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The Confined Space Program

Introduction

The Training and Assessment Strategy (TAS) provides a guide as to how to deliver and assess against the Confined Space Entry Program.

The Confined Space Entry Program has been designed and packaged in consultation with industry and is delivered over two one-day courses (CS100 and CS200). These courses may be delivered consecutively, as two free-standing courses or over an extended period of time, depending on the specific client’s requirements.

The Confined Space Entry Program caters for logical building of skills and knowledge, in addition to splitting the competencies required by persons who require certification to work in a confined space, versus those that are required to conduct atmospheric monitoring and act as a Standby Person.

The CS100 Confined Space Entry course delivers the following units of competency:

- RIIRIS201D Conduct local risk control
- MSMPER200 Work in accordance with an issued permit
- MSMPER205 Enter Confined Space
- RIHWHS202D Enter and work in Confined Spaces

The CS200 Confined Space Gas Test and Atmospheric Management course delivers the following units of competency:

- MSMWHS200 Work safely
- MSMPER202 Observe Permit Work
- MSMWHS217 Gas Test Atmospheres

Trainer competencies

To be eligible to train and assess the Confined Space courses (CS100 and/or CS200) for Emergency Management Services the Trainer/Assessor must meet the following minimum requirements prior to conducting the course.

Qualifications

- Certificate IV Training and Assessment (including the LLN Unit of competency).
- Confined Space qualifications equivalent to the level being trained or above (minimum of RIHWHS202D).
- EMS Confined Space Trainer accreditation (as per units of competency delivered).

Vocational Experience

- At least 3 years experience working with Confined Spaces.
- Experience in hazard identification and managing risks.
- Practical experience in conducting Confined Space Entry.

Training Facility

The Confined Space courses may be delivered at any facility that has secure access to a training classroom with projector screen/whiteboard, seated space for the nominated number of participants and relevant amenities (lunch room and toilet facilities). A minimum height of 3m is required for all practical training requiring the use of a tripod.

Where the Confined Space Simulator is in use (NSW only), there must be an appropriate parking space available (6m x 4m with an overhead clearance of 6m) that easily accessible for training from all four sides.
Tools and Resources

The detailed tools and resources that are required to deliver the CS100 Confined Space Entry and CS200 Confined Space Gas Test and Atmospheric Management courses are provided in the Appendix.

Each of the tools and resources are reviewed and formally validated on a regular basis, in accordance with the Standards for Registered Training Organisations.

For further information, Trainers/Assessors may also refer to the following:

- EMS Policy and Procedures Manual for detailed information regarding the rights and responsibilities of the Trainer/Assessor. This includes travel, training, assessment and requirements to support participants in achieving competency from enrolment through to assessment.
- EMS Participant Handbook for detailed information regarding the rights and responsibilities of the participants, including access to support services for specific learning needs.

For more information please contact the EMS Training Manager on 1300 133 302.

CS100 Confined Space Entry (Day 1)

Course Overview

The CS100 Confined Space Entry course focuses on the skills required for workers entering the confined space to conduct tasks under the supervision of a Standby Person.

The one day Confined Space Entry course CS100 is delivered over an 8 hour face to face period and includes the following units of competency:

- RIIRIS201D Conduct local risk control
- MSMPER200 Work in accordance with an issued permit
- MSMPER205 Enter Confined Space
- RIIWHS202D Enter and work in Confined Spaces

It is noted that CS100 does not include the Atmospheric Testing and Monitoring competencies the role of Standby Person. If the course participant is required to act in the role of Standby Person then it is recommended that they attend the second day of the program (CS200) or are provided further instruction as per their industry requirements prior to acting in this role.

Course Duration

The duration of the One Day CS100 Confined Space Entry Course is a minimum of 8 hours face to face. This duration may not be reduced but may be extended as required to meet vocational requirements.

Entry Requirements

Pre-Requisite

There are no prerequisite knowledge requirements for the CS100 course.

Physical Fitness

The Confined Space course is very practical/physical and requires a certain level of fitness. Persons participating in the course should feel comfortable climbing ladders, hauling ropes and be able to lift approximately 10 kilos of dead weight.
Standard of Dress
Suitable work clothing is required when conducting practical activities. A minimum of a long sleeved shirt with long pants and sturdy footwear. Thongs, sandals, high heels, shorts, skirts and dresses are not permitted during practical activities.

