CONSTRUCTION
Training Group

LEARNER GUIDE

RIIWHS202E - Enter and work in confined spaces
MSMPER200 - Work in accordance with an issued permit
PUASAR025 - Undertake confined space rescue
MSMWHS216 - Operate breathing apparatus]

1.1 WHAT IS A CONFINED SPACE?

Working in confined spaces requires you to have an understanding of what a confined space is, the dangers related to any confined space operations, and the techniques and equipment that can be implemented to minimise the risk of these dangers.

Working in confined or enclosed spaces can be extremely dangerous and can lead to serious injury, illness or death for individuals or whole groups of workers.

A confined space can increase a worker's risk of being overcome by fumes, gases or lack of oxygen, damage to hearing through increased noise or vibration, extreme temperatures and injury through falls and slips.

It is very important that you have the ability to correctly identify a confined space in order to take appropriate the action such as obtaining permits and using safety equipment.

AS 2865 and the Compliance Code defines a confined space as an enclosed or partially enclosed space that:

- Is not designed or intended primarily to be occupied or entered by a person.
- Has a restricted means of entry and exit.
- Is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space.

- Presents a risk to health and safety from:
  - An atmosphere that does not have a safe oxygen level.
  - Contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion.
  - Harmful concentrations of any airborne contaminants.
  - Engulfment.

Confined spaces may include:

- Culverts and storm water systems.
- Pipes and live or inactive sewer mains.
- Shafts, ducts and access chambers.
- Pits, trenches and gullies.
- Environmental traps and tanks.
- Box girders and bridge voids.
- Storage tanks, process vessels, boilers, pressure vessels, silos and other tank-like compartments.
- Tank cars.
- Water treatment plants

A person is deemed to have entered a confined space when their head (i.e. the breathing zone) or upper part of the body is within the boundary of the confined space. (Note that inserting an arm for atmospheric testing is not considered an entry into a confined space).

You can use a table similar to the one shown below to determine if the work area is classified as a confined space. Answer each question with Yes or No.

Question	Yes or No
1. Is the space enclosed or partially enclosed?	
2. Is the space intended or designed primarily for other than human occupancy?	
3. Does the space have a restricted means of entry and exit?	
4. Is the space designed or intended to be at normal atmospheric pressure while any person is in the space?	
5. Could the atmosphere have oxygen concentration outside of the safe oxygen range?	
6. Could the atmosphere have a concentration of airborne contaminant that may cause fire or explosion?	
7. Could the atmosphere have harmful concentrations of any airborne contaminants?	
8. Could there be a risk of engulfment?	
Is the area classified as a confined space? If you have answered Yes to question **1** and at least once for any questions afterwards (2, 3, 4, 5, 6, 7 or 8) the area is classified as a confined space. E.g. 1 + 4 = confined space	

1.1.1 WORKING IN ACCORDANCE WITH PROCEDURES

All confined space operations need to be conducted in accordance with procedures. Procedures exist to ensure that all work is completed in a way that is safe and achieves the required outcomes efficiently without causing harm to personnel/workers, equipment, the work area or the environment.

Procedures can include:

- Legislation.
- Compliance Code.
- Regulations.
- Environmental Protection Agency (EPA) guidelines.
- Licence and certification requirements.
- Permits and internal permit control systems.

- Australian Standards (AS 2865).
- Isolation techniques (mechanical and electrical).
- Atmospheric testing and action taken to provide safe entry to the confined space.
- Training and information provided to personnel/workers to determine that the situation is safe and work may proceed.
- Communication procedures in accordance with organisational requirements.

1.1.2 TRAINING AND COMPETENCY

All persons working in confined spaces, or carrying out associated tasks must be trained and assessed as competent to do so – including conducting rescue operations and operating breathing apparatus.

Confined spaces workers must be re-assessed regularly to maintain a sufficient level of skill and knowledge to carry out work in confined spaces.

Make sure you keep any records of training and competency assessment.

1.1.3 IDENTIFY REGULATORY AND WORKPLACE REQUIREMENTS

Prior to any activity being started, you will need to identify access and make sure you understand your legislative and workplace requirements and procedures.

This will ensure that all work that you complete will comply with the relevant requirements and follow the appropriate procedures.

You should be familiar with regulatory frameworks and workplace requirements, including:

- Occupational Health & Safety/Work Health & Safety (OHS/WHS) legislation, Compliance Code and guidance materials.
- International and Australian standards.
- Licence and certification requirements.

- Environmental protection requirements.
- Permit conditions, types and control systems required.
- Organisational policies and procedures that apply to the tasks and activities.
- Workplace procedures and work instructions.

Your work procedures and instructions may include complex Piping and Instrumentation Diagrams (P&IDs). These diagrams are like the 'road map' of the worksite. It is essential that you can read and interpret P&IDs when planning your work tasks.

Always remember when referencing Compliance Practice and Australian and International standards the latest version specified by the local regulatory authority must be used.

1.1.3.1 CONFIRM SCOPE AND LOCATION OF WORK

Your first step in planning the work and applying for a permit is to identify and confirm the scope and location of the work to be completed.

In order to confirm the scope (all of the activities that will be required to complete the job, as described on the permit to work), work out the objectives of the work in a broad sense, and then break down the work into the activities required to complete the work.

Be sure to take into consideration how the regulatory and organisational requirements will impact the activities, and how the requirements must be applied.

You may need to identify and determine:

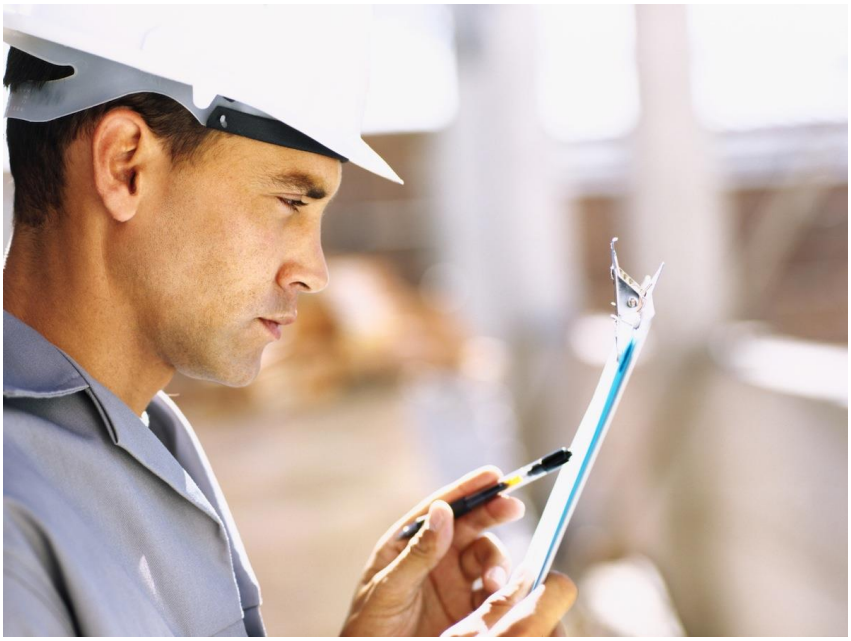
- The need for a work permit(s).
- Your OHS/WHS requirements and procedures, e.g. hazard identification and management requirements, safe working procedures, and Personal Protective Equipment (PPE) requirements.
- The steps you must take to protect the environment.
- The licensing requirements that you, and other personnel/workers must meet.
- How organisational and workplace procedures must be applied to complete the activities.

1.1.4 IDENTIFYING THE NEED FOR A PERMIT

Once you are familiar with the activities required to complete the work, you will be able to identify the need for a work permit.

Your organisational procedures will outline all situations where a permit is required. These procedures will reflect the regulatory requirements that apply in your industry and state.

Each industry and state will have specific requirements for work permits that must be followed. In some situations federal OHS/WHS requirements for permit works will also apply.



1.1.4.1 IDENTIFY TYPE OF PERMIT REQUIRED

Now that you recognise the need for a work permit, you will need to work out the type of permit required.

Permits are used when activities and tasks may be unsafe. Common types of permits could include:

- General/Cold work permit – issued for work that WILL NOT generate any source of ignition, such as flame, spark or temperature sufficient to ignite flammable material.
- Hot works permit – for any activities THAT MAY generate a spark or situation that could result in ignition of a fire.
- Excavation permit.
- Confined spaces permit.
- Vehicle entry permit – used when vehicle access to an area is not standard.
- Minor works or repairs permit.
- Work at heights permit – usually when working at heights of 2 or more metres.
- Other special permits.

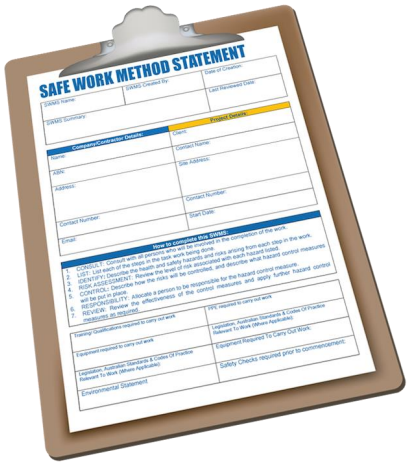
Each site will have a list of activities and tasks that require a permit. It is important you understand which tasks on your site require a permit. This will ensure that work is never undertaken without a permit, or without the correct permit.

An example of a general work permit has been provided in appendix 1B.

1.1.5 COLLECT REQUIRED INFORMATION

Before a permit can be issued, a range of information must be collected and collated. This information includes:

- Work descriptions.
- Safety equipment and materials.
- List of tools to be used.



- Job Hazard Analysis (JHA)/Job Safety Analysis (JSA)/Safe Work Method Statement (SWMS).
- Processes or methods of work, or standard operating procedures.
- Material Safety Data Sheets (MSDS).
- Hazard and risk analysis.
- Other site-specific information.

Each site will have a list of information that needs to be supplied at the time of applying for a work permit.

Before submitting the required information to the issuing officer for a work permit, double check that you have collected and collated all the required information.

1.1.6 APPLY FOR A PERMIT

Once you have identified the need for a permit and the type of permit required, and collated all the required information for the permit, you will need to apply for the permit.

Correct procedures for applying for a permit may vary depending upon the type of permit required and your site and organisational requirements.

You will normally have a form that needs to be completed and submitted to the permit issuer. However, always be guided by the requirements of your organisation.

This permit issuer will normally be your site safety officer, but could also be a site project manager, supervisor or other designated person.

1.1.7 CHECK WORK COMPLIES WITH PERMIT TYPE

All work must comply with the type of permit issued.

Check that the work to be done and activities to be completed comply with the permit that you are applying for.

As already discussed, it is essential that you are familiar with the different types of permits so that the work is not carried out with the incorrect permit.

When checking that the work complies with the type of permit, you may need to access and use documents such as:

- Workplace procedures.
- Work instructions.
- Temporary instructions.

Each site must have an internal permit control system.

This system is normally managed by the OHS/WHS officer on the site.

Always double check that the tasks and activities you are going to be undertaking comply with the internal permit control system for your site.

1.1.7.1 CHECK SCOPE AND LOCATION

When checking that the work complies with the type of permit, you will also need to check that the scope and location of the work complies with the conditions on the issued permit.

If you have any doubts whether the work to be done, or the scope and location of the work complies with the type of issued permit, speak with the issuer of the permit to confirm.

1.1.8 CHECK HAZARD CONTROLS

Before starting activities, you will need to ensure the hazard controls specified on the permit are appropriate to your situation and reflect the conditions found in the hazard analysis.

Hazards and their controls to be used may be documented in a hazard report form. An example can be found in Appendix 1C.

1.1.8.1 HAZARD ANALYSIS

A hazard analysis will have been completed in the preparation for applying for a permit. The analysis will have identified all hazards associated with the tasks and activities to be conducted, and the permit will have been issued with clear instructions on how to control these hazards.

Common hazards dealt with by permits could include:

- Atmospheric hazards such as heat, smoke, dust or airborne contaminants.
- Obstructions, protrusions or sharp edges within the working environment.
- Spills and leaks.
- Hazards specific to chemicals.
- Environmental restrictions such as limited headspace, overhangs or abutments.
- Product, tools or equipment weight or dimensions.
- Slippery or uneven surfaces.

- Noise.
- Vibrations from required plant or equipment.
- Rotational equipment.
- Process hazards.
- Environmental hazards.
- Other site-specific hazards.

Hazardous Materials

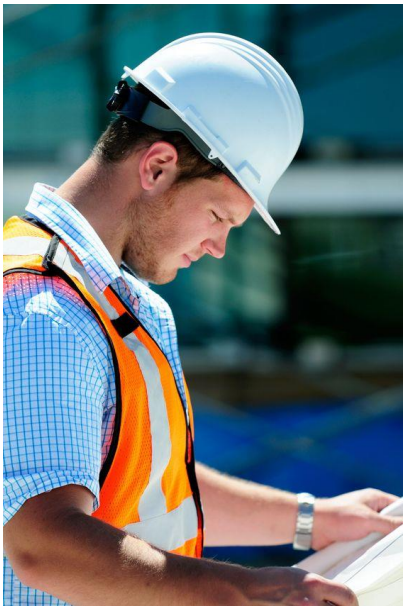
Hazardous materials could be any substance that is listed as dangerous goods, which could be toxic, corrosive, flammable or radioactive.

Always check the hazards found in the environment are listed on the hazard register and the permit.

If you find new hazards that are not listed on the permit, you need to suspend activities and speak with the permit issuer to determine the course of action.

Normally this will include the issuing of a new permit that accounts for the new hazards.

1.1.8.2 HAZARD CONTROLS



As part of the hazard analysis procedures, hazard controls will have been developed and documented to manage the identified hazards.

You will need to compare the hazard controls documented in the hazard analysis with those specified in the permit to ensure that they are consistent.

Any inconsistencies found must be brought to the attention of the permit issuer or other relevant personnel/workers.

1.1.8.3 CHECK DOCUMENTATION

Once a hazard has been identified, check for any existing procedural documentation, workplace procedure or workplace policy which describes how to eliminate or control the hazard.

It is important that all records, policies and procedures are kept up to date so that the most relevant information is available and used.

Talk to other workers, your manager, supervisor, team leader or health & safety representative to find out if the hazard has already been identified, and what techniques are available to you to resolve it.

1.1.8.4 HAZARD CONTROLS

Hazard treatment involves selecting one or more options to control or eliminate a hazard and then implementing the selected option/s. Hazard treatments should be recorded in accordance with site and organisational procedures.

The most important defence against respiratory hazards is to control the contamination at its source and prevent it from entering the air.

This can be done by either substituting dangerous substances with less hazardous ones (particularly where chemicals are used), by isolating or enclosing hazardous operations, or by providing adequate local exhaust ventilation.

However, in some situations it may be necessary to wear breathing apparatus.

This may be because it is not immediately practical to implement alternative measures, or because access to a contaminated area is needed for a short period. In addition, breathing apparatus may need to be worn in some emergency situations.

It is also essential that any workplace that requires breathing apparatus also includes air monitoring. Respirators of different types are suitable for atmospheres of specific concentrations only. If the concentration exceeds a certain level, a different type of respirator will be necessary.

1.1.8.5 CONSIDER HAZARD CONTROL STRATEGY OPTIONS

Once a hazard control option has been implemented it may be referred to as a risk control.

The Hierarchy of Hazard Control is the name given to a range of control methods used to eliminate or control hazards in the workplace. The Hierarchy has 6 levels.

It is important that you understand what each level in the hierarchy stands for and how they can be implemented:

1. Elimination	Completely remove the hazard. This is the best kind of hazard control.
2. Substitution	Swap a dangerous work method or situation for one that is less dangerous.
3. Isolation	Isolate or restrict access to the hazard.
4. Engineering Controls	Use equipment to lower the risk level.
5. Administrative Controls	Site rules and policies attempt to control a hazard. Includes Safe Work Practices.
6. Personal Protective Equipment	The least effective control. Use PPE while you carry out your work.

Hazards should be re-assessed after the implementation of control measures to make sure they are effective and it is safe for the work to continue.

Follow all appropriate standards when deciding hazard control strategies including:

- Codes of Practice.
- Legislation.
- Australian Standards.
- Manufacturers' specifications.
- Industry standards (where applicable).

It is important to consider all of the options available when deciding on the best course of action.

Not all options are feasible or possible under some circumstances.

You may need to use a number of control strategies in conjunction to reduce the risk to an acceptable level.

The risk treatment plan should clearly identify the order in which to implement the individual risk treatments.

Some important hazard controls for working in a confined space include:

- Placing a standby person outside the confined space to respond in an emergency.
- Placing barriers and safety signs to stop unauthorised entry.
- Isolation, tagging and lockout procedures for liquid, gas, electric current or other stored energy.
- Purging gases and ventilation.

If work is planned to be done in pipelines normally used to carry liquids to a confined space (such as a boiler or fuel tank), it must be blanked off with suitable material to prevent the pipeline being used while work is being carried out.

It is not enough to just turn off a valve where the system is still live.

Document any hazards you find and the hazard controls you implement in a Job Safety Analysis (JSA) or Safe Work Method Statement (SWMS).

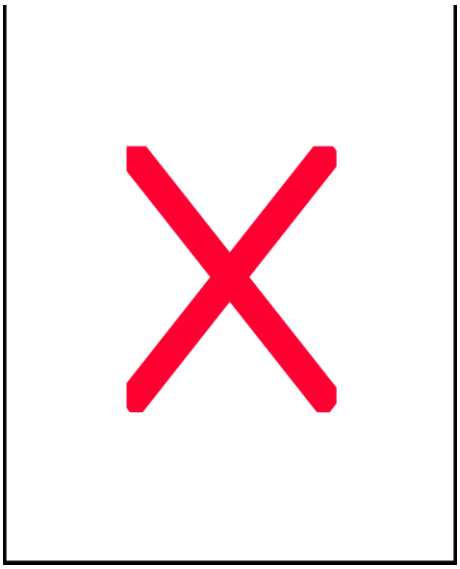
1.1.9 CHECK THAT PREPARATIONS HAVE BEEN COMPLETED

Once you have made sure that the hazard controls specified on the permit are consistent with the hazard analysis, you will need to ensure that all necessary preparations have been completed in accordance with permit requirements.

