



Confined Spaces / Restricted Spaces

1. Purpose
2. Scope
3. Definitions
4. Responsibilities
5. Procedure
 - 1) Identification
 - 2) Register
 - 3) Signage of Confined Spaces/Restricted Spaces
 - 4) Risk Assessment
 - 5) Written authority (Permit to Work) for Entry
 - 6) Hot Work
 - 7) Alternating Entry and Standby Persons
 - 8) Atmospheric Monitoring
 - 9) Respiratory Protective Devices
 - 10) Rescue and First Aid Procedures
 - 11) Training
6. Record Keeping
7. Performance Measures
8. Documents/Forms
9. References

1. Purpose

This procedure outlines the requirements for the management of entry into confined spaces and restricted spaces in University workplaces with the intention of minimising or eliminating risks to people who enter and carry out work in such spaces. These spaces include those that meet the technical definition of 'confined spaces', as well as those 'restricted spaces' that do not but where there could still be risks to those required to work within them (see definitions below).

This procedure applies to all identified confined spaces and other restricted spaces and to all personnel who have proven to be competent to and have authority to enter and conduct activities in any such spaces. This procedure should be read in conjunction with Chapter 4, Part 3--Confined spaces, of the WHS Regulations (Regulations 62 to 77) and the Approved Code of Practice, *Confined Spaces*.

2. Scope

This procedure specifically applies to work that is carried out in confined and/or restricted spaces within any University of South Australia campus and requires that only those who are competent to do so have access to and authority to work in such spaces.

Note: Only persons proven to be competent are permitted to carry out work in confined spaces or restricted spaces. (Refer to definition of Competent Person).

3. Definitions

Airborne contaminant – A contaminant in the form of a fume, mist, gas, vapour or dust, and includes microorganisms.

Atmospheric monitoring – is the continuous measurement of oxygen levels or selected atmospheric contaminants over an uninterrupted period of time.

Atmospheric testing – is the short term measurement of the oxygen concentration and atmospheric contaminants which is not continuous.

Competent person – is a person who has acquired through training, qualification or experience, the knowledge and skills to carry out a specified task in relation to confined spaces or other restricted spaces.

Confined space – As defined in regulation 5 of the WHS Regulations, a *confined space* means an enclosed or partially enclosed space that:

- is not intended or designed primarily to be occupied by a person; and
- is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space; and
- is or is likely to be a risk to health and safety from -
 - an atmosphere that does not have a safe oxygen level; or
 - contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion; or
 - harmful concentrations of any airborne contaminants; or
 - engulfment,but does not include a mine shaft or the workings of a mine.

Spaces that may meet the technical definition for a confined space include but are not limited to:

- storage tanks, process vessels, boilers, pressure vessels and other tank like compartments
- pipes, sewers, shafts, tunnels, degreaser and sullage pits, ducts and similar structures.

Contaminant – any substance, eg dust, fume, mist, vapour, biological matter, gas or other substance in liquid or solid form, that may be harmful to health and safety.

Contract supervisor – the person nominated to administer a contract that involves work in a confined space or restricted space.

Entry (into a confined space) – where a person's head or upper body is in the confined space or within the boundary of the confined space.

Explosive Limits –

- **Lower explosive limit (LEL)**
The concentration of a flammable contaminant in air below which the propagation of a flame does not occur on contact with an ignition source.
- **Upper Explosive Limit (UEL)**
The concentration of a flammable contaminant in air above which the propagation of a flame does not occur on contact with an ignition source.

Hazardous atmosphere – Any atmosphere where:

- a flammable gas, vapour or mist greater than 5% of its lower explosive limit (LEL) is present;
- an airborne combustible dust is present at a concentration greater than meets or exceeds its LEL;
- there is an oxygen concentration less than 19.5% or greater than 23.5% by volume under normal atmospheric conditions;
- any airborne contaminant is present that may expose a worker to above an acceptable dose or permissible workplace exposure standard (WES)
- there is any condition recognised as an immediate threat to life or health.