Topics included (CS100)

- What is a Confined Space
- What is not a Confined Space
- What is considered entry
- The WHS Act and Regulations
- Code of Practice – Confined Space
- Australian Standard 2865 – Confined Space
- Company Policies and Procedures
- What is a Hazard
- What is Risk
- Definition of Controls
- Physical Hazards
- Environmental Hazards
- Atmospheric Hazards
- Hazardous Substances
- Oxygen Enriched Atmosphere
- Oxygen Deficient Atmosphere
- Flammable Atmosphere
- Toxic Atmosphere
- Management of Confined Spaces
- Signage
- Restricting Access
- Atmospheric Testing
- Atmospheric Monitoring
- Risk Assessments
- Confined Space Permits
- Site Preparation
- Isolation
- Communications / Standby Person
- Completion of Work
- Equipment
- Rescue
- Practical Confined Space Activity – Horizontal Entry
- Practical Confined Space Activity – Vertical Entry

Assessment Requirements

To be deemed competent in the CS100 Confined Space Entry Course participants will have to complete the following assessments.

- 25 Question Multiple Choice Assessment.
- 15 Written Answer Questions.
- A Practical Risk Assessment Activity.
- A Practical Equipment Identification Assessment Activity.
- A Practical Confined Space Entry Activity.

The assessments will be conducted throughout the course in a formative manner and as a summative assessment at the end of the course.

Lesson Plan

<table>
<thead>
<tr>
<th>CS100 Confined Space Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Introduction</strong></td>
</tr>
<tr>
<td>1.1 Course Introduction</td>
</tr>
<tr>
<td>- Welcome participants and introduce yourself.</td>
</tr>
<tr>
<td>- Provide an overview of what to do in the event of an emergency.</td>
</tr>
<tr>
<td>- Identify the exits.</td>
</tr>
<tr>
<td>- Identify the toilets and facilities.</td>
</tr>
<tr>
<td>- Provide an overview of the course and timeframes.</td>
</tr>
<tr>
<td>- Suggested timeframes below:</td>
</tr>
<tr>
<td>- 0800 to 0930 Training</td>
</tr>
<tr>
<td>- 15 minutes Morning Tea</td>
</tr>
<tr>
<td>- 0945 to 1215 Training</td>
</tr>
<tr>
<td>- 45 min Lunch Break</td>
</tr>
<tr>
<td>- 1300 to 1430</td>
</tr>
<tr>
<td>- 15 min Afternoon Tea</td>
</tr>
<tr>
<td>- 1700 Conclusion</td>
</tr>
<tr>
<td>2. Definition of a Confined Space</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>2.1 What is a CS</td>
</tr>
<tr>
<td>• Discuss the definition of a confined space (slide on definition)</td>
</tr>
<tr>
<td>• Review WHS Regulation meaning of Confined Space (Page 14 in Manual)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Brainstorm Activity – What is a Confined Space.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 What is not a CS</td>
</tr>
<tr>
<td>• Discuss other spaces such as dangerous spaces and why they are not considered to be a confined space.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Work Health and Safety Act and Regulations</td>
</tr>
<tr>
<td>• Discuss what the WHS Act is and how it applies to workers.</td>
</tr>
<tr>
<td>• Explain where a copy of the legislation can be found.</td>
</tr>
<tr>
<td>• Discuss the responsibilities of persons at work (Primary Duty of Care Page 11 in manual)</td>
</tr>
<tr>
<td>• Discuss the WHS Regulations and how they apply to workers (duties of Workers Page 12 in manual).</td>
</tr>
<tr>
<td>• Height the importance of consultation (Page 6 COP).</td>
</tr>
<tr>
<td>• Explain that Part 4.3 of the WHS is a section of the WHS Regulations specifically about confined space requirements and that you will be covering this section in detail as you go through the course.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.2 Code of Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outline the COP for Confined Space.</td>
</tr>
<tr>
<td>• Where it can be found</td>
</tr>
<tr>
<td>• How it is used</td>
</tr>
<tr>
<td>• When it becomes law.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.3 Australian Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outline AS 2865 Confined Space</td>
</tr>
<tr>
<td>• Where it can be found</td>
</tr>
<tr>
<td>• How it is used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.4 Company Policies and Procedures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Discuss how company policy is used to prevent emergencies and promote safety.</td>
</tr>
<tr>
<td>• Also explain that failure to comply with WHS directions is an offence under the WHS Act and may leave a person liable to prosecution</td>
</tr>
<tr>
<td>• Discuss the Environmental Management Plan.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.5 Confined Space Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Who has responsibilities in regards to the confined space.</td>
</tr>
<tr>
<td>o (Read from COP Pg 5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 What is a Hazard</td>
</tr>
<tr>
<td>• Discuss WHS Reg Part 4.3 Div 3 Cl 66</td>
</tr>
<tr>
<td>• Discuss the definition of Hazard</td>
</tr>
<tr>
<td>• Highlight the different ways hazards can be identified in the workplace.</td>
</tr>
<tr>
<td>• Discuss the different types of Hazards you would expect to find in a CS</td>
</tr>
<tr>
<td>o Physical Hazards</td>
</tr>
<tr>
<td>o Environmental Hazards</td>
</tr>
<tr>
<td>o Atmospheric Hazards</td>
</tr>
</tbody>
</table>
### 4.2 What is Risk
- Define the term Risk
- Outline the requirement for a risk assessment prior to entering a CS
  - (Read WHS Reg Part 4.3 Clause 67 Part 3 Page 90)
- Discuss what a Risk Assessment is and how one is conducted.