Some of the steps for preparation that may be specified on the permit could include:

All preparation requirements of the permit will be listed on the permit. You must ensure that these requirements have been met.

1.1.10 SIGN ONTO/RECEIVE THE PERMIT



After the permit is approved and issued, you will need to sign onto the permit.

Signing onto the permit shows you know and understand what is required by the conditions of the permit and that you are prepared to follow all directions and requirements of the permit.

If you do not understand or agree with anything in the permit, discuss it with the permit issuer before signing onto or formally receiving the permit.

The process for formally accepting or signing onto the permit may vary according to the:

- Type of permit.
- Organisation or site requirements.
- Legislative and regulatory requirements.
- Licensing requirements.
- Supervisory requirements.

At all times confirm the requirements for formally signing on or receiving the permit and ensure you understand all aspects covered by the permit.

APPENDIX 1A – WORK HEALTH & SAFETY COMMON TERMS AND DEFINITIONS

Person Conducting a Business or Undertaking (PCBU)	A 'person conducting a business or undertaking' (PCBU) replaces the term 'employer'. A PCBU includes all employers, sole traders, principal contractors, unincorporated associations, partnerships and franchisees. Volunteer organisations that also employ people will be PCBUs. A PCBU's primary duty of care is to ensure the health and safety of everyone in the workplace, so far as is reasonably practicable.
Officers	An 'Officer' is a person who makes, or participates in making, decisions that affect the whole or a substantial part of a corporation. This includes Health and Safety Representatives (HSR).
Workers	'Worker' replaces the term 'employee'. It is defined broadly to mean a person who carries out work in any capacity for a PCBU. A 'worker' covers employees, contractors, sub-contractors (and their employees), labour hire employees, outworkers, apprentices, trainees, work experience students and volunteers.
Reasonably Practicable	Reasonably Practicable is defined as action that is, or was at a particular time, reasonably able to be done to help ensure health and safety based on the following factors: a) Chances of the hazard or risk occurring (likelihood). b) The degree of harm (consequence). c) The knowledge of persons involved in the situation relating to the hazard or risk and methods of eliminating or controlling it. d) The availability and suitability of ways to eliminate or control the hazard or risk. e) The costs involved in taking action to eliminate or control the hazard or risk including consideration of whether the cost involved is inconsistent to the level of risk.
Due Diligence	The Work Health and Safety Act 2011 (the WHS Act 2011) imposes a specific duty on officers of corporations to exercise due diligence to ensure that the corporation meets its work health and safety obligations. In short, they have a responsibility to ensure that the PCBU is doing everything it should to ensure health and safety. The duty requires officers to be proactive in ensuring that the corporation complies with its duty. Due diligence may be demonstrated through the following courses of action: 1. Acquiring knowledge of health and safety issues. 2. Understanding operations and associated hazards and risks. 3. Ensuring that appropriate resources and processes are used to eliminate or minimise risks to health and safety. 4. Implementing processes for receiving and responding to information about incidents, hazards and risks. 5. Establishing and maintaining compliance processes. 6. Verifying the provision and use of the resources mentioned in 1-5.

APPENDIX 1B – EXAMPLE WORK PERMIT

Location Of Work: _____

_____

Description Of Work: _____

_____

CONTROL MEASURES

ISOLATION

Space needs to be isolated from: _____

	Location/Method
Water	
Gas	
Steam	
Chemicals	
Mechanical	
Electrical drives	
Auto fire extinguishing systems	
Hydraulic	
Electric	
Gas	
Power	
Sludge	
Deposits	
Wastes	

Lock and/or tags have been affixed to isolation points: Yes ☐ No ☐

ATMOSPHERE

The atmosphere has been tested:

Results of tests:

Oxygen: _____ % Flammable gases: _____ % LEL

_____ % LEL

Other gases: _____ ppm (less than ppm)

_____ ppm (less than ppm)

Other airborne contaminants: _____

_____

_____

The conditions for entry are as marked below:

1. With supplied air breathing apparatus: Yes ☐ No ☐
2. Without respiratory protection: Yes ☐ No ☐
3. With escape unit: Yes ☐ No ☐

HOT WORK

Area clear of all combustibles including atmosphere: Yes ☐ No ☐

Type of appropriate fire prevention equipment available:

_____

_____

_____

Suitable access and exit: Yes ☐ No ☐

Hot work is permitted: Yes ☐ No ☐

PERSONAL PROTECTIVE EQUIPMENT

The following safety equipment must be used:

	Type
Respiratory protection	
Harness/lifelines	
Eye protection	
Hand protection	
Footwear	
Protective clothing	
Hearing protectors	
Safety helmet	
Communication equipment	
Other	

OTHER PRECAUTIONS

Warning notices/barricades: Yes ☐ No ☐

All persons have been trained: Yes ☐ No ☐

Is continual air monitoring required: Yes ☐ No ☐

Detail any other precautions necessary:

EMERGENCY RESPONSE

Procedures/Equipment:

STANDBY PERSON

Standby personnel/worker requirements:

AUTHORITY TO ENTER WORK AREA

The control measures and precautions appropriate for the safe access and execution of the work have been implemented and persons required to complete the work have been advised of and understand the requirements of this written authority.

Signed *(person in direct control)*: _____

Date: _____ Time: _____

This written authority is valid until: _____

Date: _____ Time: _____

PERSONS AUTHORISED TO CARRY OUT WORK

I have been advised of and understand the control measures and precautions to be observed while completing the required tasks.

Entry			Exit		
Name	Date	Time	Name	Date	Time

WITHDRAWAL OF WRITTEN AUTHORITY

All persons and equipment accounted for: Yes ☐ No ☐

Equipment checked and stored correctly: Yes ☐ No ☐

Signed *(person in direct control)*: _____

Date: _____ Time: _____

Remarks or comments about the work:

_____

_____

APPENDIX 1C – HAZARD REPORT FORM

Company Name:	Form Completed By:	Date of Inspection:
Site:	Address:	Contact Phone Number:

1. Identified Hazard	Hazard Type:
2. Hazard Details	Description of Hazard:

LIKELIHOOD	CONSEQUENCE				
	Insignificant	**Minor** First Aid Required	**Moderate** Medical Attention and Time Off Work	**Major** Long Term Illness or Serious Injury	**Severe** Kill or Cause Permanent Disability or Illness
Almost Certain	**M**	**H**	**H**	**VH**	**VH**
Likely	**M**	**M**	**H**	**H**	**VH**
Possible	**L**	**M**	**H**	**H**	**VH**
Unlikely	**L**	**L**	**M**	**M**	**H**
Rare	**L**	**L**	**M**	**M**	**M**

RISK LEVEL	ACTION
VERY HIGH	Act immediately: The proposed task or process activity must not proceed. Steps must be taken to lower the risk level to as low as reasonably practicable using the hierarchy of risk controls.
HIGH	Act today: The proposed activity can only proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk controls must include those identified in legislation, Australian Standards, Compliance Code etc. 3. The risk assessment has been reviewed and approved by the Supervisor. 4. A Safe Working Procedure or Safe Work Method has been prepared. 5. The supervisor must review and document the effectiveness of the implemented risk controls.
MEDIUM	Act this week: The proposed task or process can proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk assessment has been reviewed and approved by the Supervisor. 3. A Safe Working Procedure or Safe Work Method has been prepared.
LOW	Act this month: Managed by local documented routine procedures, which must include application of the hierarchy of controls.

3. Risk Assessment	Risk Likelihood Level:	Risk Consequence Level:	Risk Level:
	Is there an existing safety system or procedure that deals with this hazard? Yes / No Details:		

4. Control Strategies	Intended Control Strategy (Details and Resources Required)	Tick Box
	Elimination	
	Substitution	
	Isolation	
	Engineering	
	Administration	
	PPE	

Is the control strategy feasible? Yes / No

5. Action Plan	Has a plan for the implementation of the control strategy been completed?	
	Have the required resources been obtained?	
	Does the implementation meet the requirements of workplace policies and procedures?	
	What is the intended date of implementation?	_____/_____/_____
	Who is responsible for implementing the control strategy?	
	Date of review of action taken:	_____/_____/_____
6. Review	Date of Review:	_____/_____/_____
	Review completed by:	
	Has the hazard control been successfully implemented?	
	New risk level:	
	Is this risk level acceptable?	
	Further action required?	

1.1.11 PREPARE SAFE WORKING CONDITIONS

In order to maintain safe working conditions while working, you will need to prepare the workplace effectively.

Procedures that you use to prepare the workplace will vary depending upon the type of task to be conducted, the environmental conditions and the equipment used. However you might need to apply the relevant:

- Environmental controls.
- Isolation procedures.
- Site specific or task specific requirements.
- Safety equipment.
- Emergency or incident response procedures.

Ensure that you are aware of the correct procedures for applying the relevant safety controls.

You may find these procedures in the relevant legislation and regulations, workplace policies and procedural documents, and equipment operator's manuals.

Part of your preparation procedures could include completing atmospheric testing, or ensuring that atmospheric testing has been completed and the results confirmed as safe (or that adequate measures are in place to control the hazards and risks).

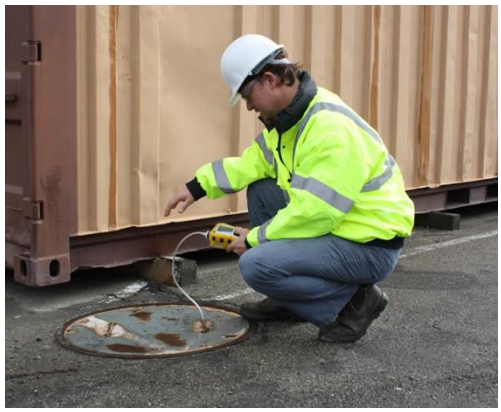
Common types of tests required may include:

- Atmospheric/oxygen/breathability.
- Flammability/explosivity.
- Toxicity/Time Weighted Averages (TWA).
- Temperature.
- Humidity.

The conditions of the permit will list all required testing and monitoring requirements and the frequency of these tests. Always be guided by the conditions and requirements of the permit.

If you must perform atmospheric testing you will need adequate numeracy skills.

These skills should help you to tell between high and low pressures, high and low temperatures, voltages and masses.



Ensure that you communicate with all personnel/workers and inform them of their work activities and the safety measures that have been applied.

If they agree that all appropriate controls and measures have been taken they should agree that all is as safe as possible and that it is appropriate to proceed.

1.1.11.1 INCIDENT RESPONSE PROCEDURES

As part of preparing for your work you should check the permit for any emergency/incident response procedures and preparations that should be made before work commences.

Emergency/incident response information that may be on the work permit could include, but is not limited to:

- The location and use of rescue and emergency equipment.
- The role of personnel/workers during an incident.
- Procedures for responding to the emergency, including the contact of authorised personnel/workers or exterior services.

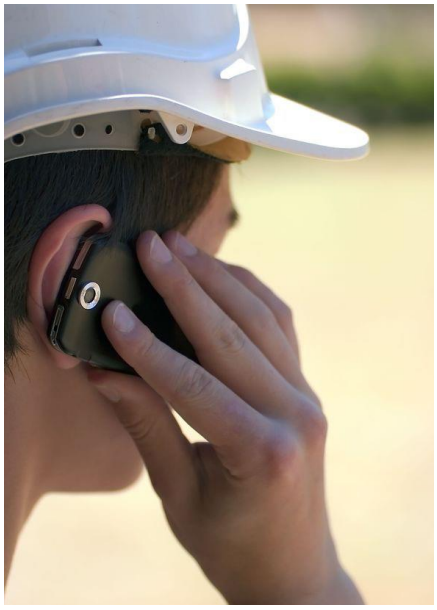
By being aware of what equipment you should have in place and the actions you should implement if there is an emergency during the permit work you will be better able to respond.

1.1.11.1.2 SUMMONING FIRST AID HELP

In the case of an emergency where somebody requires first aid, notify your supervisor or first aid officer and they will take action.

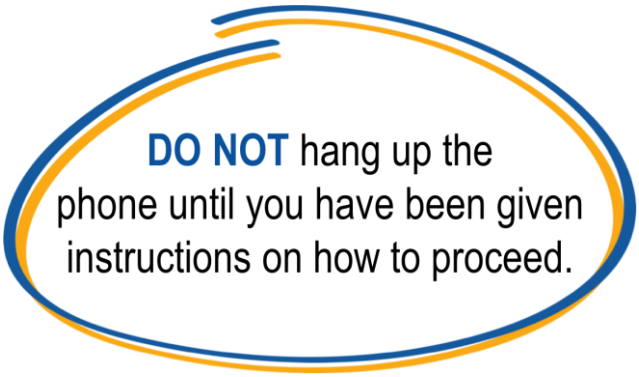
Depending on the type and severity of injuries it may also be necessary to summon an ambulance.

If you are required to call for an ambulance it is important that you provide the required information.



When calling emergency services (dial 000) let the operator know the following details:

- Where the emergency is – the exact address of the emergency.
- What has happened – the type of injuries the person has and how they were sustained, e.g. an injured leg after falling down stairs.
- What is being done to address the emergency – has some first aid been given, if so, what.
- Your name and the number you are calling from in case the call is dropped.



You should always follow the procedures for summoning first aid following your organisations emergency response plan.

1.1.12 MONITOR CONDITIONS AND HAZARDS

Tasks and activities that require a permit will have inherent risks and hazards.

To ensure the safety of all personnel/workers working on the site, and to ensure the conditions of the permit are continually met, you need to monitor the work site and conditions:

- Prior to work commencing.
- During the work.

Commonly, you will need to monitor plant conditions and the hazards in the local environment to ensure all work activities under the permit will remain as safe as possible.

By continually monitoring the conditions and hazards that may be present, you will be able to respond quickly to any developing situation and ensure the safety of all personnel/workers.

1.1.13 USE SAFETY EQUIPMENT AND CLOTHING

Any safety equipment and clothing designated by either the permit conditions or the standard procedures for the activities being undertaken will need to be selected and donned before commencing work.

Commonly required safety equipment and clothing could include:

- Eye protection (e.g. goggles).
- Ear protection.
- Clothing.
- Helmets.
- Gloves.
- Respiratory protection.
- Safety footwear.

You must ensure you are using the most appropriate safety equipment and clothing at all times.

If the clothing or equipment is not available for any reason, you will need to suspend tasks and activities until the equipment is available.

All clothing and equipment must be worn and used in accordance with manufacturer's instructions and directions and the procedural requirements for your site.

1.1.14 INSPECT THE WORK AREA

Before starting to work you will need to inspect the area to ensure the planned tasks and activities will comply with both safety requirements and the requirements of the permit.

You should be ensuring that all work done will meet these needs and that all equipment and tools to be used are listed on the permit or the associated standard procedures for the tasks.

You will also need to check once again that new hazards have not developed, and that hazard controls are in place and in compliance with the permit requirements.

Any variation or non-compliance with either site and organisational safety requirements or the stated requirements of the permit should be documented.

Suspend all activities until the conditions of the procedures, policies and permit are able to be met.

1.1.15 COMPLY WITH PERMIT REQUIREMENTS

Once work has commenced, all requirements for the permit will need to be complied with and all operations, tasks and activities performed in accordance with the standard operating procedures that apply.

1.1.15.1 USE A SAFETY OBSERVER

One of the common permit requirements for some tasks is the requirement for a safety observer.

A safety observer is a designated person who is responsible for the safety of all people and situations within the tasks.

If your permit requires a safety observer it will be outlined on the permit.

If an observer is necessary, you may not commence or continue any activity unless the observer is present.

1.1.15.2 USE HAZARD REDUCTION AND CONTROL MEASURES

A large part of the permit process is the identification and control of hazards. Each permit will have a list of the required hazard reduction and control measures that must be applied to the tasks and activities being undertaken.

Once work has commenced you will need to ensure that the required hazard reduction and control measures are being applied consistently and effectively.

Not complying with these requirements will invalidate the permit immediately, and can risk the safety of yourself and other personnel/workers.

If at any time you recognise new hazards, faults with plant or hazard control measures that are no longer effective it is essential that you take appropriate steps to rectify the situation.

If the problem is within your level of training and ability, you can take action to resolve it. Otherwise you may need to report it immediately to relevant personnel/workers.

Always read the permit and note the hazard reduction and control measures that are required. It is vital you understand the hazard reduction and control measures, and can apply them throughout the work activities as required.

1.1.16 DISPLAY PERMIT

Work permits that cover the activities being completed must be available on the worksite at all times.

Depending on the needs of the task, the permit conditions and the organisational requirements this could mean:

- Displaying the permit at all times in a mounting on a gate, fence, sign-in point or other designated location.
- Having the permit stored onsite in a readily accessible folder.
- Having the permit folded in an overall pocket in a manner that allows it to be readily shown on request.

Each permit will have its display requirements clearly outlined on the permit.

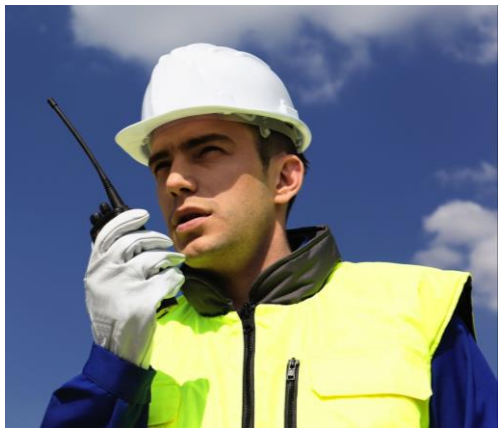
Always check before, during and at the completion of the tasks and activities to ensure the permit is being displayed in accordance with the requirements.