Hot work – welding, thermal or oxygen cutting, heating, including fire-producing or spark-producing operations that may increase the risk of fire or explosion.

Job Safety Analysis (JSA) - This is a detailed statement of how work will be carried out in such a way as to either eliminate or minimise risks associated with working in confined spaces or restricted spaces.

Restricted space – A space which does not have confined space risks associated with it but where there are physical restrictions to perform work activities.

Spaces which may not meet the technical definition of confined space but where access is restricted include but are not limited to:

- Plant rooms



- Dumb waiters
- Cleaners rooms
- Switch rooms
- Transformer rooms
- Electrical and communications risers.

Note: Only persons authorised to enter such restricted spaces are permitted to enter and/or carry out work within them. (Refer to definition of Competent Person).

Safe Oxygen Range – A concentration of oxygen in the atmosphere having a minimum concentration of 19.5% by volume and a maximum of 23.5% by volume, under normal atmospheric conditions.

Stand-by person – a competent person assigned to remain on the outside of, and in close proximity to, the confined space/restricted space and capable of being in continuous communication with and, if practical, to observe those inside. In addition, where necessary, the competent person may initiate emergency response and operate and monitor equipment used to ensure safety during entry and work in the confined space/restricted space.

Written Authority (otherwise known as a **confined space entry permit**) – a document that gives permission for entry into a confined space and the conduct of tasks associated with the confined space.

4. Responsibilities

The **Facilities Management Unit (FMU)** has the responsibility to:

- implement this procedure in their area of responsibility and accountability
- ensure that competent FMU staff or FMU engaged contractors are inducted to the local area where they are required to work in confined/restricted spaces
- validate contractors' competency to work in confined/restricted spaces
- ensure that relevant FMU staff and FMU authorised and engaged contractors carry out work in confined spaces or restricted spaces in accordance with these procedures
- identify confined spaces and restricted spaces within all University workplaces
- ensure that all confined spaces and restricted spaces are adequately signposted
- ensure that the University Confined Space/Restricted Space Register is up to date at all times
- ensure that adequate resources are available to comply with the requirements of this procedure
- keep and maintain records of all risk assessments, written entry permits, JSAs and hot work permits to enter confined spaces and restricted spaces under its control
- ensure that confined spaces and restricted spaces under its control are locked at all times except where authorised work is being carried out within them
- provide keys to enter confined spaces or restricted spaces to relevant FMU staff or contractors authorised to carry out work within them
- maintain all relevant documentation relating to confined spaces and restricted spaces under its control.

FMU Contract Supervisors have the responsibility to:

- ensure that required entry permits and other documents are completed and signed that provide authority/permission for contractors to work in confined spaces or restricted spaces as defined by the University of South Australia
- provide confined space/restricted space entrance keys following authorisation to carry out required work
- ensure that form **WHS27 - Contractor's Permit to Work** is completed prior to work commencing
- sign off on work undertaken and checking that all University property including access keys have been returned following the completion of authorised work.

Authorised Contractors have the responsibility to:

- provide to the University evidence that their staff including sub-contractors have completed the Nationally Accredited Training and competency assessment for working in confined spaces, or other relevant training for restricted spaces, prior to the work commencing
- ensure that a risk assessment is conducted or a JSEA incorporating a risk assessment is completed and where required an entry permit and a hot work permit is completed prior to entry to a confined space/restricted space and that copies of these documents are forwarded to the relevant Campus Facilities Manager prior to the confined space/restricted space work being carried out
- ensure that a written authority to carry out work is obtained from FMU prior to carrying out the work
- ensure following the completion of work that any entrance to the confined space is locked and that the key is returned to the relevant Campus Facilities Manager following the completion of required work
- communicate safety requirements to their staff or subcontractors and ensuring they are understood and complied with.