### 4.3 Hazard Control
- Review the process of Hazard Management
- Discuss the Hierarchy of control as required by WHS
- Highlight the requirement to review control measures.
  - Read WHS Reg Part 3.1 Clause 38 Pg 71
- Discuss Isolation and the Lock Out Tag Out procedure.
- Provide an overview of Ventilation as a procedure to clear Atmospheric hazards.

#### Brainstorm Activity – Identify types of Hazards that may exist. Write the three categories of hazards on the white board. As participants identify hazards group answers within the correct category. Consider the use of 3 scribes, each with a pen and butchers paper and have them each list the hazards under the correct category (Atmospheric, Physical and Environmental).... Place these answers on the wall using blue tack.

### 4.4 Physical Hazards
- Types of Physical Hazards
- Isolation
- Management

### 4.5 Environmental Hazards
- Types of Environmental Hazards
- Management of Environmental Hazards

### 4.6 Atmospheric Hazards
- Review WHS Reg Division 8 Clause 51
- Discuss the Four Atmospheric Hazards common to confined space as listed in the WHS Regs Div 8, Clause 51
- Outline when testing and monitoring is required

### 4.7 Hazardous Substances
- Types of Hazardous Substances
- Identifying Hazardous Substances
  - MSDS
  - Product Labels
  - HCIS Database
- Classes of Dangerous Goods

#### Brainstorm Activity – Participants to identify controls for previous hazards identified.

### 4.8 Oxygen Deficient Atmosphere < 19.5%
- Definition
- Causes
- Effects
- Management

### 4.9 Oxygen Enriched Atmosphere > 23.5%
- Definition
- Causes
- Effects
- Management

### 4.10 Flammable Atmosphere
- Definition
- Causes
- Effects
- Management
- Review WHS Reg Div 8 Section 52 Ignition Sources
  - < 5% for non monitored. < 10% for monitored.
- Ventilation Procedures and Hazards associated with ventilation.
- Purging methods.
- Review WHS Reg Div 9 Section 72, 73

### 4.11 Toxic Atmosphere
- Definition
- Causes
- Effects
- Management
<table>
<thead>
<tr>
<th>5. Confined Space Procedures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Management of a Confined Space</td>
<td>• Review Part 4.3 Div 3 Clause 65</td>
</tr>
</tbody>
</table>
| 5.2 Signage | • Review WHS Reg Div 3 Clause 68  
  • Identify correct CS Signage  
  • Discuss the appropriate location for CS signage. |
| 5.3 Restricting Access | • Confined spaces need to be secured to prevent unauthorised entry.  
  • Read WHS Reg Part 4.3 Div 3 Clause 65 (CS must not be entered until the CS Division is complied with.  
  • Read COP Pg 27 5.9 Signs and Barricades. (Confined Spaces should be secure). |
| 5.4 Atmospheric Monitoring / Testing | • Review Regulation Part 4.3 Division 3 Clause 50  
  • Discuss when to test  
  • Discuss when to monitor  
  • Who conducts testing / monitoring  
  • Recording results |
| 5.5 Risk Assessment | • Review the requirements for a risk assessment and the details of hazards to be entered on the CS Permit. |
| 5.6 Permit | • Review Part 4.3 Div 3 Clause 67  
  • Discuss the CS Permit and how to complete.  
  • Discuss other permits that could also be required.  
  • Discuss the importance of adhering to the Permit conditions.  
  • Highlight the importance of adhering to time periods.  
  • Outline the procedures for making a change or extension to the permit.  
  • Discuss the responsibilities of the permit receiver (signing)  
  • Highlight the importance of displaying the permit or having readily available.  
  • Discuss the importance of required PPE being listed on the permit. |
| 5.7 Site Preparation Setup | • Discuss how a CS site should be set up prior to commencing work  
  o Signage, Barrier tape, Briefing, Equipment and rescue equipment pre prepared and set up.  
  o Reviewing RA and Permit.  
  o Check site for Permit compliance. |
| 5.8 Isolation | • Read Review WHS Regs Part 4.3 Div 3 Clause 70  
  • Highlight the how and why of a safe system to lock out and tag out. |
| 5.9 Standby / Communication Standby Person | • Outline the role and responsibilities of a standby person  
  Communication  
  • Read WHS Reg part 3.4 Div 3 Clause 69  
  • Also on page 26 COP  
  • Discuss the different types of communication  
  • Visual  
  • Audible (Voice, Radio, Whistles)  
  • Tactile |
| 5.10 Completion of Work | • Discuss the procedures to be followed at the completion of work.  
  • Outline the requirements for post work inspections.  
  • Discuss the withdrawal of the Permit.  
  • Discuss when to remove Isolation Locks.  
  • Highlight the clean up responsibilities including waste disposal / recycling.  
  • Discuss the removal of barriers and security of the Confined Space.  
  • Highlight importance of checking Permit against the work requirements to ensure that all requirements were met. |
### 5.11 Equipment
- Discuss the use of commonly used confined space entry equipment.
- Demonstrate the use of the equipment.
- Explain how to inspect the equipment, Identify and Rectify faults for the following equipment:
  - Tripod
  - Harness
  - Lifeline
  - Personnel Winch
  - PPE
  - Respiratory Protection

