**Appendix A (Page 1 of 2)**

**CONFINED SPACE ENTRY - SAMPLE CONTROL MEASURES**

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| To assess the risks and identify the necessary safety precautions, the University’s [hazard management](http://www.adelaide.edu.au/hr/hsw/handbook/hazard/) process should be followed. This process includes the links to the risk assessment template or you can access [RMSS](https://www.adelaide.edu.au/hr/hsw/intranet/rmss/). Examples of hazards associated with confined space entry are provided below for consideration.Please note that they are informative only. Schools/Branches will need to tailor appropriate control measures based on the hazards, nature and location of the activity. A risk assessment which includes controls must be completed for each confined space entry together with a written authority i.e. a confined space entry permit (an example is provided in [**Appendix B**](#AppendixB)**.**) |
| **Examples of hazards**  | **Associated Risk** | **Examples of control measures. (One or more measures may be appropriate under each heading and should be considered)** |
| Confined space entry (general) | Loss of consciousness, injury or death due to the immediate effects of airborne contaminantsFire, explosion from ignition of flammable contaminantsDifficulty rescuing and treating an injured or unconscious personAsphyxiation from atmospheric oxygen deficiency or immersion in stored material (e.g. grain, sand, flour or fertiliser) | Elimination of the need to enter the space* Redesign the space to eliminate the need for entry
* Install fixed or temporary cleaning devices (e.g. spray balls using high-pressure hoses) inserted through an access hatch to clean the inside of a tank
* Use remote cameras or a mirror attached to a probe for internal inspection of vessels
* Use remotely operated rotating flail devices, vibrators or air purgers to clear blockages in silos; or
* Use a hook, long-handled clasp or magnet on a string to retrieve an object dropped into space.

If elimination is not possibleSubstitution* Use a non-toxic substance instead of a toxic substance
* Apply paints, solvents or surface coatings with brushes rather than aerosols
* Replace flammable substances with non-flammable substances

Isolation and engineering (i.e. modify the workplace)* Block service lines such as electrical cables, water pipes, air lines
* Guard or secure moving machinery parts such as agitators, fans or blenders
* Enclose machinery to reduce noise
* Thoroughly ventilate the space to ensure a safe oxygen level
* Purge contaminants from the space

Atmospheric testing * Ongoing testing and monitoring to ensure the atmosphere is maintained at a safe level with the frequency based on the likelihood of a change of conditions.
 |
| Confined space entry (general)(continued) |  | Administration* Risk assessment/Job Safety Analysis (JSA)
* Competency based training
* Written authority – confined space entry permit
* Signs and barriers
* Records management

Personal Protective Equipment (PPE)* Hard hats, glasses, gloves, chemical suits, boots
* Respiratory protective equipment

(continued) |

**Appendix A (Page 2 of 2)**

**CONFINED SPACE ENTRY - SAMPLE CONTROL MEASURES**

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| **Other considerations** |
| Safe entry and exit | Falling from a height | * Erect barriers
* Provide safety harnesses and lifting devices
* Assess competency of person in the use of PPE
* Implement entry and exit procedures to indicate when workers are in the space
* Erect signs and barricades to prevent entry of persons not involved in the work
* Establish a communication system between people inside and outside of the confined space to summon help in an emergency
* Ensure you have the appropriate equipment for the task
 |
| Hydrogen sulphide gas | Poisoning | * Ventilate space
* Monitor atmosphere
* Assess competency of persons in the use of monitoring equipment
* Assess competency of persons to wear respiratory protective devices
* Assign standby person
* Select communications equipment
 |
| Services to the confined space | Physical injury | * Tag out services, lock valves etc as applicable as per HSW Handbook (<http://www.adelaide.edu.au/hr/hsw/handbook/plant/>)
* to prevent the introduction of contaminants or conditions through piping, ducts, vents, drains, conveyors, service pipes and fire protection equipment
* to prevent the activation or energising of machinery
* to prevent the inadvertent use of electrical equipment
 |
| Inadequate lighting | Physical injury | * Provide additional and appropriate safe lighting
* Provide emergency lighting(e.g. torches)
 |
| Noise | Hearing impairment | * Substitute noisy machinery with quieter machinery
* Use sound dampeners or silencers, noise barriers and isolation
* Provide hearing protection and train persons in its use
* Determine appropriate communication methods
 |
| Physiological and psychological | Stress and/or physical exhaustion | * Assess and monitor persons (e.g. at agreed intervals)
* Rest breaks (e.g. at agreed intervals)
* Job rotation
 |
| Welding | Fumes | * Hot work permit
* Provide fume extraction equipment
* Provide fire extinguishers
 |
| Flammable atmosphere | Explosion, burns, physical injury | * Eliminate all ignition sources in the vicinity (e.g. open flames and hot surfaces, spark-producing equipment
 |
| Electrical | Electric shock, burns, scalds, physical injury | * Provide RCD protection
* Ensure all equipment has been tested and tagged
 |
| Unguarded plant and machinery | Entanglement, cutting, crushing  | * Isolate power supply prior to entry and tag out
 |