1.1.17 COMPLY WITH SCOPE, LOCATION AND TIMEFRAMES

At all times during work activities you must ensure compliance with the scope, location and timeframes specified in the permit.

Other permit requirements you may need to comply with could include:

- Communications.
- Equipment and tools.
- Hazard identification and response.
- Developing situations.
- Documentation requirements.



Work permits are not flexible and are issued only for specific times, locations and tasks.

Any non-compliance to the scope, location and timeframes specified, as well as other requirements, will result in the permit being revoked.

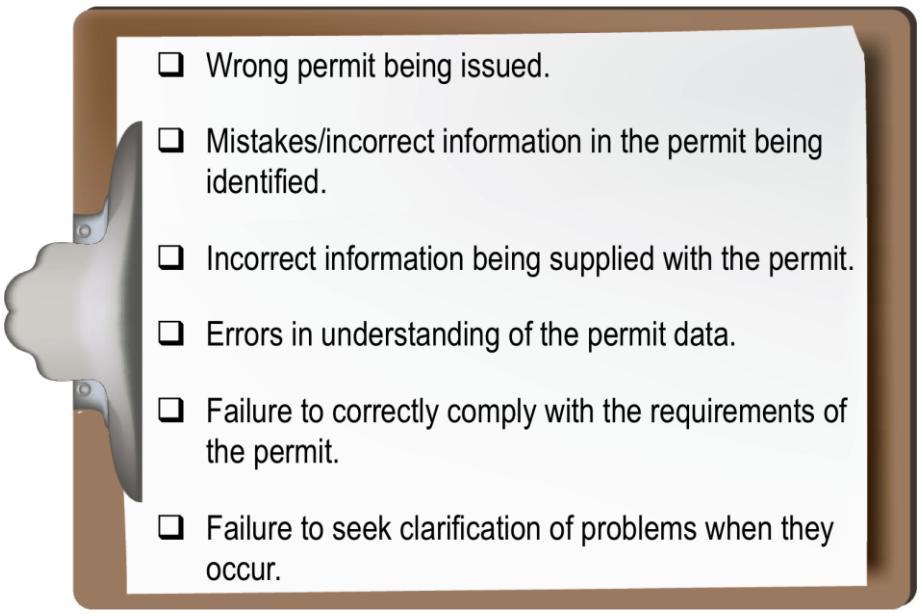
At all times, you need to be guided by the requirements stated on the work permit and keep these requirements in mind during work.

1.1.18 SUSPEND WORK ACTIVITIES

Work on the site may be suspended for a variety of reasons such as:

- End of shift.
- Exceeded permissible timeframes for the permit.
- New hazards identified.
- Other problems arising onsite.

Commonly encountered problems could include:

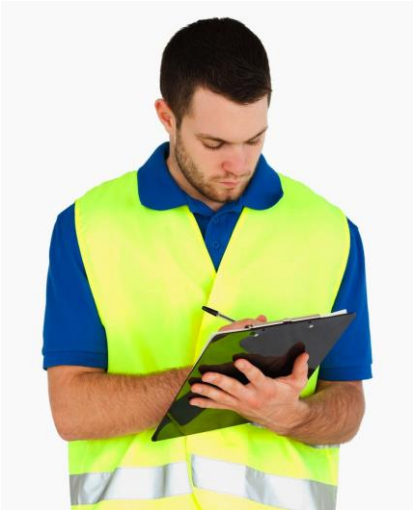


The process used by your workplace or organisation for suspension of the permit will be detailed on the permit. It is vital you check the process for suspending the permit before you commence your tasks.

Once activities are suspended the site must be left in a manner that is safe and secure. This will include ensuring all tools and equipment are stowed in accordance with requirements, and that rubbish is disposed of or recycled correctly.

1.1.19 SEEK AUTHORISED EXTENSIONS

Not every task or activity will go to plan. Sometimes it will be necessary for you to seek an extension to the permit. Extensions to permits must be completed in accordance with your site and organisational procedures.



Normally these procedures will require a written request stating:

- Why the extension is needed.
- What caused the need for an extension.
- Any factors that have changed which may invalidate the permit.
- Anticipated changes to activities.

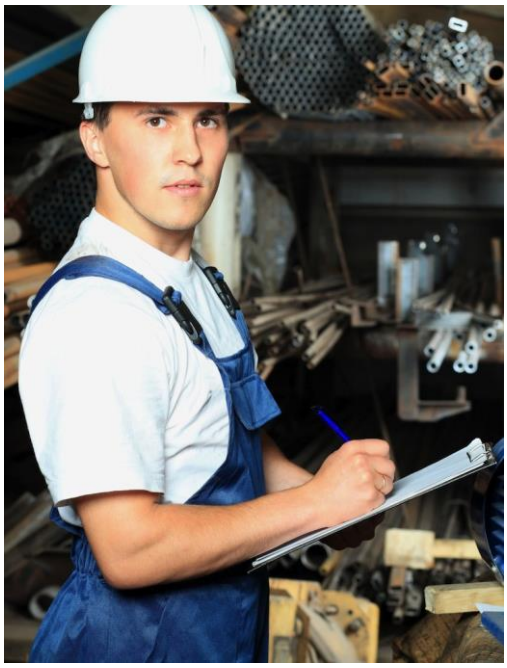
The process for applying for an extension to the permit will be either on the permit, or in the documentation that guides you through the process of applying for a permit.

You must identify the correct process for your organisation and site.

For further advice on how to apply for an extension to the permit, contact the permit issuer. – they will be able to guide you further.

If the request for an extension is granted, you will need to note this extension in the task and activity documentation.

1.1.20 PROVIDE STATUS REPORT



At the end of each day, you will need to give the permit issuer a status report. The status report should include:

- Tasks completed.
- Outstanding activities.
- Anticipated or estimated completion times.
- Anticipated variances with the permit conditions.
- Compliance status or problems.
- Problems arising and solved during the shift.
- Equipment requirements.
- Personnel/workers issues or requirements.
- Other site required information.

At all times, you need to keep the permit issuer informed of the status of the tasks and activities being completed.

Most sites will have a formal process for providing status reports that includes a list of the information required.

1.1.21 OBTAIN RE-VALIDATION OF PERMIT

New permits will need to be issued whenever work activities need to recommence after a break of longer than a meal break. In some cases, you will be able to have the previous permit re-validated, but often you will need to get the permit re-issued.

Permits will need to be re-authorised or re-issued when:

- There is any change to work undertaken.
- The work situation changes.
- There is a gap in work continuity.
- The permit requires it.
- Other site rules require it.
- Other reasons.

Other reasons could include:

- Environmental changes
- Atmospheric testing or monitoring changes
- Changes to work schedules
- Personnel/workers changes

Work situations may change due to a number of factors, such as:

- Scope or urgency of the work changes.
- Identification of new hazards.
- Incidents or accidents.
- Equipment and tool requirements change.
- Environmental changes such as weather, temperature, wind.
- Atmospheric testing or monitoring changes or concerns.
- Personnel/workers changes.

The process of getting a work permit re-issued is the same as for getting the permit issued in the first place. Undertake a risk assessment, identify hazard controls and apply for the permit.

A work permit will need to be suspended or cancelled when conditions change or new hazards are identified. Any change in conditions will lead to the permit being revoked before the job is complete.

Once the permit has been revoked you will need to identify the changes that have occurred and re-apply for a permit that takes into account these changes.

1.1.22 CHECK WORK AGAINST PERMIT

Once you have completed all tasks and activities, you need to check that all requirements have also been completed.

Check the permit and ensure all nominated work requirements have been completed satisfactorily. Look at each task on the permit and compare it to what has been completed.

If each task and activity has been completed to the standard as outlined on the permit, you have satisfied the requirements of the permit.

Some organisations will use a checklist that is completed as tasks are finished, while other organisations will have you complete a final check.

Regardless of how the check is conducted, you need to ensure that all conditions and requirements have been met.

While checking the permit conditions have been met, you should also be checking to ensure all activities and tasks are completed to the standard required by your workplace.

1.1.23 APPLY HOUSEKEEPING REQUIREMENTS

Once all activities and tasks are completed on the site, you need to ensure the site is clean, clear, and left in a safe condition. This process is called site housekeeping. The requirements for how the site is to be left should be outlined in the:

- Site waste management plans, policies and procedures.
- Site clean up documentation.
- Permit conditions and requirements.
- Activity procedures and plans.

Always ensure the site is left in a condition that is safe. This may include:

- Barricading or fencing open trenches, pits and holes, if they can't be filled.
- Ensuring no exposed edges.
- Ensuring signage is correct.
- Other requirements as dictated by workplace procedures and permit conditions.

When unattended, sites must be left in a condition that is clean and safe.

1.1.24 REMOVE LOCKOUT AND ISOLATION DEVICES

Any isolation or lockout devices that have been applied will need to be removed in accordance with site and organisational procedures, as well as equipment manufacturer's specifications. These devices could include:

- Lock out appliances and devices.
- Tag outs.
- Isolation devices.
- Other site approved devices.

Commonly, these devices will only be removed after the item has been checked, repaired, maintained or serviced by an accredited or licensed technician.

Isolation and lockout devices are used on equipment that is not fit for use. Therefore it is vital you do not remove these tags and devices until you are sure the item can be safely and effectively used.

Each site could have different procedures for removal of these tags and devices. It is vital you understand the requirements and procedures that must be applied before the device can be removed.

1.1.25 COMMUNICATE STATUS OF WORK

Once all activities have been completed, you will need to communicate the status of the work and the results of the permit to the appropriate personnel/workers.

Personnel/workers that you may need to communicate this information to include:

- Permit issuing officer.
- Site safety officer.
- Team members.
- Supervisors.
- Others as designated by workplace management plans.

1.1.25.1 EFFECTIVE COMMUNICATION

Effective communication is essential when communicating the status of the work and permit to personnel/workers. This is also equally relevant when conducting work tasks in order to meet permit requirements.

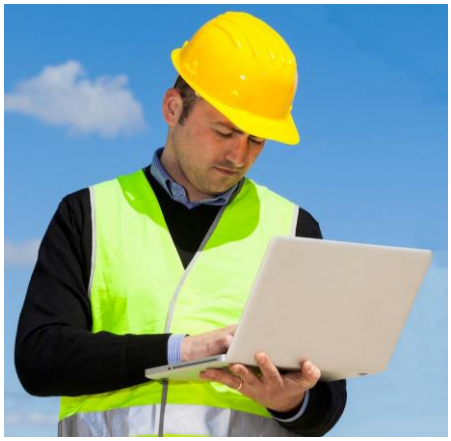
When communicating with other personnel/workers, either during or after completion of tasks, it is essential that you:

- Speak clearly and succinctly – that is, to the point.
- Describe complex information to the listener in a way that ensures they understand, e.g. breaking information down, simplifying information, explaining further as required.
- Listen to the responses given, and provide clarification as necessary.
- Use all communications equipment appropriately, following the required procedures and protocols.

Each permit will have detailed instructions concerning whom you must communicate with during activities and post-completion.

Always check with the permit to ensure you are aware of whom you need to communicate with, at which stage in the process.

1.1.26 COMPLETE DOCUMENTATION



Once all activities have been finished, final documentation will need to be completed, this should include:

- Documentation relating to equipment used.
- Equipment recovery and maintenance records.
- Workplace checklists or forms.
- Other site or organisation required records.

In order to complete documents and forms you will require adequate writing skills.

These skills will include the ability to write clearly and legibly.

Ensure that you complete all documentation within the designated timeframes and to the required standards, and follow the workplace procedures for submitting, filing or storing the documents.

Once all documentation has been completed you are able to have the permit signed off, and surrender the permit to the issuer if required.

1.2 GATHER INFORMATION AND DETERMINE OPERATIONAL PLAN

It is vital that accurate and up-to-the-minute information is collected before rescue operations can commence.

Trying to carry out a confined space rescue without knowing exactly what has happened and where casualties are located can put both the rescue team and the person/s in need of help in great danger.

1.2.1 OBTAINING AND ANALYSING RESCUE OPERATION INFORMATION

You will need to know the type of incident that has occurred and the magnitude or severity of the event.

You will also need to know the number of people in need of rescue and the type and degree of any injuries.

This will help you to decide what size rescue team you will need, what equipment they will need to use, what hazard controls to implement and what first aid/emergency services will need to be ready to deal with any casualties.

You will need accurate knowledge of the location of the incident and of every person needing help. This is essential in planning a rescue strategy.

A thorough examination of the incident scene will need to be undertaken to determine information such as access and egress routes, potential hazards and environmental conditions.

Weather conditions are an important consideration, so make sure you have accurate forecasts in order to deal with changing circumstances.

Sources of information may include:

- Emergency procedures.
- Standard Operating Procedures (SOPs).
- Maps.
- Global Positioning Systems (GPS).
- Vehicle tracking systems.
- Navigational systems.
- Field reports.

- Communications technology equipment.
- Oral or written communication.
- Evacuation procedures.
- Relevant Australian or international documentation in disaster/emergency management.
- Organisational and workplace operating procedures and policies.
- Personal and work area work procedures and practices.
- Occupational Health & Safety/Work Health & Safety (OHS/WHS) procedures.

1.2.2 DETERMINING AN OPERATIONAL PLAN

It is important to have an adequate operational plan in place before attempting a rescue.

This will help make sure that all information has been gathered and that everyone involved in the rescue knows exactly what needs to be done, when to implement actions and what possible changes in circumstances may occur.

An operational plan may also include information relating to:

- Aims and objectives of the rescue.
- Number and condition of casualties.
- Potential operating area.
- Other agencies whose involvement may be required such as emergency services.

- Rescue strategies and techniques appropriate to the situation.
- Priority of tasks.
- Equipment required to perform the rescue.
- Resources available to the rescue team.

- Time constraints.
- Possible tactics to implement strategies.
- Command, control and co-ordination arrangements.
- Resources required including their availability.
- Reconnaissance techniques.

- Hazards and hazard controls.
- Terrain and environmental information.
- Access and egress routes.
- Emergency rendezvous points.
- Limitations of strategies and equipment.

- Weather forecasts.
- Variables (e.g. weather, casualty status).
- Contingencies and alternatives to deal with changing circumstances.
- Monitoring and evaluative procedures.
- Reporting requirements.

Command, control and coordination arrangements will need to be determined before a rescue is attempted.

Everyone involved in the rescue operation will need to understand what is required of them, including those being rescued.

Changes in conditions and operational procedures will need to be communicated to all personnel/workers including other organisations involved in the rescue (e.g. emergency services).

1.2.3 CONFIRMING TEAM ROLES

Depending on the situation, there may be a number or roles that need to be filled in a worksite in relation to working in confined spaces.

For example, when working onsite in small work groups, workers may need to perform several tasks or roles during a rescue operation.
The standby person may be coordinating communications and be facilitating first aid when the injured person is extracted.
The role titles may vary depending on the worksite, industry and the number of personnel involved in the rescue operations. These may include, but not limited to, the following:

- Rescue team leader or supervisor (in charge of the entire situation).
- Standby person.
- Rescue team member.

It is important that you understand the requirements and responsibilities of your role.

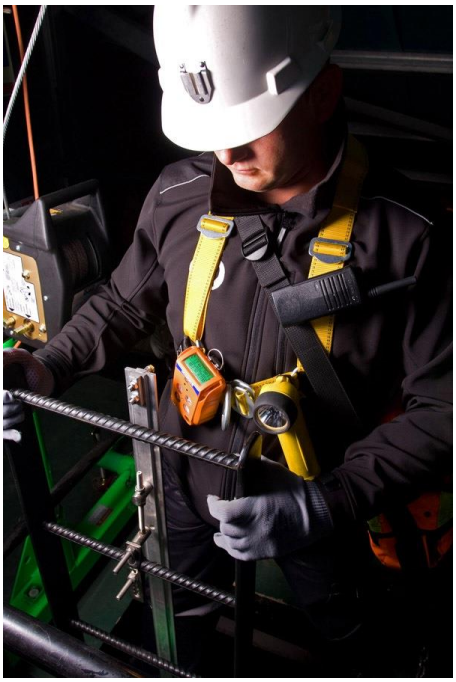
If you are unsure about anything talk to your supervisor or team leader.

External organisation or team that may be involved in the confined space rescue operation may include:

- Emergency services.
- Fire fighters
- Police

1.3 SELECT AND CHECK EQUIPMENT

The equipment you use while working in a confined space will depend upon the tasks you are required to undertake and the controls and strategies you are going to put in place.



These may include:

- Safety equipment.
- Rescue equipment.
- Atmospheric testing equipment such as portable gas detectors and monitors.
- Communication devices.
- Tools and equipment relevant to the work to be performed.

Torches and communication equipment should be safe to use in a confined space.

1.3.1 RESCUE EQUIPMENT

Once you have the details of the situation you will be able to select appropriate rescue equipment. This may include:

Life rescue line
Ropes/tapes

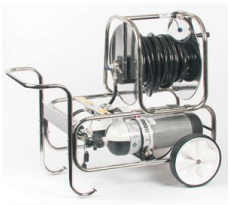
Escape sets and harnesses

Tripods/edge management

Lifters/stretchers

Hauling systems

Communications equipment



Airline equipment

Atmospheric monitoring equipment

Isolation equipment

Harnesses

Self-contained breathing apparatus (SCBA)

Ventilation equipment

Once you have selected the rescue equipment required for the rescue operation, you need to check that it is in safe working order. Check all equipment in accordance with the manufacturer's specifications and organisational policies and procedures.

Operator's manuals may contain information on pre-use checks and calibration techniques that may need to be conducted before the equipment can be used.

1.3.2 COMMUNICATION EQUIPMENT

Communication equipment can include mobile phones or two-way radios. Fixed frequency two-way radios are a system that stops other radios using a selected frequency.