### 5.12 Rescue
- Definition for both Emergency Procedures and Rescue Procedures
- Review Div 3 Clause 74

## 6. Practical Activities

### 6.1 Horizontal Entry
The Participant is to act as part of a team to complete a task involving the **Horizontal Entry** to a simulated confined space using a Horizontal Lifeline. To be deemed competent in this skillset the participant must safely complete the activity following the correct procedures and adhering to the permit restrictions. The assessor is to ensure that all elements listed below are demonstrated. Where criteria is not demonstrated by the participant (due to working as part of a team) the Assessor will use questioning techniques and further tasks to identify competency in all of the following:

1. Obtain Permit and complete risk assessment.
2. Confirm permit details and any hazards.
3. Set up signage and barricades to restrict access.
4. Confirm isolation of all hazards.
5. Set up rescue equipment and review rescue plan with all workers.
6. Appoint standby person and position them at entry to confined space.
7. Select and prepare entry gear. This includes donning PPE and setting up lifeline.
8. Arrange for the atmosphere to be tested prior to entry.
9. Review Permit conditions; confirm isolations and sign into the confined space immediately prior to entry.
10. Enter confined space in a safe and controlled manner.
11. Maintain continuous communication with the Standby Person whilst in the confined space.
12. Exit the confined space in a safe controlled manner and immediately sign out.
13. Conduct a final check of the confined space and confirm all persons are out by checking against the permit.
14. Secure the confined space.
15. Notify permit issuer and have permit withdrawn.
16. Restore equipment, clean and service as required.

### 6.2 Vertical Entry
The Participant is to act as part of a team to complete a task involving the **Vertical Entry** to a simulated confined space using a Tripod and Personnel Winch System. To be deemed competent in this skillset the participant must safely complete the activity following the correct procedures and adhering to the permit restrictions. The assessor is to ensure that all elements listed below are demonstrated. Where criteria is not demonstrated by the participant (due to working as part of a team) the Assessor will use questioning techniques and further tasks to identify competency in all of the following:

1. Obtain Permit and complete risk assessment.
2. Confirm permit details and any hazards.
3. Set up signage and barricades to restrict access.
4. Confirm isolation of all hazards.
5. Prepare Tripod, Personnel Winch and Retractable Reel for vertical entry.
6. Set up rescue equipment and review rescue plan with all workers.
7. Appoint standby person and position them at the entry to the confined space.
8. Correctly select and fit all PPE as required by the Entry Permit.
9. Arrange for the atmosphere to be tested prior to entry and confirm results.
10. Review Permit conditions, confirm isolations and sign into the confined space immediately prior to entry.
11. Enter confined space in a safe and controlled manner.
12. Maintain continuous communication with the Standby Person whilst in the confined space.
13. After conducting a basic activity as directed the participant is to exit the confined space in a safe controlled manner and immediately sign out.
14. Conduct a final check of the confined space and confirm all persons are out by checking against the permit.
15. Secure the confined space.
16. Notify permit issuer and have permit withdrawn.
17. Restore equipment, clean and service as required.