General Managers and Directors have the responsibility to:

- implement this procedure in their area of responsibility and accountability where applicable
- ensure any work in a confined space/ restricted space is planned and documented including the completion of risk assessments
- ensure that confined spaces/restricted spaces are locked at all times except where authorised work is being carried out within them
- ensure any staff or contractor who is to carry out work in a confined space/ restricted space possesses current accredited competency from a Nationally Approved Training Provider
- ensure that competent staff or contractors are inducted to the local area where they are required to operate
- ensure that adequate resources are available to comply with the requirements of this procedure
- ensure that contractors who are required to enter confined spaces/restricted spaces are authorised by FMU to carry out such work
- ensure that a risk assessment or a JSA incorporating a risk assessment and a permit to enter the confined space/restricted space ([WHS36 – Confined Space Written Authority \(Entry Permit\)](#)) is completed and available prior to work being carried out
- ensure that [WHS27 - Contractor's Permit to Work](#) is completed prior to work commencing
- keep and maintain records of all risk assessments, entry permits, JSAs and hot work permits to enter confined spaces and restricted spaces under local control
- provide keys to enter confined spaces or restricted spaces to competent staff or contractors authorised to carry out work within them
- maintain all relevant documentation relating to confined spaces and restricted spaces under local control.

Staff undertaking work in a confined/restricted space have the responsibility to:

- not place themselves or others at risk of injury/illness
- conform to the requirements of this procedure
- consult with the General Manager and WHS consultant in relation to risks associated with entry to confined spaces/restricted spaces.

5. Procedure

Only competent persons shall undertake confined space or restricted space entry and/or related standby duties.

The responsibility for ensuring the completion of JSAs, risk assessments, safe work practices and the required written authority to work rests with the competent person who is to enter the confined space/restricted space. With respect to contractors it is the responsibility of the person engaging the contractor to ensure that proof of competency to work in confined spaces/restricted spaces is provided prior to the commencement of any work.

Contractors who are engaged by the University must have had their competency to work in confined spaces/restricted spaces verified during the relevant contract negotiation and contract start-up process.

The following must occur:

1) Identification (Confined Spaces/Restricted Spaces)

All confined spaces/restricted spaces at University workplaces must be identified by the Facilities Management Unit.

2) Register (Confined Spaces/Restricted Spaces)

A register must be maintained by the Facilities Management Unit. The information contained in the register will include:

- description of the spaces
- location of the spaces
- hazards associated with individual spaces, and
- details of risk assessments associated with individual spaces.

The register will be updated as required with any addition, alteration, removal or change of environment or change to legislative requirements.

For a confined space to be reclassified as a non-confined space, it must have undergone sufficient changes in structure or usage to eliminate (without the need for risk control measures) all possible sources of inherent hazards that define a confined space. Any changes to a confined space would have to be such that a subsequent risk assessment would determine that it no longer meets the criteria for a confined space.

3) Signage (Confined Spaces/Restricted Spaces)

The entry points to identify confined spaces/restricted spaces are to be permanently signposted and secured to prevent unauthorised entry. Keys must be held by the relevant Campus Facilities Management Unit or authorised non-FMU manager for spaces not under FMU control and only provided to those who are authorised to carry out work in such spaces.

As a minimum all confined spaces/restricted spaces signage will comply with AS 1319 and be conspicuously marked: 'Danger: Authorised Access Space – Authorised Entry Only'.

Before any work in relation to a confined space starts, signs must be erected to prevent entry of persons not involved in the work. Signs must warn against entry by people other than those who are listed on the confined space entry permit, and must be placed at each entrance to the confined space. Signs must be in place while the confined space is accessible, including when preparing to work in the space, during work in the space and when packing up on completion of the work. Signposting alone should not be relied on to prevent unauthorised entry to a potential confined space. Security devices, for example locks and fixed barriers, should be installed. (See the Approved Code of Practice, *Confined Spaces*.)



4) Risk Assessment (Confined Spaces/Restricted Spaces)

A risk assessment shall be undertaken by a competent person or persons undertaking the required work before the work associated within any confined space/restricted space is carried out. The assessment shall be in writing (using Form **WHS35**) and take into account at least the following:

- the nature of hazards associated with the confined space/restricted space which may include
 - atmospheric hazards
 - fire hazards
 - engulfment hazards, or
 - task related hazards
- the work required to be done, including the need to enter the confined space/restricted space
- the range of methods by which the work can be done
- the hazards involved and associated risks involved with the actual method selected and the equipment proposed to be used
- emergency response procedures, and
- the competence of the persons to undertake the work.

