Safety Regulations 2007 Part 3.4 Confined Spaces require that permits are held for 30 days.

For use in conjunction with *Environment, Health & Safety Manual 11.16 .New. Confined Spaces*. For further information, refer to <http://www.unimelb.edu.au/ehsm-new/11.html#11.16>. or contact your EHS Adviser/Manager in the EHS Unit.