End of CS100 Lesson Plan

Answer Sheet

Assessment Task 1

<table>
<thead>
<tr>
<th>Task</th>
<th>Hazards</th>
<th>Rating</th>
<th>Control Measure</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up for work</td>
<td>Persons walking through worksite, Slips trips and falls</td>
<td>H</td>
<td>Erect Barriers, Signs, Mark all trip hazards with safety cones</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Exposure to sun / environment</td>
<td>M</td>
<td>Wear long sleeved clothing, Pants and use sun protection</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Heavy cover causing manual handling issue</td>
<td>H</td>
<td>Use manual handling aids / two person lift.</td>
<td>L</td>
</tr>
<tr>
<td>Enter confined space and carry out inspection and Exit</td>
<td>Water flooding pipe</td>
<td>H</td>
<td>Isolate water source</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Falling from ladder</td>
<td>M</td>
<td>Use fall protection system / Tripod and Lifeline.</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>Monitor Atmosphere / Ventilate</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Falling Equipment</td>
<td>H</td>
<td>Tether equipment / All persons wear helmets</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Sharp Objects</td>
<td>H</td>
<td>Wear Helmet /Gloves / PPE</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Low visibility</td>
<td>M</td>
<td>Use personal lighting</td>
<td>L</td>
</tr>
</tbody>
</table>

Assessment Task 2

Refer to the question paper and place a circle around the correct answer. If you make a mistake or change your mind simply cross out the incorrect answer and circle the correct answer.

Example

A   B   C   D
A   B   C   D

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Question 26

Complete the following definition of a Confined Space as per the WHS Regulation 2011. Use each word listed below to complete the definition. Each word can only be used once.

**** (Engulfment, Partially, Oxygen, Atmospheric, Occupied, Contaminates, Explosion)***

A Confined Space is an enclosed or _______ Partial _____ enclo _____ ed space that is not designed or intended to be primarily _______ Occupied _______ by persons. It is designed or intended to be at _______ Atmospheric_______ pressure whilst any person is the space and is likely to be at risk to health and safety from:

(i) an atmosphere that does not have a safe _______ Oxygen_______ level
(ii) contaminants, including airborne gases, vapours and dusts that may cause injury from fire or _______ Explosion_______
(iii) harmful concentrations of airborne _______ Contaminates_______ or
(iv) Risk of ___Engulfment____.

Question 27

List three methods of identifying hazards in the workplace.

This could be a physical method, reviewing procedures or paperwork, speaking with others, contacting governing bodies etc

Question 28

List 3 hazards (could be a hazardous condition, work processes, or a hazards associated with using equipment) that could increase the risks within a confined space whilst you are working inside the space.

Answers are to be consistent with conditions or work processes that may potentially be found within a confined space. This could be due to work processes, atmospheric changes, environmental changes etc.

Question 29

For each of the Hazards above, write down an appropriate method to control the hazard. (make the hazard safe)

The three answers must be effective to control the hazard and consistent with the hierarchy of control.

Question 30

List 3 Atmospheric Hazards that could be found in a confined space

The answers must reflect a possible hazardous atmospheric conditions and can include process gases, toxic gasses, environmental changes.

Question 31

List the hierarchy of hazard control as per the WHS Regulation 2011

El Eliminate
Su Substitute
Is Isolation
En Engineering
Ad Administration
PP Personal Protective Equipment
Question 32
Who is responsible for removing isolation locks and tags when conducting confined space activities?

Only the person who installs the isolation may remove the isolation.

Question 33
When should Atmospheric Monitoring Equipment be challenge tested?

Prior to use and as per company / manufacturers procedures.

Question 34
Circle which of the following PPE would provide protection for workers in a atmosphere with only 5% oxygen?

[Images of various respirators]

Question 35
What is the gas detector to the right telling us?

The LEL is at 12%

Is it safe to enter the confined space?

No it is not

What would you do to make the space safe?

Ventilate the space

Question 36
What is ONE change that would require you to arrange for the revalidation of a Work Permit?

Answers may include a change in conditions, work procedures, the task or personnel, time constraints or the job itself

Question 37
Join the Work task with the Permit that would be required

Enter a Confined Space
Weld a pipe in a factory
Dig a deep hole
Hot Work Permit
Excavation Permit
Confined Space Entry Permit
Question 38
What is meant by the term Deviation to permit conditions

Any change to the details listed on the Permit

Question 39
List one reason that a Work Permit would be revoked.

The answer could be any change in permit conditions, issues encountered during work, changes to the worksite and etc.

Question 40
List two of the permits that are used in your organisation.

This answer could be any of the current permits used on a job site. This includes Confined Space, Heights, Electrical, Excavation, Hot Work, Start Work, etc

End of CS100 Answer Template
CS200 Gas Test and Atmospheric Management (Day 2)

Course Overview

The CS200 Gas Test and Atmospheric Management course builds on the CS100 course and includes additional competencies for persons required to act in the Standby role whilst other workers are working within a confined space.

CS200 course is delivered over an 8-hour face-to-face period and includes the following units of competency:

MSMWHS200 Work safely  
MSMPER202 Observe Permit Work  
MSMWHS217 Gas Test Atmospheres

Course Duration

The duration of CS200 is a minimum of 8-hours face-to-face. This may not be reduced but may be extended as required to meet vocational requirements.