Where multiple similar confined spaces/restricted spaces in which similar work is performed are present and the risk factors are identical, a generic risk assessment may be appropriate and applied.

Risk assessments shall be reviewed and revised whenever there is suspicion or evidence to indicate that there may be a change in the risk/s posed to staff.

If a risk assessment identifies a risk to health or safety arising from the tasks to be conducted in a confined space/restricted space the risk must be eliminated if possible. If this is not possible, risks must be minimised by the implementation of other effective risk control measures. Any hazards associated with or incidents involving work in confined spaces/restricted spaces must be reported in the University **Online Hazard/Incident Reporting & Investigation System** (see hyperlink in Section 8 - University Documents/Forms).

Implemented risk control measures must also be carefully reviewed and improved, extended or replaced as necessary to ensure ongoing effective risk control.

5) Written Authority (Permit to Work) (Confined Spaces Only)

A Confined Space Written Authority (Entry Permit Form **WHS36**) must be completed by the person in direct control of the required work prior to the work being carried out in confined spaces.

Approval to enter a confined space shall be obtained from the person in direct control of the space and associated work before the work is commenced.

Approval shall not be granted until:

- a completed risk assessment (Form **WHS35**) of the confined space/restricted space has been provided by a competent person
- measures to control the identified risks have been established and implemented
- the competency of those required to enter the space has been verified
- appropriate confined space authority to enter in respect to the particular entry has been completed
- emergency procedures have been determined and are in place, and
- a standby person has been provided (where the element of risk requires that a standby person should be provided).

NOTE: No work shall be carried out within a confined space/restricted space, or on the outside surface of a confined space/restricted space, if the work or any plant or equipment being used is likely to create a risk:

- to the health and safety of a person in the confined space/restricted space, or
- of fire or explosion.



The **Confined Space Written Authority (Entry Permit)** must be displayed in a prominent place, usually adjacent to the confined space, to facilitate signing in and out and clearance of the space. All staff entering and exiting the confined space must record their entry and exit on this permit. Prior to a written authority being cancelled, all tasks in the confined space shall cease and all persons shall be removed from the space.

6) Hot Work (Confined/Restricted Spaces)

If hot work is to be carried out a **Hot Work Permit** (Form **WHS38**) must be completed prior to any hot work being carried out in a confined space/restricted space.

Approval to carry out hot work in a confined space/restricted space shall be obtained from the person in direct control of the associated work and workspace before the work is commenced.

The completed hot work permit must be displayed in a prominent place, usually adjacent to the confined/restricted space.

7) Alternating entry and Standby Persons (Confined spaces/Restricted spaces)

Where it is expected that the person entering the confined space/restricted space and the standby person may change places, each is to be authorised to standby while the other person is inside the confined space/restricted space.

8) Atmospheric testing and monitoring (Confined spaces only)

Should a risk assessment indicate the need for atmospheric monitoring this will be carried out by a person proven to be competent. No person shall enter a confined space to conduct atmospheric testing or monitoring without a written authority. Results of any monitoring shall be recorded on the confined space entry permit. Monitoring results shall be made available to all staff who may have to enter the confined space. Testing should include oxygen concentration, concentration of flammable airborne contaminants and concentration of airborne contaminants. Prior to entry into the confined space, the atmosphere contained within it shall have:

- a safe oxygen range
- airborne contaminants that may cause impairment, loss of consciousness, or asphyxiation reduced to below relevant exposure standards, and
- a concentration of flammable airborne contaminant below 5% LEL.