Make sure communications with other personnel/workers on site is established and is able to be maintained throughout the rescue operation.

This enables you to work as a team and warn other rescue personnel/workers of any hazards that arise throughout the operation.

If there is any interference on the channel, try switching to a different channel or using a different communication method.

If workers have a clear line of sight of each other you may use any of the following communication methods in addition to the equipment listed above:

- Verbal communication and instructions.
- Light signals.
- Hand signals.

Depending on the type and condition of the confined space, you may need to implement a number of the above communication methods. When a person's safety is at risk, take all practical measures to ensure the safest circumstances possible.

1.3.3 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) may include:

- Eye protection (e.g. safety glasses).
- Ear protection.
- Gloves.
- Helmets.
- Safety clothing including chemical splash suits and fully enclosed gas-tight suits.

1.3.3.1 RESPIRATORY EQUIPMENT

Where the hierarchy of hazard control measures cannot provide a concentration of oxygen in the confined space greater than 19.5%, or any airborne contaminant cannot be safely reduced or removed, workers must be equipped with supplied-air respiratory protection and PPE.

All respiratory equipment should supply air at a pressure of at least 170L/min and have an oxygen level between 19.5% and 22%.

Respiratory protection devices include:

- Air purifying respirators.
- Self-contained compressed air breathing apparatus (SCBA).
- Supplied airline breathing apparatus.
- Escape breathing apparatus.

A Self-Contained Breathing Apparatus (SCBA) is a device worn by workers required to operate in an irrespirable atmosphere including maintenance personnel/workers, rescue workers, fire fighters and other groups.

The purpose of a breathing apparatus is to provide breathable air in an atmosphere that poses danger to health and life.

There are 2 kinds of SCBA:

1. Open-Circuit Breathing Apparatus

Open-circuit breathing apparatus contains filtered, compressed air rather than pure oxygen.

When this air is exhaled it is vented into the surrounding atmosphere.

Typical open-circuit systems have 2 regulators – a first stage to reduce the pressure of air to allow it to be carried to the mask, and a second stage regulator to reduce it even further to a level just above standard atmospheric pressure.

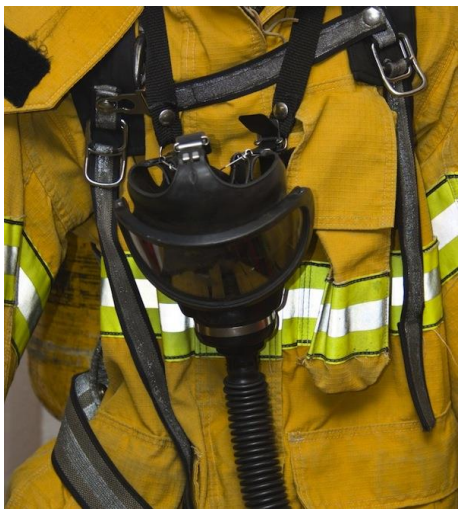
This air is then fed to the mask in 1 of 2 ways:

- With a demand valve (activating only on inhalation).

OR

- With a continuous positive pressure valve (providing constant airflow to the mask).

An open-circuit SCBA has a full-face mask, regulator, air cylinder, cylinder pressure gauge, and a harness with adjustable shoulder straps and waist belt which allows it to be worn on the operator's back.



2. Closed-Circuit Breathing Apparatus

The 'closed-circuit' type breathing apparatus filters, supplements, and re-circulates exhaled gas. It is used when a longer lasting supply of breathing gas is needed, such as in mine rescue, and working in spaces too narrow for an air cylinder.

Selection of the right protective equipment is easy, once the hazard is identified. Breathing apparatus should not be selected unless there is accurate information regarding the working environment.

It is therefore essential that air monitoring is regularly carried out, even when breathing apparatus is used.

If the contaminant levels in the air increase, a different type of respirator or other controls may have to be used for the work to be carried out safely.

The Australian Standard AS/NZS 1715 *Selection, use and maintenance of respiratory protective devices* should be referred to before selecting respiratory protection.

The Standard explains the general principles of respiratory protection and different types of respirators and breathing apparatus as well as effective risk management processes:

"…the provision of an item of Respiratory Protective Equipment (RPE) is only part of ensuring an overall system of respiratory protection for all employees/workers."

1.3.3.1.1 INSPECT THE BREATHING APPARATUS

Before you use any kind of breathing apparatus you need to make sure it is in proper safe working order. You are relying on this equipment to keep you alive – don't take any chances!

All equipment inspections should adhere to procedures, which may include:

- Relevant workplace procedures.
- Work instructions.
- Temporary instructions.
- Relevant industry and government codes and standards.

Check with your supervisor if you are unsure about any workplace procedures.

1.3.3.1.2 PRE-USE CHECKS

Pre-use tests and checks must include:

- Visually checking the integrity and serviceability of each component.
- Checking the cylinder for dents and gouges, and ensuring the cylinder pressure is correct and working properly.
- Checking hoses for cuts, cracks and bulges, and checking that the airflow system is functioning within recommended parameters.
- Checking that all ancillary equipment is working within useable boundaries.

See Appendix 1A for an example of a breathing apparatus inspection checklist.

The table below is a brief summary of items you should check before using any breathing apparatus. A more detailed example of a Breathing Apparatus/Respiratory Equipment inspection checklist is provided in Appendix 1D.

You should check the following items before using any breathing apparatus:	
Serviceability and integrity of components (check for damage, wear, leaks, cracks, tears, functionality).	☐
Cylinder pressure (check the manufacturer's specifications for correct air pressure).	☐
Integrity of air flow system (make sure there is a proper supply of air).	☐
Serviceability of any ancillary equipment (harness, regulator, pressure gauge).	☐
Seals (rubber must be in good condition).	☐
Inlet and exhaust valves (correct operation, particularly for blockage or sticking – sweat and saliva often cause them to clog up).	☐

1.3.3.2 ATMOSPHERIC TESTING AND MONITORING EQUIPMENT

Atmospheric testing and monitoring equipment includes:

- Instruments used for pre-entry testing appropriate to the hazards.
- Continuous monitors appropriate for the hazards.
- Other devices used to test the confined space atmosphere as required by the permit conditions.

Each gas testing instrument needs to be:

- Calibrated according to the manufacturer's instructions. Instruments that are out of calibration or that fail field checks cannot be used for atmospheric testing until they are properly calibrated.
- Calibrated by the manufacturer annually.
- Field-checked immediately prior to use. The field check needs to include checking with a test gas as per the manufacturer's instructions.

1.4 REPORT AND RECORD FAULTY EQUIPMENT

When inspecting your breathing apparatus you are looking for anything that will affect the operational serviceability or usefulness of that piece of equipment.

If any fault or damage is found with the equipment it will need to be recorded and logged, and reported to the appropriate personnel/workers in the manner that is required by your organisation.

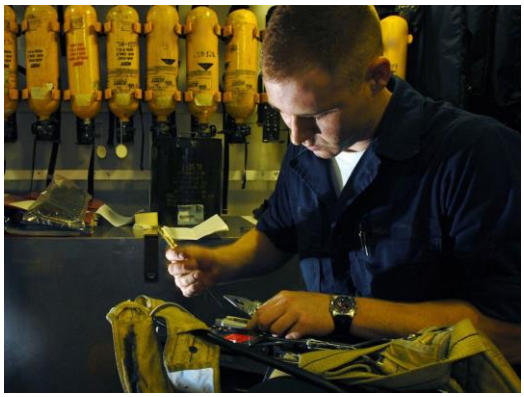
Once the damage has been reported, your supervisor or other appropriate personnel/workers will decide on the action to be taken. This will often include repair or replacement.

1.4.1 EQUIPMENT REPAIR AND REPLACEMENT

Repairs will need to be conducted in accordance with the manufacturer's specifications, and only by trained personnel/workers.

Replacement of equipment occurs when the equipment is beyond repair or is close to its replacement date.

Replacement of equipment should be undertaken on a regular schedule, as breathing apparatus and related equipment can deteriorate over time due to the nature of their use.



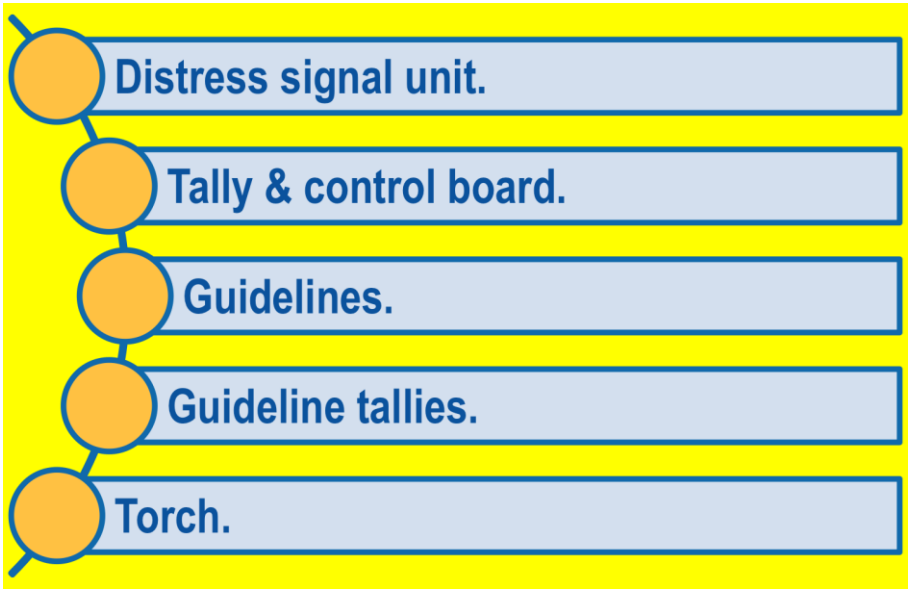
The old equipment will need to written off in the equipment records and the new equipment entered into the equipment records.

These records will need to be kept in accordance with the requirements of the organisation.

1.5 SELECT ANCILLARY EQUIPMENT

Ancillary equipment includes the items that help to maintain safety during the completion of the work.

Depending on the situation, ancillary equipment that may be required when using breathing apparatus includes:



1.5.1 DISTRESS SIGNAL UNIT

A distress signal unit is used as a signal in distress situations, such as when you are trapped or need assistance.

Distress signal units can be automatic, manual, or have a combination of both features:

- An automatic unit will sound an alarm after a set period of time with no movement. This allows for unconscious personnel/workers to be found.
- A manual unit allows the operator to activate the alarm when they need assistance.
- Units with both features allow the operator to trigger an alarm manually, while the machine will trigger the alarm if no movement is occurring.

1.5.2 TALLY

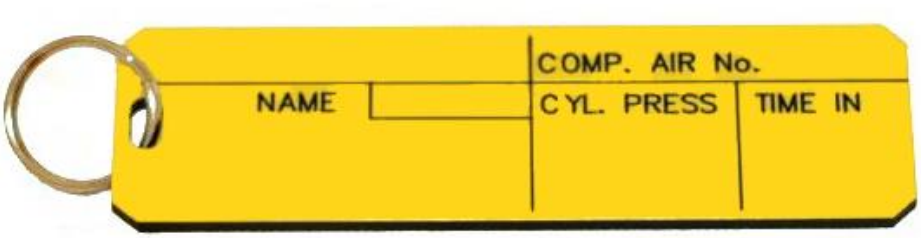
A tally is a yellow plastic strip normally attached to the distress signal unit.

The tally is given to the breathing apparatus Entry Control Officer who will ensure the required details are on the strip.

The control officer then places the tally on the control board.

The details required to be on the tally could vary between organisations but will generally include the name of the operator, time in the work environment and the contents of the cylinder.

Other details could include deployment area and estimated exit time.



1.5.3 GUIDELINES

A guideline is a small diameter line that is used by the breathing apparatus team to stay together in areas of reduced visibility.

The main guideline is up to 60m long with markings at set distances. These markings allow personnel/workers to tell by touch if they are heading in or towards the exit.

The main guideline will also be marked with a tally at the start of the line, lettered either A or B.

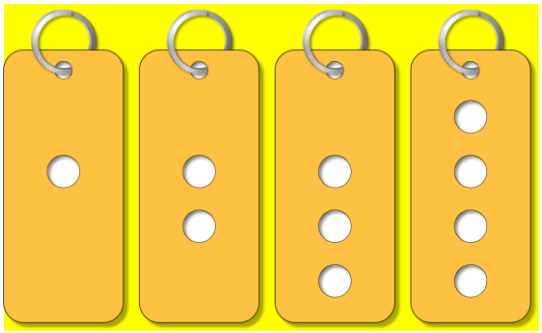
A personal line is attached to the main guideline.

1.5.4 GUIDELINE TALLIES

Guideline tallies are used to identify main or branches lines that are being used and are usually yellow.

Main lines use round tallies with either A or B on both sides and are attached to the start of the line.

For ease of identification branch line tallies have a number of holes punched through them. As each member of the breathing apparatus team attaches a personal line they will need to attach a guideline tally as well.



1.5.5 TORCH

Torches are used for illumination of the work area. Make sure they are operating correctly and that there is no restriction on using them within the confined space, before you enter.

APPENDIX 1D – BREATHING APPARATUS INSPECTION CHECKLIST

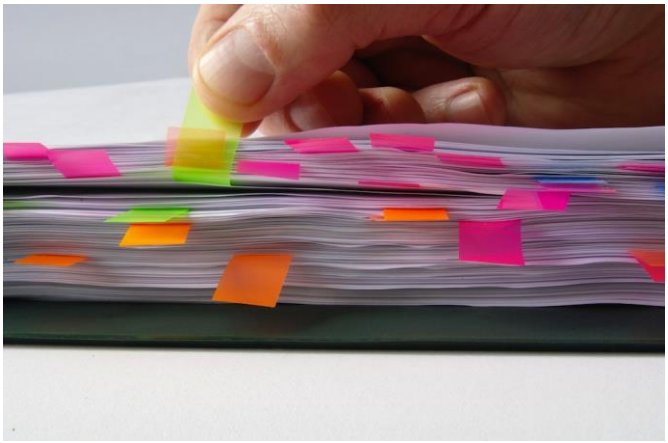
SCBA Inspection Checklist	Serviceable Condition?		
Component	**YES**	**NO**	**N/A**
1. Is the face-piece in good condition? *Look for these Items:* ▸ Excessive dirt. ▸ Cracks, tears, holes or distortions from improper storage. ▸ Inflexibility. ▸ Cracked or badly scratched lenses in full face-pieces. ▸ Incorrectly mounted full face-piece lens or broken or missing mounting clips.			
2. Are the head straps or head harness in good condition? *Look for these items:* ▸ Breaks in the straps. ▸ Loss of elasticity. ▸ Broken or malfunctioning buckles and attachments. ▸ Excessively worn serrations on the head harness which might permit slippage.			
3. Is the exhalation valve in good condition? *Look for these items:* ▸ Foreign material under the valve seat. ▸ Cracks, tears or distortion in the valve material. ▸ Improper insertion of the valve body in the face-piece. ▸ Cracks, breaks or chips in the valve body, particularly in the sealing surface. ▸ Missing or defective valve cover. ▸ Improper installation of the valve in the valve body.			
4. Is the breathing tube in good condition? *Look for these items:* ▸ Damaged, worn or missing end connectors. ▸ Missing or loose hose clamps. ▸ Deterioration or the hose material.			
5. Is the high pressure air supply in good condition? *Look for these items:* ▸ Air supply lines, hoses, attachments and end fittings worn. ▸ Valves and air flow regulators inoperable. ▸ Low pressure alarm inoperable. ▸ Air cylinder less than full. ▸ Gauges inoperable. ▸ Air cylinder damaged. ▸ Air cylinder hydrostatic test out of date.			
6. Is the cylinder harness in good condition? *Look for these items:* ▸ Straps or frame showing wear or damage. ▸ Broken or malfunctioning buckles and attachments. ▸ Air cylinder attachment devices inoperable.			

Respirator Inspection Checklist	Serviceable Condition?		
Component:	YES	NO	N/A
Is the face-piece in good condition? Check for these defects: ▸ Cracks, tears, or holes. ▸ Face mask distortion. ▸ Cracked or loose lenses/face shield.			
Are the head straps in good condition? Check for these defects: ▸ Breaks or tears. ▸ Broken buckles.			
Are the valves in working order? Check for these defects: ▸ Residue or dirt. ▸ Cracks or tears in valve material.			
Are the filters/cartridges in serviceable condition? Check for these items: ▸ Approval designation. ▸ Gaskets. ▸ Cracks or dents in housing. ▸ Proper cartridge for hazard.			
Is the air supply system working correctly? Check for these items: ▸ Breathing air quality/grade. ▸ Condition of supply hoses. ▸ Hose connections. ▸ Settings on regulators and valves.			
Are the rubber parts in good condition? Check for these items: ▸ Pliability. ▸ Deterioration.			

1.6 BREATHING APPARATUS OPERATIONAL PROCEDURES AND SAFE WORK PRACTICES

Prior to starting and operating the breathing apparatus it is essential that you are aware of the operational procedures and safe work practices that apply.

This is to ensure you are able to complete tasks in the safest manner possible.



Operational procedures and safe work practices may include the procedures to be followed for:

- Donning and starting breathing apparatus.
- Performing operational checks on the equipment.
- Following control procedures.
- Selecting ancillary equipment.
- Identifying and controlling hazards.
- Maintaining communication.

1.6.1 CONTROL PROCEDURES

Organisational procedures will detail exactly how you are required to carry out any task that requires a breathing apparatus. It is essential that you follow those procedures in every situation.

1.6.1.1. PRINCIPLES OF BREATHING APPARATUS CONTROL

Whenever a person is working with breathing apparatus there must be adequate controls in place to ensure their safety.