Entry Requirements

Pre-Requisite

CS200 is generally conducted as day 2 of the Confined Space Program, after successful completion of the CS100 Confined Space Entry course. While there are no formal prerequisite units of competency in enrolling for CS200, it is expected that participants hold the following units of competency or have solid vocational experience working in confined spaces.

RIIRIS201D Conduct local risk control  
MSMPER200 Work in accordance with an issued permit  
MSMPER205 Enter Confined Space  
RIIWHS202D Enter and work in Confined Spaces

The units of competency outlined above are awarded as part of CS100 Confined Space Entry Day course.

Physical Fitness

The Confined Space course is very practical/physical and requires a certain level of fitness. Persons participating in the course should feel comfortable climbing ladders, hauling ropes and be able to lift approximately 10 kilos of dead weight.

Standard of Dress

Suitable work clothing is required when conducting practical activities. A minimum of a long sleeved shirt with long pants and sturdy footwear. Thongs, sandals, high heels, shorts, skirts and dresses are not permitted during practical activities.

Topics included (CS200)

Atmospheric Hazards  
Gas Detectors  
Testing and Atmosphere  
Atmospheric Monitoring  
Respiratory Protection  
Definition of Ventilation  
Ventilation Equipment  
Methods of Ventilation  
Natural Ventilation  
Forced Ventilation  
Purging  

Complete a Confined Space Permits  
Complete a Confined Space Risk Assessment  
Emergency Procedures  
Rescue Procedures  
WHS Requirements for Rescue  
Setting up for Rescue  
Practical Confined Space Activity – Standby Person  
Practical Activity – Gas Test Atmosphere  
Practical Activity – Confined Space Rescue  
Gas Densities  
Calculating Gas Displacement
Assessment Requirements

To be deemed competent in the Confined Space Gas Test Atmospheric Management course, participants will have to complete the following assessments:

- 20 Question Multiple Choice Assessments.
- 10 Written Answer Questions
- A Practical Risk Assessment Activity.
- A Practical Confined Space Permit Assessment
- A Practical Confined Space Entry Activity.

The Assessments will be conducted throughout the course in a formative manner and as a summative assessment at the end of the course.

Lesson Plan

<table>
<thead>
<tr>
<th>7. Atmospheric Testing and Monitoring</th>
</tr>
</thead>
</table>
| **7.1 Atmospheric Hazards** | - Review the Risk Assessment, Hazards and Control procedures.
| | - O2 outside safe range
| | | o 19.5-23.5
| | - Toxic Atmospheres
| | - Flammable Atmospheres
| | | o 5% and 10% rule
| | - Explain vapor densities and layering of gasses
| | - HCIS Database (Safe Work Australia)
| **7.2 Gas Detectors** | - Types of Gas detectors.
| | - Associated equipment
| | - Operation
| | - Units of measure
| | - Alarms
| | | o Stel
| | | o TWA
| | | o Peaks
| **7.3 Testing and Calibration** | - Challenge testing gas detectors
| | - Calibrating gas detectors
| **7.4 Faults, Service and Maintenance** | - Faults
| | | o Poisoning of sensors
| | | o Contaminating of sensors
| | | o Physical damage
| | | o Limitations of Detectors
| | - Service and maintenance
| **7.5 Testing an Atmosphere** | - When to test an atmosphere
| | - Methods of testing an atmosphere
| | | o Range of levels that need to be tested
| | | o Trapped gasses
| | | o Time delay in readings
| | - Recording results
| **7.6 Atmospheric Monitoring** | - When to monitor an atmosphere
| | - How to wear a gas detector
| **7.7 Respiratory Protection** | - Types of protection
| | - Limitations
### 8. Ventilation

| 8.1 What is Ventilation | • Definition of Ventilation  
|                         | • Review WHS Regs Part 4.3 Div 3 Clause 71  
|                         | • Watch Video on O2 Fire  
|                         | • When to Ventilate  
|                         | • Discuss the hazards associated with ventilation and the special considerations of ventilating a flammable atmosphere. |

| 8.2 Gas Properties | • Discuss Gas Density  
|                   | • Explain how vapour densities effect the way gases behave during ventilation. |

| 8.3 Methods of Ventilation | • Natural  
|                           | • Forced  
|                           | • Mechanical Extraction  
|                           | • Combination of Forced and Mechanical Extraction  
|                           | • Purging (3x Volume Min) |

| 8.4 What Equipment Is used for Ventilation Purposes | • Discuss the Equipment that is used for ventilation  
|                                                     | • Outline the possible faults  
|                                                     | • Discuss the hazards associated with its use.  
|                                                     | • Discuss maintenance procedures for each.  
|                                                     | • Equipment to include  
|                                                     |   - Electric Fan  
|                                                     |   - Petrol Powered Fan |