9) Respiratory protective devices (Confined spaces only)

Where a hazardous atmosphere may exist despite application of the hierarchy of risk controls, no persons shall enter the confined space unless they are equipped with air-supplied or self-contained breathing apparatus and, where appropriate, other personal protective equipment. Equipment used in confined space entry must conform to AS/NZS 1715: Selection, use and maintenance of respiratory protective devices and AS/NZS 1716: Respiratory Protective Devices.

The appropriate respiratory protective equipment should be based on the level and type of contaminants and the work to be done. Whenever there is any doubt about the type of respiratory protective equipment required, a conservative approach should be adopted (for instance, use air-supplied respiratory equipment).

10) Rescue and First Aid procedures (Confined spaces/Restricted spaces)

Emergency response, first aid procedures and provisions shall be planned, established, regularly rehearsed, and implemented to ensure adequate responses to an emergency in a confined space/restricted space.

In cases of emergency response involving emergency services personnel, these persons shall be made aware of the conditions in the confined space/restricted space prior to entry.

Where a risk assessment has determined the need for an emergency response greater than that in the emergency response procedures, individual procedures will be planned, established and regularly tested.



The standby person under no circumstances should attempt to enter the confined space/restricted space, unless properly trained and equipped to deal with an emergency and there are other personnel outside the confined space/restricted space to assist.

11) Training (Confined spaces/Restricted spaces)

All persons with work activities related to confined spaces/restricted spaces shall be trained and assessed as competent to perform those activities. The training must be undertaken by an approved training provider and include at least the following core training elements:

- legislative requirements
- definition of confined spaces/restricted spaces
- the hazards associated with confined spaces/restricted spaces
- risk assessment procedures
- risk control measures
- emergency procedures, and
- the selection, use, fit and maintenance of safety equipment.

Note: All trained persons shall have their competency reassessed annually to ensure their ongoing competency to perform the activities relevant to their entry and the work associated with confined spaces/restricted spaces. Where competency cannot be demonstrated, retraining must occur until competency is achieved.

6. Documentation & Record Keeping

The following documentation must be maintained by all areas with control over confined spaces/restricted spaces:

- The location of all confined spaces/restricted spaces
- The risk assessments and the assigned risk control measures
- Procedures used for conducting tasks in or on confined spaces/restricted spaces
- Training and competency records
- Confined space entry permits
- Hot work permits
- Atmospheric testing and monitoring records
- Inspection, calibration and maintenance of confined space safety equipment
- Inspections and audits of confined spaces/restricted spaces, and
- Reports related to any hazards or incidents associated with confined spaces/restricted spaces as entered into the **University Online Hazard/Incident Reporting & Investigation System**.

7. Performance Measures

- For all persons entering confined spaces/restricted spaces training is current (within 12 months)
- Risk assessments have been completed for all confined space/restricted space entry
- The University Confined Space/Restricted Space Register is current.

8. University Documents/Forms

Further advice on managing risks in university workplaces, including supporting documents and training courses are available on the Safety & Wellbeing website.

- [WHS Procedure - Managing Workplace Health and Safety Risks](#)
- [WHS Procedure - Safe Chemicals Management](#)
- [WHS27 - Contractor's Permit to Work](#)
- [WHS35 – Confined Space Risk Assessment Worksheet](#)
- [WHS36 – Confined Space Written Authority \(Entry Permit\)](#)
- [WHS38 – Hot Work Permit for Confined Spaces](#)
- [Online Hazard/Incident Reporting & Investigation System](#)
- [Facilities Management Unit Confined Space Register](#)



9. References

[SafeWork SA Resources](#)—WHS legislation and Approved Codes of Practice:

- Work Health and Safety Act 2012 (SA)
- Work Health and Safety Regulations 2012 (SA)
- How to Manage Work Health and Safety Risks
- Confined Spaces
- Managing Risks of Hazardous Chemicals in the Workplace.

[Australian Standards online](#) (UniSA subscription)

- AS/NZS 2865: 2009 Safe working in a confined space
- AS1319: 1994 Safety signs for the occupational environment
- AS/NZS 1715: 2009 Selection, use and maintenance of respiratory protection devices
- AS/NZS 1716: 2012 Respiratory protection devices.