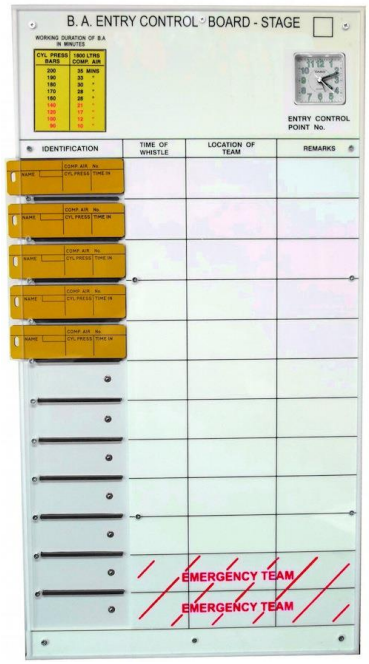
The decision to undertake breathing apparatus operations must be made after a risk analysis has been completed.

The risk analysis will assess the risk and available resources to apply the appropriate level of control procedures.

Controls to be implemented can include:

- Determining the requirements for and use of control equipment.
- Determining the correct entry point procedures, and personnel/workers in charge.
- The use of timing devices to ensure the safety of personnel/workers.

1.6.1.2 ROLE OF THE ENTRY CONTROL OFFICER



An Entry Control Officer is a person who is placed at an entry/exit point to:

- Determine the donning location.
- Receive tallies from the personnel/workers wearing the breathing apparatus.
- Enter the time-in on the tally board.
- Enter the tally information on the tally board.
- Check the cylinder content for each person wearing breathing apparatus.
- Ensure personnel/workers tallies are kept together on the board or as required by the operational procedures for your organisation.

- Calculate the time-out for each person.
- Place the time-out time on the tally board.
- Record which location personnel/workers are moving to.
- Return the tallies to the appropriate person when they have left the confined space.
- Keep your supervisor (or authorised person) informed of any concerns or developments that may affect the work being carried out.

In some organisations the Entry Control Officer, supervisor or standby person will also be responsible for attaching main guidelines and tallies to the guidelines, maintaining communication with personnel/workers, and responding to emergency or rescue activities.

1.6.1.3 ENTRY POINT PROCEDURES

Entry points are the focal points for the effective management of incidents where breathing apparatus is used, and for the safe control of access to and egress from the work area.

Entry points are selected based on factors such as:

- The size of the work area.
- Location of access points to the work area.
- Physical limitations of the site.

1.6.1.3.1 ENTRY POINT PROCEDURES

Stage	Characteristics/Procedures Of The Control Stage				
	Number Of Entry/Exit Control Points	**Total Number Of BA Wearers**	**Type Of Task**	**Number Of Control Officers**	**Other Factors**
1	1	10 or less	Short term/ smaller operation.	1	
2 Used if one or more of the Control Stage characteristics are present. Often used at large-scale worksites.	2 or more	More than 10	Longer term/ greater demand for control and supervision required.	More than 1 – Generally if more than 1 entry control point an Entry Control Officer and tally board is necessary at each entry point.	Branch guidelines used.

1.6.1.4 TIMING DEVICES

Timing devices are used to calculate the amount of time a worker has been using the breathing apparatus.

Often timing devices will be attached to the entry control board so that the Entry Control Officer can monitor times.

A person who is using breathing apparatus has an effective work cycle of between 30 to 60 minutes depending upon factors such as respiration rate, size of cylinder, environmental conditions and individual factors.

2.1 UPDATE THE OPERATIONAL PLAN

While most of the nature of the rescue operation should be discussed prior to the commencement, there are times when new information comes to hand, such as the weather and/or rescue site hazards changing.

Emergency situations can change in an instant and it is important that you have the latest information on what is happening at all times.

You may receive an updated 'sit-rep' (situation report) while en route (on the way) to the scene of the rescue operation. Your operational plan will need to be updated as this information is provided.

It is important for the supervisor of the rescue operation to stay in constant contact with people who can provide updates on any changes to the rescue site.

The supervisor then needs to communicate these changes to the rescue team to ensure the most up-to-date information is available upon arrival at the site.

Equipping the rescue team with details of any changes to the site will improve the chances of a safe and successful rescue operation.

2.2 DISCUSS ANTICIPATED HAZARDS AND RISKS

Hazards and risks will always be present at the rescue site. Depending on the situation at hand there may be a number of anticipated hazards that need to be considered.

Some assumptions about potential hazards may be made early on in the rescue operation based on:

- The rescue location/environment.
- Equipment, plant, facilities and physical characteristics that are known to be in the area.
- Other situations that are occurring at the same time (e.g. flood or fire) that impact on the confined space rescue operation.
- The nature of the confined space including its stability.
- The number of people that are trapped in the confined space (if known).

It is important the rescue team is aware of, discusses, and prepares for any hazards and risks.

When a rescue team is equipped with this information, it provides them an opportunity to discuss how they may be able to minimise the hazards and risks.

It also gives rescue team members an opportunity to mentally prepare themselves for the rescue operation.

A **RISK** is the chance of a hazard hurting you or somebody else or causing some damage.

A **HAZARD** is the thing or situation that causes injury, harm or damage.

If you can remove or at least control a **HAZARD** you can reduce the **RISK** involved. This process is called risk management.

Each organisation will have a specific process for carrying out risk management, which may be formal and conducted before starting any work, but also includes processes that can be used while the work is being carried out (such as dynamic risk control).

The basic approach for both situations is the same:

1. Identify hazards.

2. Work out the best way to eliminate, minimise or control the hazard and implement it.

3. Continue to monitor the hazard while you carry out the work and take any further action as required (if the situation changes or the control is no longer effective).

2.3 ASSESS THE PHYSICAL FEATURES OF THE CONFINED SPACE

Once you arrive at the location of the rescue operation you will need to assess the physical features of the confined space.

This includes:

- Access/egress points.
- Noise.
- Systems in operation.
- Stability of the area.

- Layout of the operational area.
- Size of the confined space.
- Lighting and communication capabilities in and around the confined space.
- Any hazards that may exist in or around the confined space.

Gathering this information will enable you to operate as safely as possible throughout the rescue.

2.3.1 MANAGING THE RESCUE OPERATION

Access to the confined space needs to be managed. This includes keeping tabs on the number of personnel/workers entering the confined space, the equipment being used and the duration of access to the confined space.

A tally board is useful to track the movements of personnel/workers in and out of the confined space.

Keep communication channels open at all times and be prepared to engage in a contingency operation if the situation or environment of the confined space changes dramatically.

All actions must follow operational documentation including:

- Entry permits.
- Tally boards.
- Entry control procedures.
- Air monitoring procedures.
- Rescue plan.

2.3.1.1 CONFINED SPACE ISOLATION

You will need to check that the site has been prepared in accordance with specified work permit conditions including:

- Mechanical/electrical/other energy sources and process isolations.
- De-energising all sources of energy/pressure.
- Purging of lines.
- Lock-out/tag-out procedures.
- Blinding/blanking lines.

The results of these checks should be reported to appropriate personnel/workers.

The confined space must be made ready for entry in compliance with workplace procedures, relevant legislative requirements and AS 2865.

2.3.1.2 ATMOSPHERIC TESTING

Where relevant, the atmosphere in a confined space needs to be tested for:

- Oxygen content.
- Airborne concentration of flammable contaminants.
- Airborne concentration of potentially harmful contaminants (e.g. hydrogen sulphide, carbon monoxide and methylene chloride).

A safe atmosphere must be ensured during work in a confined space. A safe atmosphere in a confined space is one that:

- Has a safe oxygen level.
- Is free of atmospheric contaminants or contains atmospheric contaminants below their exposure standard (if any).
- Has any flammable gas or vapour in the atmosphere below 5% of its Lower Explosive Limit (LEL).

There are different types of gas testing equipment.

Some devices are worn while working in a confined space while others are able to test atmospheres using a probe or infra-red beam.

Some detectors are hand-held with sensors built into the unit.

The choice of equipment to use will depend on the type of confined space and limitations of access to the confined space.

Gas testing equipment may use a number of units of measurement to report gas levels. These could include:

Mg/cubic m	Milligrams per cubic metre.
PPM	Parts Per Million.
%	Per cent (rating of how many parts per one hundred).
LEL %	Lower Explosive Limit rating.
v/v	Volume in volume (usually referring to level of oxygen).

Lower Explosive Limit (LEL)

The LEL is the concentration of a flammable gas or vapour in air below which the propagation/spreading of a flame does not occur on contact with an ignition source (spark, open flame).

A person's senses should never be used to determine if the air in a confined space is safe. Many toxic or flammable gases cannot be seen or smelt and the level of oxygen in the air cannot be determined without mechanical means.

Time Weighted Average (TWA)

The maximum average concentration to which an unprotected worker may be exposed over an eight hour working day is called the Time Weighted Average or TWA value.

TWA values are calculated by taking the sum of exposure to a particular toxic gas in the current operating session in terms of parts-per-million-hours, and dividing by an eight-hour period.

Short Term Exposure Limits (STEL)

Toxic substances may have short term exposure limits which are higher than the eight hour TWA. The STEL is the maximum average concentration to which an unprotected worker may be exposed in any fifteen minute interval during the day. During this time, neither the eight hour TWA or the ceiling concentration may be exceeded.

Any fifteen minute periods in which the average STEL concentration exceeds the permissible eight hour TWA must be separated from each other by at least one hour. A maximum of four of these periods are allowed per eight hour shift.

2.4 ASSESS THE CONFINED SPACE FOR HAZARDS AND RISKS

Risk management is the process of reducing or managing the risks when working with a hazard or in a hazardous situation, and should take into consideration the context of the organisation and worksite.

Risk Management must be conducted in accordance with:

- Legislative, organisation and site requirements/procedures.
- Australian Standards (AS/NZS ISO 31000:2018).
- Compliance Code.
- Employment and workplace relations legislation.
- Equal employment opportunity and disability legislation.

Risk management is made up of the following stages:

Consultation and communicating with others and monitoring and review should be planned for and carried out at every stage of the risk management process.

2.4.1 MONITORING AND REVIEW OF HAZARD CONTROLS

Monitoring and review of any hazard control is important to make sure that the control is still effective and providing as much protection from the hazard as possible. If the situation changes the control may no longer be enough and further action may need to be taken.

2.4.2 CONSULTATION AND COMMUNICATING WITH OTHERS

Communication and consulting with others is an important part of the risk management process and should take place at all stages.

Identifying risks and hazards and coming up with ways of controlling them includes talking to the people with knowledge of the situation, or who are directly affected by any action you may take.

You should always talk to any workers involved in the hazard control measures as well as the OHS/WHS officer or supervisor.

This will help ensure that risks and hazards are not only effectively identified but that those people involved with controlling and treating them are clear of their role and responsibilities in the risk management process. It also allows different skills, expertise and views to be brought together to enhance and support the risk management process.

It is important that different views and concerns are identified and recorded as part of the consultation and then taken into account during the decision-making process.

Controlling a hazard can be a team effort and it's important that everybody knows what they need to do and how/if they need to change their work process to suit.

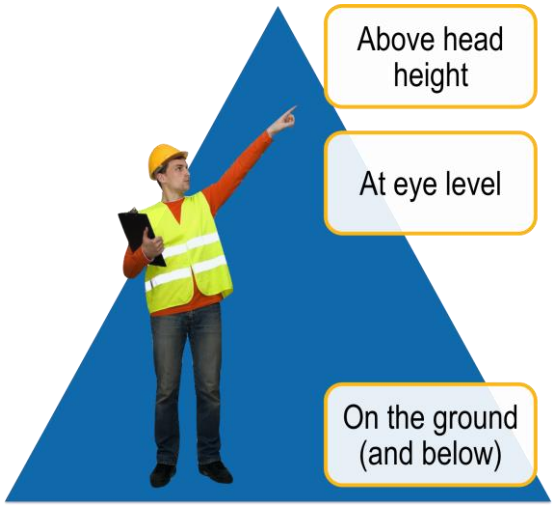
2.4.3 RISK/HAZARD IDENTIFICATION

HAZARDS CREATE RISK. CHECK FOR HAZARDS.

A **RISK** is the chance of a hazard hurting you or somebody else or causing some damage.

A **HAZARD** is the thing or situation that causes injury, harm or damage.

If you can remove or at least control a **HAZARD** you can reduce the **RISK** involved.



To identify possible risks and hazards walk all around the work area and check:

Up High – Hazards could include: obstructions, power lines, trees, scaffolding, cranes.

Eye Level – Hazards could include: other workers, equipment, machines, hazardous materials, obstructions.

Down Low – Hazards could include: surface condition, spills, debris, underground services, weight bearing ability.

Before starting work on a site you should consult with safety officers, supervisors, site engineers, managers responsible for the site or other relevant workplace personnel/workers.

They can inform you of any site-specific hazards and ground conditions and ensure that you adhere to any workplace policies and site-specific procedures.

It is important that suitably knowledgeable personnel/workers are involved in the hazard identification process.

It is essential that you are aware of the possible hazards that can occur on site, and know the procedures to monitor and control them.

Hazards related to the use of breathing apparatus could include:

Running Out Of Air

Low air warnings are built into most breathing apparatus. You need to be aware of the warnings or alarms and regularly check your gauge so you are aware of the amount of time you have left.

Failure To Maintain A Face Seal

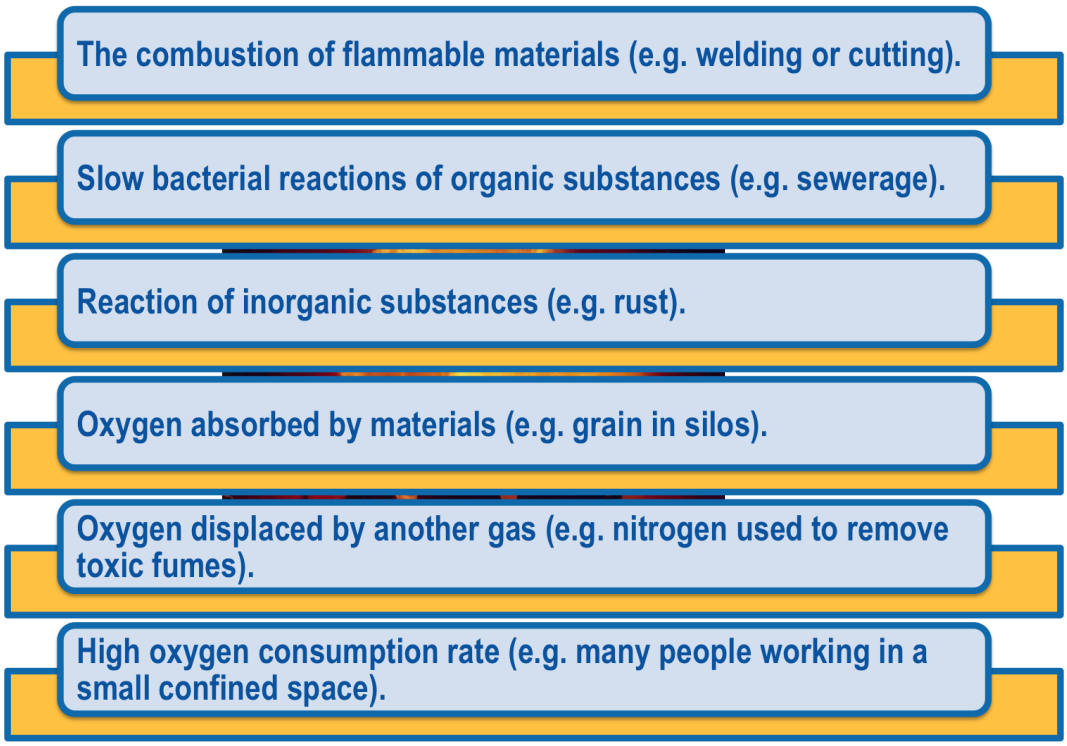
Without an adequate seal air will leak and fumes and toxic gases could leech into your mask area.

Malfunction Of Equipment

Malfunction is a constant threat to users of breathing apparatus, but regular maintenance can help to overcome this.

If you have equipment that is malfunctioning you will need to leave the work area immediately.

Never evacuate the scene without notifying your team leader and do not evacuate by yourself. Always have a two-person team. If your team is a three-person team, you should all evacuate.



2.4.3.1 COMMON CONFINED SPACE HAZARDS

The following are some common hazards related to working in and around a confined space:

- Unsafe oxygen levels.
- Fires and explosions.
- Atmospheric hazards.
- Hazardous chemicals (HAZCHEM).

Unsafe Oxygen Levels

Levels of oxygen within a confined space which are too high (above 23.5%) or too low (below 19.5%) are a major hazard.

There are a number of reasons why oxygen levels inside a confined space may fall below a safe level including:

Fires and Explosions

'Hot work' – welding and thermal/oxygen cutting – can create hazards such as excessive heat, sparks and the risk of fires or explosions.

Fires and explosions can be caused by:

- Open flames (e.g. welding torches).
- Hot surfaces (e.g. steam lines).
- Frictional sparks (e.g. a metal tool striking another object).

- A spark or heat produced by electrical equipment (e.g. a mobile phone, flashlight).
- Incorrectly installed wires or overloaded fittings.
- Static electricity sparks (e.g. from synthetic clothing)

Combustible/flammable dusts can often be found in a confined space such as a storage bin or grain silo.

Fire also poses dangers due to smoke, as well as causing disorientation or structural instability of the work area.

Disorientation

In smoke, darkness and confinement, disorientation can cause hazards. This could include becoming confined or entrapped within an area, or losing touch with your team.

The extensive use of guidelines and working together as a team will minimise this risk.

Structural Hazards

Structural hazards are the hazards caused by the physical characteristics of the environment such as restrictions to movement or visibility caused by obstructions. The structure you have entered may also be unstable due to damage, age or use.