### 9. Confined Space Permit

| 9.1 Complete a Risk Assessment. | • Review Risk Assessment Requirements  
|                                | • Write a complete risk assessment for confined space entry |

| 9.2 Complete a permit to be followed for a confined space entry. | • Review the CS Permit Process.  
|                                                               | • Review the Hazards and Controls re consistent on the Permit and RA  
|                                                               | • Participants are to complete the EMS Confined Space Entry Permit which will be used in the practical activity. |

| 9.3 Complete a CS Permit for entry. | • Review and complete a CS Entry Permit. |

### 10. Confined Space Permit

| 10.1 Complete a Risk Assessment. | • Review Risk Assessment Requirements  
|                                 | • Write a complete risk assessment for confined space entry |

| 10.2 Complete a permit to be followed for a confined space entry. | • Review the CS Permit Process.  
|                                                                | • Review the Hazards and Controls re consistent on the Permit and RA  
|                                                                | • Participants are to complete the EMS Confined Space Entry Permit which will be used in the practical activity. |

| 10.3 Complete a CS Permit for entry. | • Review and complete a CS Entry Permit. |

### 11. Confined Space Rescue

| 11.1 Emergency Procedures. | • Define a Rescue Plan  
|                            | • Define Emergency Procedures  
|                            | • Who initiates Emergency Procedures |
- Highlight the importance of dialing 000

| 11.2 Requirements for Rescue. | • Review WHS Review Div 3 Clause 74
• Test the Rescue Plan Prior to entry |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11.3 Equipment Setup.</td>
<td>• Discuss the requirements for set up prior to entry</td>
</tr>
</tbody>
</table>

### 12. Practical Confined Space Activities

<table>
<thead>
<tr>
<th>12.1 Act as Standby</th>
<th>• Participants are to take part in a simulated confined space entry under supervision and instruction. They are to move through the standby position as activities take place. The Trainer is to give the candidates simulated gas readings to generate responses from the participants. This can also include verbal questioning to ensure competency with individual participants. This activity is to include the handover procedures for workers and standby persons.</th>
</tr>
</thead>
</table>
| 12.2 Gas Test Atmosphere | • Participant to set up the Gas Detector for atmospheric testing.  
• The participant must challenge test the unit and clear all peaks prior to testing the atmosphere.  
• Testing must be carried out at all levels within the space allowing enough time at each level to achieve an accurate sample. |

**Take part in a Rescue**

- During the activity the trainer will have a participant simulate an injury and require rescue. As part of a team the participants will then effect the rescue of a manikin from within the confined space using either the SKED or the GOTCHA rescue kit. The rescue will follow the steps below.

1. Activate emergency procedures.  
2. Account for all workers.  
3. Make contact with injured worker.  
4. Initiate rescue plan  
5. Retrieve the worker form the space using the SKED and Winch or the GOTCHA kit to the top of the space.  
6. Stabilise the worker. Secure CS.  
7. Set up a ladder slide to lower worker from top of CS.  
8. Using a top belay lower the worker to the ground level.

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End of CS200 Lesson Plan
Answer Sheet
Assessment Task 1

Question 21
List 3 Hazardous gasses that may be found in a confined space

The answer may include any gas that may be a hazard. Includes asphyxiates, toxic gasses, flammable gasses.

Question 22
Using the vapour density supplied, identify the following gasses as being lighter or heavier than air.

Hydrogen Sulphide (Vapour density 1.17) Is Heavier / Lighter than air.
Acetylene (Vapour density 0.9) Is Heavier / Lighter than air.
Propane (LPG) (Vapour density 1.5) Is Heavier / Lighter than air.

Question 23
List 4 activities or situations that could lead to a contaminated atmosphere.

Answers are to be consistent with conditions or work processes that may potentially be found within a confined space. This could be due to dangerous work processes, atmospheric changes, environmental changes etc.

Question 24
List the steps in ventilating a large LPG cylinder in preparation for entry.

Step 1 Purge with inert Gas
Step 2 Ventilate with Air (no more than 21% O₂)

Question 25
E) What is the gas detector to the right telling us?
   The LEL is at 12%.
F) Is it safe to enter the confined space?
   No it is not.
G) What would you do to make the space safe?
   The space must be ventilated to reduce flammable gasses.
Question 26
Identify the hazardous properties of each gas by joining them with a line

Acetylene - Highly Flammable / Explosive
Ammonia - A simple asphyxiate (Non toxic)
Nitrogen - Highly toxic in small quantities
Hydrogen Sulphide - Irritant (Causes watery eyes and difficulty breathing)

Question 27
Circle the persons who have a Work Health and Safety obligation or responsibilities in the workplace.