Atmospheric Hazards

Hazardous dusts, gases, fumes, mists and vapours can arise in a confined space because of:

- ❑ The storage or transfer of materials (e.g. grain).
- ❑ The work processes being undertaken (e.g. spray painting producing mists).
- ❑ Spills or leaks from pipes or machinery.
- ❑ Disturbance of materials.
- ❑ Gases in stormwater drains and sewers.
- ❑ Chemical reactions between substances.
- ❑ Exhaust gases from pumps or other machinery.

- The work processes being undertaken (e.g. spray painting producing mists).
- The storage or transfer of materials (e.g. grain).
- Gases in stormwater drains and sewers.
- Chemical reactions between substances.

Residue left in confined spaces such as empty tanks and containers can cause a build-up of toxic or explosive gases.

Toxic gases can quickly overcome and kill an unprotected worker.

Confined spaces must be monitored for dangerous gases or unsafe oxygen levels.

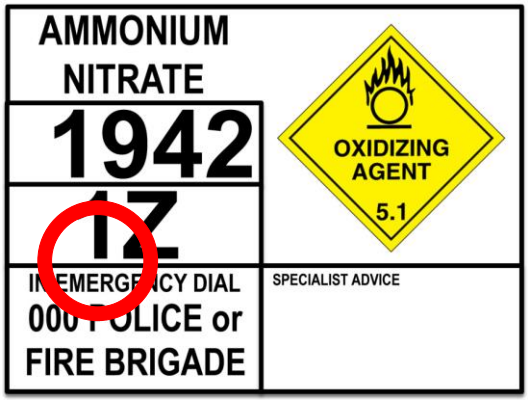
Hazardous Chemicals (HAZCHEM)

It is important to understand the HAZCHEM code system when inspecting a worksite.

The HAZCHEM Code consists of either two or three characters – a number followed by either one or two letters.

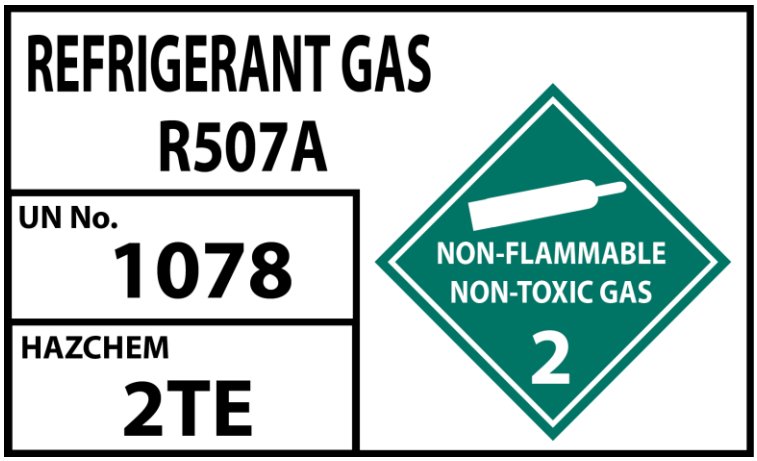
The number indicates the type of medium used:

- **1 =** The use of solid streams of water.
- **2 =** The use of a water fog or fine water spray.
- **3 =** The use of a water-based foam.
- **4 =** The use of a dry agent such as a dry chemical powder.



You may use a higher number classification than the one indicated but not a lower one (e.g. a 2 would mean you could use water fog/fine water spray, water-based foam or a dry agent. You could NOT use solid streams of water).

The first letter indicates the risk of violent reaction or explosion, type of personal protective equipment (PPE) to be worn, and whether the substances should be contained or diluted.



Violent Reaction

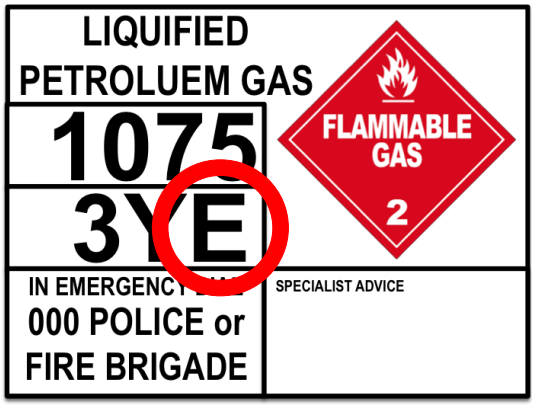
P, S, W, Y = A violent reaction or explosion may occur.

Personal Protective Equipment (PPE)

P, R, W, X = a full chemical protection suit and breathing apparatus should be worn.
S, T, Y, Z = breathing apparatus only needs to be worn.

Dilute or Contain

P, R, S, T = Substance should be diluted.
W, X, Y, Z = Substance should be contained.



White letters on a black background indicate that breathing apparatus should be worn only if the substance is involved in a fire.

There may be a letter E after the first letter. This indicates that evacuation of other personnel/workers in the area should be considered.

2.4.3.2 OTHER HAZARDS

Some materials stored in or around a confined space (e.g. grains, sawdust, or soil) can engulf (completely surround and trap) a person in seconds.

If they are not rescued immediately they will die within a few minutes.

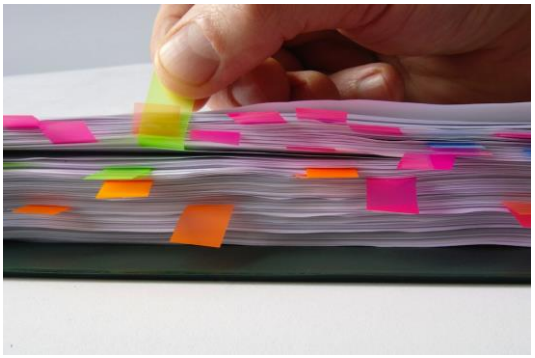
It is important not to forget about psychological hazards such as stress and claustrophobia (fear of confined spaces).

Other common hazards that you may find while working in or around confined spaces include:

- Underground services such as water and waste pipes, electrical cables and gas pipelines.
- Excavations.
- Traffic.
- Entrapment.

- Uncontrolled introduction of substances.
- Environmental hazards (e.g. inadequate lighting, heat and cold).
- Biological hazards such as viruses, bacteria or fungi.
- Limited head space or overhangs.
- Noise, rotational equipment or vibration.
- Restricted access and egress (entry and exit).

- Sharp edges, protrusions or obstructions.
- Equipment or product mass.
- Mechanical hazards (e.g. injury from moving mechanical parts).
- Electrical hazards.
- Slippery surfaces, spills or leaks.
- Manual handling hazards.



Once a risk has been identified, check for any existing procedural documentation, workplace procedure or workplace policy which describes how to eliminate or control the risk.

It is important that all records, policies and procedures are kept up-to-date so that the most relevant information is available and used.

Talk to other workers, your manager, supervisor, team leader or health & safety representative to find out if the risk has already been addressed, and what techniques are available to you to resolve it.

If you find that there is no documentation or guideline in place to resolve an identified risk, you need to assess the risk and identify a feasible course of action to deal with it.

2.4.4 RISK ASSESSMENT

A risk assessment is a two-step process, comprising a Risk/Hazard Analysis and a Risk/Hazard Assessment.

2.4.3.1 RISK ANALYSIS

Risk analysis involves considering what are the causes and sources of risks and comprises 3 factors:

Consequence	What would be the outcome of the event occurring? How severe would the outcome be?
Likelihood	What is the chance of the event/consequence occurring? Has the event happened before? Is it likely to happen again?
Risk Level	The combined result of likelihood and consequence.

Using a table similar to the one shown here you can analyse how high the risk level is:

LIKELIHOOD	CONSEQUENCE				
	Insignificant	**Minor** First Aid Required	**Moderate** Medical Attention and Time Off Work	**Major** Long Term Illness or Serious Injury	**Severe** Kill or Cause Permanent Disability or Illness
Almost Certain	**M**	**H**	**H**	**VH**	**VH**
Likely	**M**	**M**	**H**	**H**	**VH**
Possible	**L**	**M**	**H**	**H**	**VH**
Unlikely	**L**	**L**	**M**	**M**	**H**
Rare	**L**	**L**	**M**	**M**	**M**

2.4.4.2 RISK EVALUATION

Risk evaluation is based upon the outcomes and results of the risk analysis.

Risk evaluation involves making decisions about which risks need to be treated and the order in which they should be treated. It should take into consideration the context of the risks in relation to:

- The organisation.
- The worksite.
- The relevant laws.
- Regulations.
- Other policies, procedures and requirements.

Using a table similar to the one shown below you can evaluate how soon you should act to remove or control the hazard to achieve an acceptable level of risk:

RISK LEVEL	ACTION
VERY HIGH	Act immediately: The proposed task or process activity must not proceed. Steps must be taken to lower the risk level to as low as reasonably practicable using the hierarchy of risk controls.
HIGH	Act today: The proposed activity can only proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk controls must include those identified in legislation, Australian Standards, Compliance Code etc. 3. The risk assessment has been reviewed and approved by the Supervisor. 4. A Safe Working Procedure or Safe Work Method has been prepared. 5. The supervisor must review and document the effectiveness of the implemented risk controls.
MEDIUM	Act this week: The proposed task or process can proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk assessment has been reviewed and approved by the Supervisor. 3. A Safe Working Procedure or Safe Work Method has been prepared.
LOW	Act this month: Managed by local documented routine procedures, which must include application of the hierarchy of controls.

Any task with a Very High risk level is absolutely unacceptable to carry out. Steps must be taken to reduce the risk level.

2.4.5 RISK TREATMENT

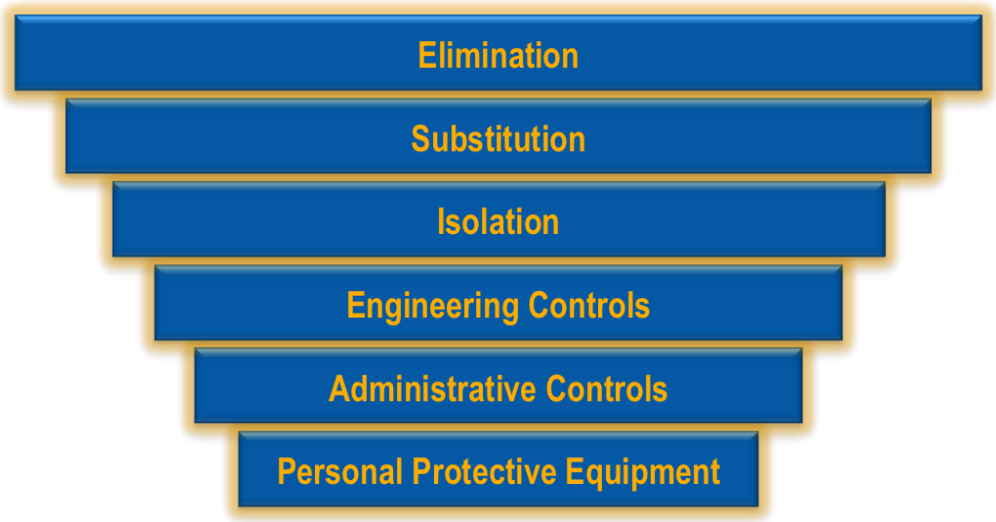
Once risks have been identified, analysed and evaluated, risk treatment options need to be considered and applied.

Risk treatment involves selecting one or more options to modify a risk and then implementing the selected option/s. Risk treatments should be recorded in a risk treatment plan.

Once an option has been implemented it may be referred to as a risk control.

2.4.5.1 CONSIDER HAZARD/RISK CONTROL STRATEGY OPTIONS

The Hierarchy of Hazard Control is the name given to a range of control methods used to eliminate or control hazards and risks in the workplace. The Hierarchy has 6 levels:



It is important to understand what each level in the Hierarchy stands for and how they can be implemented into your work.

1. Elimination	Completely remove the hazard. This is the best kind of hazard control.
2. Substitution	Swap a dangerous work method or situation for one that is less dangerous.
3. Isolation	Isolate or restrict access to the hazard.
4. Engineering Measures	Use equipment to lower the risk level.
5. Administrative/ Safe Work Practices	Site rules and policies attempt to control a hazard.
6. Personal Protective Equipment	The least effective control. Use PPE while you carry out your work.

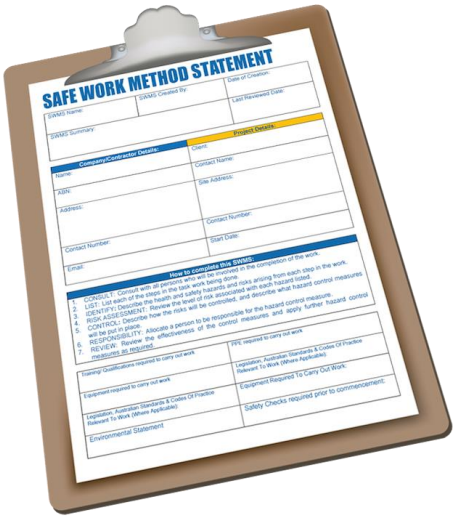
It is important to consider all of the options available when deciding on the best course of action. Not all options are feasible or possible under some circumstances.

You may need to use a number of control measures in conjunction to reduce the risk level to an acceptable level.

The risk treatment plan should clearly identify the order in which to implement the individual risk treatments.

Some important hazard controls for working in a confined space include:

- Placing a stand-by person outside the confined space.
- Applying isolation, tagging and lock-out procedures for liquid, gas, electric current or other stored energy, as well as erecting barriers and signage.
- Purging gases and ventilation of the confined space.
- Using protective equipment and apparatus.
- Any other requirements outlined in the confined space entry permit, AS2865 or other relevant sources.



If work is planned to be done in pipelines normally used to carry liquids to a confined space (such as a boiler or fuel tank), it must be blanked off with suitable material to prevent the pipeline being used while work is being carried out.

It is not enough to just turn off a valve where the system is still live.

Document any hazards you find and the hazard controls you implement in a Job Safety Analysis (JSA) or Safe Method Work Statement (SMWS).

Identify The Resources Required To Implement The Control Strategy

These resources should also be outlined in the risk treatment plan and could include:

- New or different equipment.
- Staff training.
- More personnel/workers.
- Creation of procedures and instructions.
- Fencing or traffic control.

Is The Control Strategy Practical And Realistic?

Once you have determined the course of action that achieves the greatest reduction in risk, and the resources required to implement it, you need to determine if this is feasible (practical and realistic). You can do this by asking questions such as:

All of these factors need to be considered when deciding on the course of action to take.

Implement The Control Strategy

Once you have come to the conclusion that the action is appropriate, feasible and reduces the level of risk to an acceptable level, it is time to take action and implement the control measures.

Plan out, in detail, the steps required to implement the control strategies. This plan is called the Risk Treatment Plan.

Consult with other workers and management to ensure the implementation is done correctly and does not have a negative bearing on other trades, procedures or workers.

Once the risk control measure is in place you will need to review the level of risk to determine if more needs to be done to lower the risk level.

The acceptable level of risk is determined by an organisation's policy, goals and objectives towards safety.

Talk to your supervisor or health & safety representative if you are not sure about whether or not the risk has been reduced enough to carry out the work.

If you determine the risk to be at an unacceptable level, the work must not be carried out until the situation can be reviewed by an authorised person.

2.4.6 MONITORING AND REVIEW OF RISK MANAGEMENT

Monitoring and review is an important part of the risk management process and should be planned for at every stage. It involves regular surveillance and checking and responsibilities concerning it should be clearly defined.

Monitoring and review should:

- Ensure that treatments and controls are effective and efficient.
- Aim to improve risk assessment through obtaining further information.
- Be used to analyse events and changes that have occurred through the implementation of the process and any lessons that may be learned from this.
- Be used to detect any changes, including changes to risks, which may require revision of treatments, or the emergence of new risks.

It is important that monitoring and review results are recorded and reported according to organisational policies and procedures.

2.4.7 DYNAMIC RISK ASSESSMENT

Depending on the nature of the situation it may be more appropriate to conduct a Dynamic Risk Assessment (DRA).

Dynamic risk assessment is the assessment of the level of risk in changing hazardous situations. It is undertaken prior to, during and after the execution of an operation.

The following are dynamic risk assessment concepts:

- The benefits of proceeding with a task must be weighed carefully against the risk.
- Think before you act rather than act before you think.
- What sets DRA apart from systematic risk assessment is that it is applied in situations that:
  - Contain unpredictable/unforeseen risks.
  - The risk environment rapidly changes.
  - Allows individual to make a risk judgement.
  - Provides personnel/workers with a consistent approach to assessing risk.

2.5 EFFECTIVE COMMUNICATION

Being able to communicate effectively in the workplace is extremely important, especially in dangerous situations such as working in confined spaces.

2.5.1 SITE COMMUNICATIONS

Communications may include instructions, details of the situation (sit-rep) as they occur, updates on the location and condition of casualties and environments.

Personnel/workers that you may be in communication with include:

- Agency support.
- On-site staff.
- Emergency service workers.
- Local state/territory government authorities.

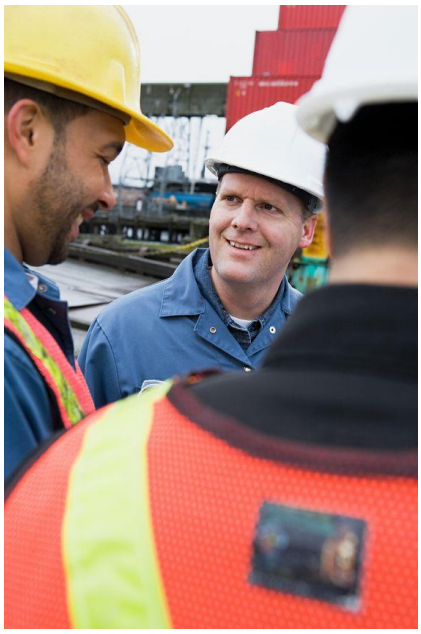
For the safety of all personnel/workers involved in confined space operations it is vital that you:

- Can speak clearly and unambiguously in English.
- Are able to explain, describe and verify complex needs, issues and situations.

Effective communication also means understanding the language, jargon and systems of the site, as well as industry terminology, which can vary between states and individual sites.

While you may not need to apply some of the more technical terms or phrases, you should be able to recognise what they are referring to when you come across them in the documentation.

You need to be able to use them to communicate concepts and information on the worksite and to understand your work instructions.



If you are unsure of the meaning of any words, phrases or other terminology, you should seek clarification at your team briefing or site meeting, or by asking your supervisor.

Effective communication is particularly important in situations where you or a fellow worker is in immediate or potential danger.

Confined space environments can change in seconds and being able to communicate events as they occur provides you with the best possible chance of survival in life threatening situations.

3.1 ASSESS SCENE AND DETERMINE LOCATION AND CONDITION OF CASUALTIES

The area where the rescue is to be performed (incident scene) will need to be thoroughly examined.

A scene reconnaissance will need to be conducted and the results reported to the appropriate personnel/workers.

Information can be gathered from a visual examination of the incident scene as well as from talking to casualties and others at the scene.

A scene reconnaissance includes an assessment of:

- Location of casualties.
- Number of casualties.
- Access to casualties.
- Condition of casualties.
- Potential hazards in the area.
- Estimated time the rescue may take.

3.1.1 LOCATION OF CASUALTIES

Make sure you determine the exact position of the person/persons that need to be rescued. This will enable you to get in and get the casualty out of the confined space as quickly as possible.

Determining the position of the casualty may be done by:

- Making contact with them via radios, light signals, or other communications (if they are conscious).
- Referring to reports, tally boards or work schedules.
- Conducting a search of the area once you have accessed the confined space (this option should be a last resort).

If conducting a search, make sure you have the appropriate protective and rescue equipment such as respiratory equipment, torches/lights, gas testing equipment or other protective equipment and suits.

3.1.1.1 EVIDENCE OF CASUALTIES

Evidence of the location of casualties may also come from:

- The entry permit.
- The work permit.
- Information from bystanders, witnesses and emergency services personnel.

If you determine that the casualty is trapped, you will need to plan a method of freeing them.

In a situation where the environment is unstable, you must be extremely careful not to cause further harm in any action that you take.

All evidence that you gather relating to the location of casualties must be reported and communicated to other rescue personnel/workers as required.

This will help to shape the rescue operation and will enable all members of the rescue team to know what they need to do as well as when and how to do it.

3.1.2 NATURE OF ENTRAPMENT

It is important to determine the nature of entrapment of the casualty.

- Are they stuck under something?
- Are they trapped after a structural collapse or cave-in?
- Are they able to assist you in clearing the way from their side?
- Are they completely immobilised?

This information will guide you on the use of rescue equipment and the techniques you will need to implement in rescuing the casualty.

Some materials stored in or around a confined space (e.g. grains, sawdust, or soil) can engulf (completely surround and trap) a person in seconds. If the person is not rescued immediately they can die within a few minutes.

Becoming trapped within a confined space can occur quickly and without warning. Knowing your organisation's requirements and procedures for dealing with entrapment is essential.

Once you recognise that you are trapped it may be necessary for you to:

Cease All Non-Essential Strenuous Activities
Ceasing all strenuous activities assists you to calm your breathing and air consumption, and thus conserves the air in your breathing apparatus.

Activate Your Distress Signal Unit

You will need to activate your Distress Signal Unit manually in accordance with the manufacturer's guidelines for the unit.

Relocate

By moving to the safest position possible, you will be less susceptible to hazards, and will be able to remain calm.

While remaining calm in an entrapment situation may be difficult, it is important that you attempt to do so in order to maintain a clear mind and conserve your oxygen.

Call For Assistance

Using your inbuilt communications equipment to call for assistance allows you to confirm to the rescue team where you are, what the conditions are and if escape units or additional air cylinders need to be brought into the scene.

Entrapment is a situation that can turn deadly without notice. The success of the entrapment procedures depends on regular practice therefore appropriate training is essential.

3.1.3 CONDITION OF CASUALTY

Determine the needs of the casualty or casualties. If there are multiple casualties you may need to prioritise who is to be rescued first (triage).

Casualties can be placed into four categories depending on the seriousness of their injuries:

1. Severely Injured	People requiring immediate transportation, medical treatment or resuscitation.
2. Significantly Injured	People who need medical assistance but are stable enough to wait if necessary.
3. Minor Injuries	People who can be treated with first aid or are psychologically disturbed.
4. Deceased Persons	A medical officer must certify that death has occurred.

Injuries sustained by casualties may include:

- Spinal injuries.
- Head injuries.
- Bleeding/haemorrhage.
- Cardiovascular emergencies.
- Hypoxia (lack of oxygen).

- Burns and scalds.
- Fractures.
- Soft tissue injuries.
- Poisoning.
- Environmental exposure.
- Shock.

You also need to consider psychological impacts that are affecting the casualty such as:

- Panic.
- Fright.
- Stress.
- Distress.
- Claustrophobia.

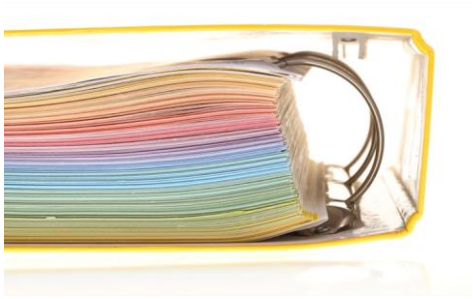
These may cause the casualty to be more difficult to handle and extricate.

When reporting on the condition of casualties you should include:

- Status upon arrival.
- Treatment provided.
- History.
- Observations made.
- Changes in conditions.
- Need for confidentiality.

The more information you have available, the better you can plan out the rescue operation.

3.2 LOCATE THE CONFINED SPACES WORK PERMIT



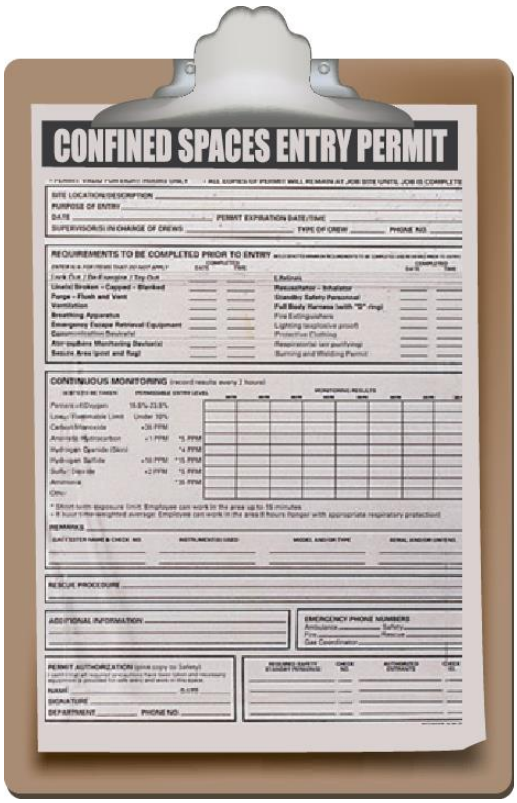
All rescue personnel/workers should be aware of the location of the confined spaces work permit so that they can refer to it when necessary.

This may be at or near the worksite.

The permit should be kept in a clean condition so that the information can be clearly read without causing confusion.

A confined space permit should include details of:

- Location, description and duration of work to be done.
- Hazards that may be encountered.
- Atmospheric test and monitoring requirements and results.
- Hot work.
- Authorisation.
- Isolation, lock-out, tagging out processes.
- Hazard control measures (e.g. signs and barriers).
- Personal protective equipment and clothing.
- Other precautions (e.g. signs, barricades).
- Size of work crew.
- Stand-by personnel/workers and emergency response and rescue arrangements.
- Other requirements as determined by risk assessment and in accordance with legislative requirements and relevant Australian Standard AS 2865-2009.



Once issued, you must confirm that the details in the work permit reflect the identified hazards, risk assessment and implemented hazard control measures.

The permit should meet the requirements of AS 2865 or other appropriate standards.

3.2.1 CONFIRMING CONFINED SPACE READINESS FOR ENTRY

Before entering the confined space make the following checks.

Checks to be made before entering a confined space:	
Isolations are complete and appropriate.	☐
Isolation provides positive isolation.	☐
Atmosphere is safe (or if necessary relevant measures are in place to ensure safe entry into an unsafe atmosphere).	☐
Safe entry and exit methods are in place.	☐
Access points are large enough for people (including emergency personnel) and equipment to pass through.	☐
Access points should also be adequately provided with ladders, platforms or walkways, should not be obstructed by equipment and should be adequate in number for emergency rescue and ventilation requirements.	☐
Other items to ensure compliance with procedures, permits, relevant legislation and AS 2865 are in place.	☐

If you find that the confined space is not ready for entry you may need to report the deficiencies to an authorised person for rectification. You may refuse to enter the confined space until the situation is corrected.

3.2.1.1 STAND-BY PERSONNEL/WORKERS

Before any workers enter a confined space make sure all necessary safety procedures and standards have been followed including hazard identification and control.

Make sure you have effective emergency procedures in place and that all personnel/workers are aware of them. Rescue equipment should be positioned close to the point of entry and prepared ready to be used and all rescue workers should be fully trained.

A **Stand-by person** should remain as close as possible to the confined space.

A stand-by person should:

- Be fully trained and competent.
- Be in continuous communication and (if possible) visual contact with those inside the confined space.
- Be ready to immediately initiate emergency response procedures.
- Be continually monitoring hazards both inside and outside the confined space.
- Maintain clear access and egress (entry and exit).
- Not be involved in any other work while personnel/workers are within the confined space.

The stand-by person should not attempt to enter the confined space unless properly trained and equipped to deal with an emergency.

There should also be another stand-by person outside the confined space to help them if they should require assistance.

3.3 ENTER THE CONFINED SPACE

No person may enter a confined space unless:

- The risk assessment has been reviewed.
- They have written authority to enter the confined space.
- The written authority includes any risk control measures or precautions necessary (including the number of stand-by people required) for the safe entry and execution of the work.
- They are made aware of, understand and comply with the written authority.
- A record of their presence in the confined space is made.
- Appropriate and sufficient arrangements have been made for emergency response and rescue of persons in the confined space.

Preparations for entry to a confined space should accord with Australian standards and local procedures.

All tagging and lock-out requirements listed in the work permit must be applied before the confined spaces work may begin.

Once all the preparation has been completed you may begin entering the confined space.

3.3.1 MONITORING THE ATMOSPHERE

The confined space should be continuously monitored while it is occupied by a worker.

Re-testing and continuous monitoring of the atmosphere may be necessary due to the work being done or the disturbance of hazardous material, such as sludge.

The space must be continually monitored where the concentration of flammable gas or vapour in the space is equal to or greater than 5% but less than 10% of its lower explosive limit.

There should be continued atmospheric testing while any workers are inside the confined space/area:

- At intervals depending on changing conditions.
- No less frequent than hourly.
- Continuously until the job is completed.

Continuous monitoring can also be done by the worker wearing a continuous monitoring device.

The device should be capable of sounding an alarm if dangerous gas levels or oxygen deficiency develop.

If there are strong indications that the atmosphere may change suddenly, all people entering the space must wear self-contained breathing apparatus.

3.3.1.1 THE EFFECT OF IRRESPIRABLE ATMOSPHERES ON THE RESPIRATORY SYSTEM

The respiratory system is comprised of the mouth, nose, windpipe, lungs and pulmonary blood vessels that surround the lungs.

In this body system oxygen is exchanged into the blood while carbon dioxide is breathed out. Without the respiratory system working efficiently and effectively, the human body will die.

Respiration in healthy adults is normally approximately 16-20 breaths per minute.

However, breathing rates can increase significantly when the body is exercising, stressed, or in poor atmospheres.

The lungs cannot sustain the breathing in of irrespirable atmospheres for long periods (depending upon the type of atmosphere).

Some atmospheres can burn the lungs, while others can cause problems such as hypoxia, which can be deadly.

It is for these reasons that breathing apparatus is used when dealing with irrespirable atmospheres.

3.3.1.2 IRRESPIRABLE ATMOSPHERES THAT REQUIRE A BREATHING APPARATUS

Dusts, gases, fumes, mists and vapours are common hazards in workplace air. These can seriously affect the health of workers. Breathing in asbestos fibres can lead to asbestosis and lung cancer while crippling lung diseases can be caused by the inhalation of certain dusts.

Inhaling some chemicals, such as solvents, can damage many parts of the body including the brain. Welding fumes, smoke, mists from spray painting are also serious respiratory hazards and workers should be adequately protected from exposure to any of them.

Irrespirable atmospheres are atmospheres that are unfit for breathing, or are incapable of supporting life.

Irrespirable atmospheres include:

Heated Atmospheres

High temperature air can burn the airways. The respiratory system can be damaged even if the temperatures are not high enough to be unbearable to the skin.

Anything over approximately 130 degrees Celsius could result in irreversible damage to the lungs.

Asphyxiating Atmospheres

Asphyxiating atmospheres are oxygen deficient. Any atmosphere that has less than 19.5% oxygen is not going to be able to support breathing activities.

Hypoxia is the result of inadequate oxygen. Signs of hypoxia include rapid breathing, gasping for air, blueness of skin, confusion, irritability, unconsciousness and death.

Toxic Atmospheres

Toxic atmospheres can occur due to the release of toxins and poisons in materials that have been burnt in a fire.

Air Contaminated With Smoke Or Suspended Particles

Air that is contaminated with smoke or particles is unbreathable.

Particles can settle in the lungs and will restrict the amount of oxygen that can be taken into the body. These particles within the lungs may then develop into other respiratory problems.

3.3.2 RESPONDING TO UNACCEPTABLE ATMOSPHERIC READINGS

If initial testing shows that the space is contaminated in any way you will need to take action.

This could be done a number of ways such as:

- Purging the atmosphere by blowing air through the space.
- Extracting toxic gases with a suitable exhaust system.
- A combination of blowing and exhausting.

Care should be taken to prevent people outside the confined space from being exposed to gas while the atmosphere inside the confined space is being purged. Care must also be taken when purging flammable gases.

Do not use pure oxygen or gases with a higher oxygen level of 21% for purging purposes. Ventilation through exhaust fans can be used to remove hazardous gases and contaminants. Any purging of a confined space needs to be followed up with proper ventilation procedures.

Alternatively, people can enter the space if they wear an approved air-supplied respirator (self-contained breathing apparatus), so long as there are no flammable gases present in the confined space.

Testing should be done prior to entering the confined space and needs to be done on a continuous basis while confined spaces operations are conducted, or in accordance with the confined spaces permit.

3.3.3 CORRECTLY FITTING AND USING RESPIRATORY EQUIPMENT

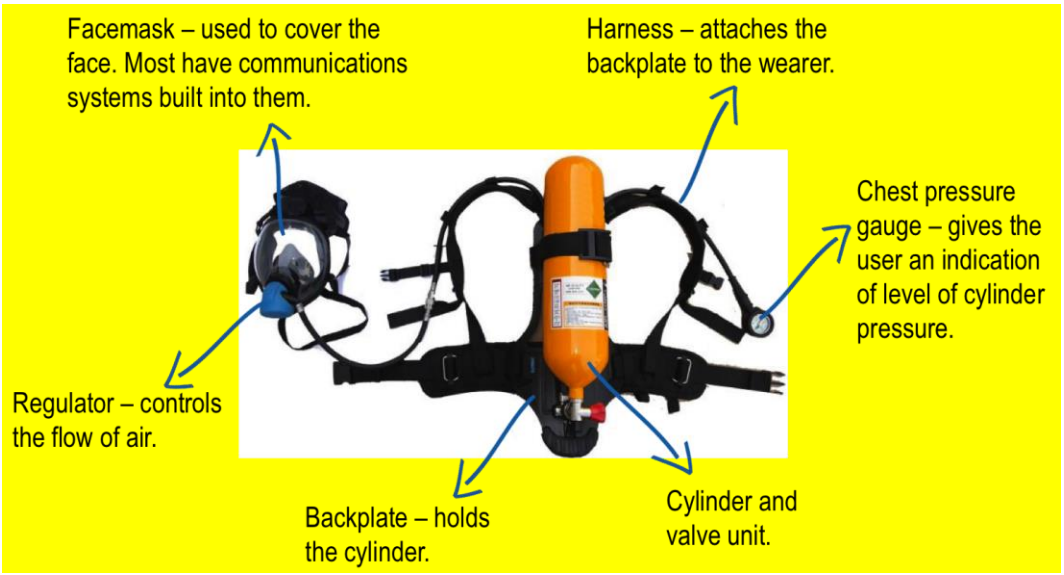
There is no purpose in wearing a respirator if it does not fit, or it is worn incorrectly.

People are different shapes and sizes and equipment comes in a variety of brands and sizes.

Correct fit and comfort are just as important as technical effectiveness.

3.3.3.1 COMPONENTS OF A BREATHING APPARATUS

A breathing apparatus has a number of components, but typically includes:



3.3.3.2 DONNING THE BREATHING APPARATUS

Once all pre-use tests and checks have been conducted, it is time to don the breathing apparatus.

There is no purpose in wearing a respirator if it does not fit, or is worn incorrectly.

Faces are different shapes and sizes and respirators come in a variety of brands and sizes to match.

Correct fit and comfort are just as important as technical effectiveness.

Once a mask has been selected, the wearer must be shown how to fit it.

Breathing apparatus should always be donned in a specific order to ensure all components are attached and working correctly. Your organisational procedures and manufacturer's specifications will provide you with this order.

Breathing apparatus must be donned and started in fresh air.

3.3.3.3 FIT SELF-CONTAINED BREATHING APPARATUS

Correct fit of a mask requires contact with smooth skin – this makes masks unsuitable for men with beards or moustaches.