- The Managing Director
- Sub Contractors
- An Apprentice
- Senior Supervisors
- Casual Staff
- Workers

Question 28
What is one consideration when storing or using a chemical that has the following symbol on its label?

**Answer must address the flammable risk**

Question 29
What are two issues that could arise during confined space activities that would cause you to activate or initiate the emergency procedures?

**Answer must be consistent with a suitable emergency such as lost contact, alarms operating, and dangerous change to conditions.**

Question 30
Below is an extract of the risk phrases from a MSDS for a product? Answer the questions below.

HAZARDOUS SUBSTANCE:

R12- Extremely flammable.
R45- May cause cancer.
R65- Harmful: may cause lung damage if inhaled.
R38- Irritating to skin.
R67- Vapours may cause drowsiness and dizziness.

List two hazards that would exist if the hazardous substance above were to be used in a confined space.

**One answer must acknowledge the flammability issue and the other answer must acknowledge the atmospheric risk.**

What PPE would you require to safely handle this product?

**Answer must include respiratory protection.**

End of CS200 Answer Template
Appendix - Confined Space Program Tools and Resources List

The following tools and resources are required for delivery of the Confined Space Program, including:

- CS100 Confined Space Entry course
- CS200 Confined Space Gas Test Atmospheric Management course

## Tools and Resources List

### Stationery

<table>
<thead>
<tr>
<th>Manuals</th>
<th>Confined Space Participant Manual</th>
<th>1 copy per participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copy of the WHS Regulation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Copy of the Code of Practice Confined Spaces (Reference copy only – not to remain on site)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Copy of Australian Standard AS 2865-2009 Confined Spaces (Reference copy only – not to remain on site)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Participant Handbook (Reference copy only – not to remain on site)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forms</th>
<th>Blank Work Permit</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enrolment / Assessment Forms</td>
<td>1 set per participant</td>
</tr>
<tr>
<td></td>
<td>VET Feedback forms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMS Feedback forms</td>
<td></td>
</tr>
</tbody>
</table>

### Trainer/Assessor Presentation Equipment

- Computer / iPad and Projector with PPT Presentation | 1
- Training and Assessment Strategy | 1

### Training Facility

- Confined Space Simulator / Scaffold Setup or other venue with suitable props.

### Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock Out Tag Out Kit</td>
<td>1</td>
</tr>
<tr>
<td>Tripod</td>
<td>1</td>
</tr>
<tr>
<td>Personnel Winch</td>
<td>1</td>
</tr>
<tr>
<td>20m Kernmantle Ropes</td>
<td>2</td>
</tr>
<tr>
<td>5m Inertia Reel/Retractable Lanyard</td>
<td>1</td>
</tr>
<tr>
<td>Gas detector</td>
<td>1</td>
</tr>
<tr>
<td>Gas detector challenge gas</td>
<td>1</td>
</tr>
<tr>
<td>Electric Ventilation Fan and ducting</td>
<td>1</td>
</tr>
<tr>
<td>20m Extension Lead</td>
<td>1</td>
</tr>
<tr>
<td>Hooks to suspend power lead</td>
<td>8</td>
</tr>
<tr>
<td>Confined space sign</td>
<td>1</td>
</tr>
<tr>
<td>Safety bollards</td>
<td>2</td>
</tr>
<tr>
<td>Barrier tape (Roll)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8m Extension Ladder</td>
<td>1</td>
</tr>
<tr>
<td>4m Ladder</td>
<td>1</td>
</tr>
<tr>
<td>4:1 Pulley System</td>
<td>1</td>
</tr>
<tr>
<td>Helmets including chin strap</td>
<td>12</td>
</tr>
<tr>
<td>Harnesses with Confined Space Loops</td>
<td>12</td>
</tr>
<tr>
<td>Karabiner - Triple Action</td>
<td>8</td>
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<tr>
<td>Anchor Strap</td>
<td>2</td>
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<tr>
<td>15cm Shock Absorber</td>
<td>1</td>
</tr>
<tr>
<td>Single Pulley</td>
<td>2</td>
</tr>
<tr>
<td>Double Pulley</td>
<td>2</td>
</tr>
<tr>
<td>50 kg Manikin</td>
<td>1</td>
</tr>
<tr>
<td>SKED Rescue Stretcher</td>
<td>1</td>
</tr>
<tr>
<td>GOTCHA Rescue Kit</td>
<td>1</td>
</tr>
</tbody>
</table>