Even a one day growth of a beard has been shown to allow nearly 1% penetration of a full face-piece.

This is unacceptable with very toxic or carcinogenic substances. Small beards or moustaches which fit inside the face-piece are also unacceptable as they may cause an exhalation valve to fail if a hair lodges in it.

Glasses must not be worn inside a face-piece unless they are specially designed for the purpose, as the earpieces will prevent a good seal.

These face-pieces are also unsuitable for people who wear contact lenses. Workers who wear glasses or contact lenses should be supplied with air-supplied hoods or helmets.

Breathing apparatus should always be donned in a specific order to ensure all components are attached and working correctly. Your organisational procedures and manufacturer's specifications will provide you with this order.

Breathing apparatus must be donned and started in fresh air.

Coat Method:
The coat method requires you to:
1. Lay out the breathing apparatus as required.
2. Swing the apparatus onto one shoulder, and then onto the other as you would don a jacket.
3. Tighten all straps, buckles and attachment points.
4. Ensure that the pressure indicator is in a position so the dial is easy to read.
5. Don the facemask, check the seal, airflow and safety devices.
6. Ensure the helmet is in place and connected.

Some organisations require a second person to check that all equipment has been donned correctly.

3.3.4 STARTING AND CHECKING BREATHING APPARATUS

Each breathing apparatus set will have a variety of components which need to be started and checked in accordance with your organisation's procedures.

Once you have correctly donned the breathing apparatus you will need to perform a negative test, an audible alarm test and a positive test.

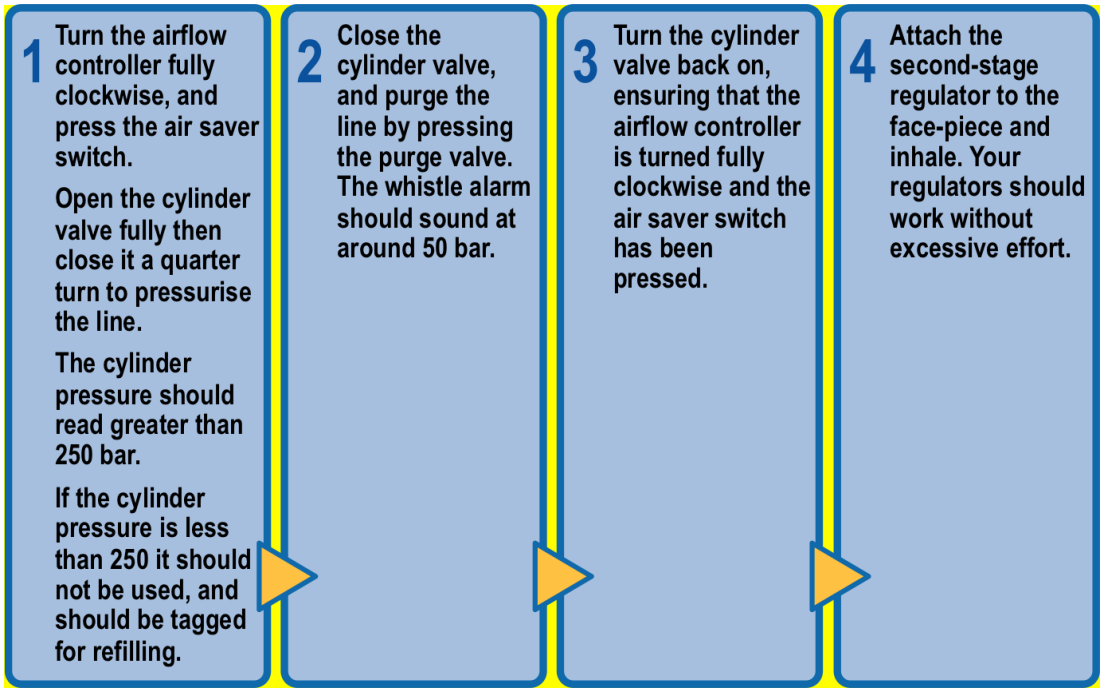
3.3.4.1 NEGATIVE TEST

Prior to attaching the supply air tube to the facemask, block the end of the inhalation tube on the mask with the palm of your hand while trying to inhale.

If the face-piece is fitted correctly it will collapse against your face. If not, make adjustments and try again.

When you exhale through the exhalation valve no sticking should be evident.

3.3.4.2 AUDIBLE ALARM TEST



3.3.4.3 POSITIVE TEST

The positive test is also known as the leak test. While breathing normally, place a finger under the edge of the facemask. This should create a high airflow from this point.

Your organisation may have different procedures to be followed in starting and checking the breathing apparatus. Always follow your procedures, and do not use any equipment that fails any testing.

3.3.4.4 OPERATING IN BREATHING APPARATUS

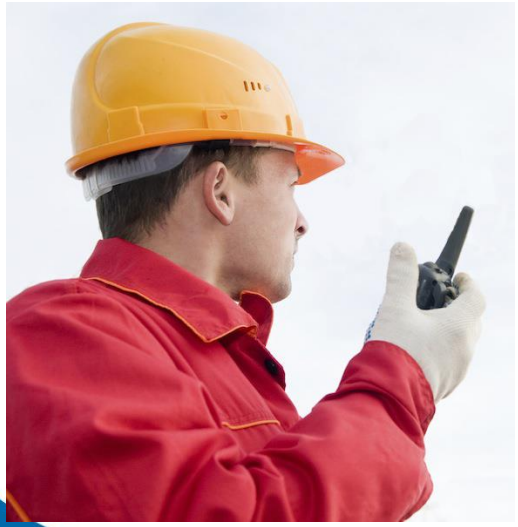
Undertaking activities while wearing breathing apparatus requires teamwork and attention to detail.

With breathing apparatus on, your vision is limited. You must make more of an effort to look around you and also trust your other senses.

When moving through dark, low-visibility or smoke-filled areas, use your hands and feet effectively.

Activities should be conducted in a methodical manner with one side of your body near a wall where possible. Stick within your designated area unless you receive permission to deviate from this area.

Checking your breathing apparatus gauges regularly is important. You can move through your air tank more quickly than you think.



3.3.5 ESTABLISH AND MAINTAIN COMMUNICATIONS

Communications within the workplace are essential to your safety and the safety of all others around you.

It is essential that you are able to understand and use the communication systems that apply to the situation.

This includes establishing your communications initially, and maintaining communications with appropriate personnel/workers throughout the operation.

3.3.5.1 COMMUNICATIONS EQUIPMENT

Communications equipment could include:

Integrated Radios
Integrated radios are built into the breathing apparatus.

Portable Radios
Portable radios will have limited usefulness when using breathing apparatus and may have limited range due to atmospheric conditions.

Communication Sets
This is the name given to the complete communication equipment.

Communication sets consist of a microphone, battery, cables, amplifier and built-in speakers.

The way communication sets are used depends on the type of equipment and the manufacturer's operating guidelines. These instructions can vary so it is essential that you follow the manufacturer's operation manual for the equipment you are using.

Signal Lines
Depending upon your organisation, signal lines may be a line similar to the main guideline, which will transmit predetermined signals. It may also be a communications cable, which can be connected to communications equipment.

Hand Signals
Hand signals must be understood for clear communications to occur. Most organisations will have signals that apply only to their worksites, or that have been designed for a particular task.

If hand signals are going to be used during the work make sure you are familiar with them and that you practise them before entering any confined space.

Distress Signal Unit

Most Distress Signal Units (DSU) will have a dual activation system which will trigger an alarm automatically if movement is not detected within a certain timeframe (up to 1 minute of no movement), or the alarm could be set off manually.

The process for setting off your Distress Signal Unit will depend upon the make and model of equipment.

3.3.6 WORK AS A MEMBER OF A TEAM

You should always comply with permit conditions while working in a confined space.

If permit conditions and requirements are deviated from then they should be reported and corrected and the permit re-authorised and re-issued by a competent person.

Follow all safety procedures to maintain personal safety while doing any work that requires breathing apparatus.

Stay in constant effective communication with other personnel/workers including the standby person. Always use communication equipment correctly.

There should be constant monitoring of equipment and changes in the environment while work is being carried out. Damage to equipment, changes in the atmosphere and movement of workers can all create new hazards.

Atmospheric variables that need to be monitored include:

- Heated atmospheres.
- Asphyxiating atmosphere (oxygen deficient).
- Toxic or poisonous atmosphere (non-skin absorption).
- Smoke or suspended particles/fibres in atmosphere.

New hazards that arise while you are working within a confined space may require you to use new hazard controls or revalidate a permit.

Do not work past the time allowed for the work to be done within the confined space. Keep an eye on the amount of time the work is taking.

If you are using a gas monitor and the alarm sounds, all personnel/workers should leave the confined space immediately.

Complete confined space entry logs, ensuring that all entry and re-entry of persons working within the confined space are accurately recorded.

Breathing apparatus team numbers will be determined by your organisation, the situation, the requirements of the task and the available resources.

At a minimum there should be 2 people working together so that appropriate action can be taken in the event of an emergency.

Effective communication will assist the team to work cohesively and effectively in completing the work safely.

You should have trust in your team members, and you should know how to perform your role within the team.

3.3.6.1. MAINTAIN PERSONAL SAFETY AT ALL TIMES

Your personal safety should be considered your highest priority while using breathing apparatus.

Maintaining your personal safety may involve the following important points:

- Know, understand and follow the procedures for the activities you will be undertaking. This is the most important safety tool you have.
- Notify your supervisor of anything that may impact your ability to undertake activities.
- Use all equipment for the intended purposes and in the correct manner.

- Check breathing apparatus regularly and remove yourself from any situation if your equipment malfunctions.
- Be observant of the conditions around you. This could help you to avoid hazard or injury.
- Undertake a risk analysis before starting an activity.
- Work with your team members to achieve the goals.
- Keep yourself attached to the guidelines used to guide you back.

Personal safety is something that can be overlooked during situations requiring immediate response. Always take the time to ensure your safety during any activity.

3.4 FOLLOW RESCUE SYSTEM TO ACCESS CASUALTIES

The rescue system that is established will depend on the type of incident, environmental conditions, the size of rescue team and equipment availability and limitations.

All equipment and techniques should be prepared and used in line with manufacturers' guidelines and organisational procedures.

3.4.1 HAULING SYSTEMS

Knowledge of lowering and lifting techniques is essential when raising or lowering rescuers or casualties with a hauling system during rescue operations.

The hauling team should be properly briefed before operations, be kept informed of all changes in circumstances, and remain alert at all times.

3.4.1.1 LIFTING

A basic hauling system consists of a hauling team pulling in a direct line from the edge or, if space is limited, hauling from the side using a direction-changing pulley. An ascender or Prusik knot/loop should be attached to the rescue line to allow the haul crew to rest and to catch the rope in the case of system failure.

A mechanical advantage of 3:1 can be gained through the use of a 'Z' pulley system.

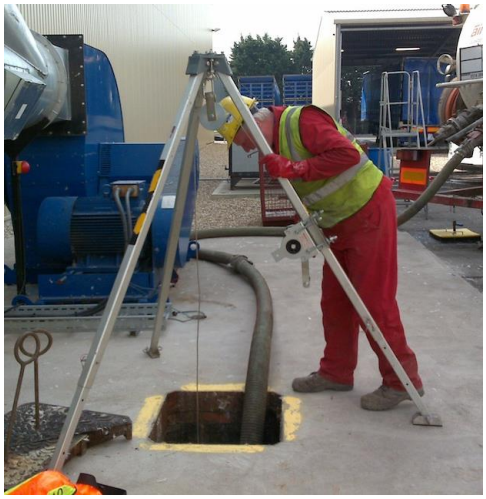
Note: A Prusik knot/loop is a friction hitch or knot used to put a loop of cord around a rope. A Prusik does less damage to a rope than ascenders. DO NOT use specialised knots or hitches unless you have been fully trained in their use.

3.4.1.2 LOWERING

The two methods of lowering are direct lowering and friction lowering.

Direct lowering is set up like a basic hauling system except that the ascender is disarmed and the team pays out the rope.

Friction lowering uses an in-line descender.



3.4.2 ANCHORS

It is essential that any rescue system has reliable, effective anchors. Anchors may include:

- Existing structures in the area (e.g. trees, buildings, columns).
- Vehicles – vehicle anchors should be placed at right angles with the parking brake on.
- Artificial devices – make sure you are fully trained in their use.

3.4.3 TRENCH RESCUE EQUIPMENT

A rescue operation involving rescue from a trench would require the use of shoring shields or propping equipment, and the use of pneumatic equipment to prop up the debris to un-tangle the casualty.

The rescue could also require the use of a breathing apparatus.

Excavation rescue equipment could include:

- Breathing apparatus.
- Shoring shields.
- Propping equipment.
- Excavating tools.
- Safety lines.
- Rescue lines.
- Rescue multi-knives.

3.5 TREAT CASUALTIES

All casualties should be assessed, packaged and treated according to the appropriate procedures. How you package and transport casualties will depend on their health status and injuries.

First aid should only be applied by medical personnel or someone holding a current First Aid certificate.

All personnel/workers should deal with casualties in an empathetic and reassuring manner.

All survivors must be treated and rescued from the confined space before beginning the disaster identification procedure.

3.5.1 APPLYING HYGIENE PROCEDURES

If you are required to treat casualties during the rescue operation, make sure you follow all organisational hygiene procedures such as:

- Washing your hands or using a hand sanitiser.
- Wearing gloves and other appropriate protective clothing (face mask/shield/goggles).
- Using sanitised bandages and first aid equipment.
- Maintaining strict control of body fluids between casualties.

3.6 REMOVE CASUALTIES FROM CONFINED SPACE

Once casualties are stabilised you will need to bring them out of the confined space.

3.6.1 MOVING CASUALTIES

You may need to move a casualty because of hazards in the environment or restrictions in accessing the casualty for proper treatment.

As a general rule you should always bend your knees and not your back when lifting. By lifting this way you can help to avoid injuring yourself or straining your back.

Understand your own limitations and strength and where possible get somebody to help you to move the casualty. Don't injure yourself in the process of moving the casualty – you could cause further harm to the casualty if you drop them.

As a guideline, the casualty should be comfortable in being moved. If in doubt, it's always best to ask the casualty (if they are well enough to speak) about what is appropriate and inappropriate in terms of moving them.

When moving the casualty, be careful not to twist or bend their neck and back as it may aggravate injuries.

If at any time the movement of the casualty appears to be making their condition or injuries worse, immediately stop moving them.

Where possible move a casualty using a stretcher or similar equipment to minimise the amount of disruption to the casualty and avoid further injury to them.

It is always best, if possible, to plan how you will move a casualty.

You should take into consideration factors such as the conditions of the scene, the size of the person in relation to your own health and physical strength and ability, whether there are others nearby who may be able to assist in the movement, and particularly the casualty's condition.

Wherever possible you should always seek assistance from others to help move someone. This will not only reduce the risk of injury to yourself, but also to the casualty.

Any person you seek assistance from should be asked whether they themselves are injured and whether moving the casualty may make that injury worse or cause further injury to the casualty.

3.6.1.1 ONE-PERSON LIFTS AND DRAGS

If there is no one available to assist you could perform one of four drags.

For each of the following the casualty should be positioned on their back.

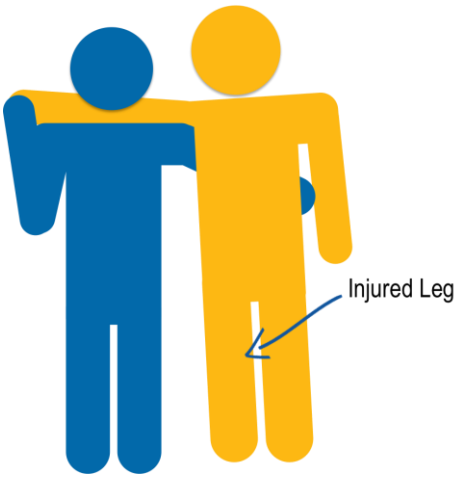
Ankle Drag	▸ Casualty is pulled by the legs, with first aider holding ankles. ▸ Used for people too large to move in any other way. ▸ Best used when on smooth surfaces. ▸ Little protection offered to the casualty's head and neck. ▸ Less risk for the first aider.
Arm Drag	▸ Casualty is dragged head first. ▸ Casualty's arms should be raised above the head. ▸ Hold on to the elbows, using the casualty's arms to cradle their head, providing some head and spinal stability. ▸ Do not lift the head and arms/shoulders off the ground. ▸ If a head or neck injury is suspected use the arm drag. ▸ Potentially exhausting for the first aider and may result in back strain.
Clothes Drag	▸ Not recommended for suspected back/neck/spinal injuries. ▸ Open the top buttons of shirt/jacket – avoids applying pressure to casualty's throat. ▸ Loose fabric should be gathered in tightly behind the casualty's neck – provides head/neck support, along with cradling of hands around head. ▸ Drag the casualty to safety, pulling on clothing. ▸ Potentially exhausting for the first aider and may result in back strain.
Blanket Drag	▸ Preferred option if removing a victim from confined space. ▸ Blanket is placed alongside the casualty, with the side closest to casualty bunched up. ▸ Kneel beside the casualty, roll them onto their side, pulling towards your knees, then pull the blanket under the casualty, roll them on to blanket and pull the bunched section over them. ▸ Grasp the blanket under the casualty's head and pull backwards.

With all types of drag movements you should move the casualty in line with the longer axis of the body to prevent any/further injury to the spinal cord.

There are a variety of lifts that may be used, however they can require considerable strength and often provide little support for the back, neck and spine of the casualty and should not be attempted if spinal injuries are suspected.

Common one-person lifts include:

One-Person Arm Carry/ Cradle Carry	▸ Most suitable for children and small adults. ▸ Casualty is carried with the first aider's arms under the casualty's legs and behind their shoulders/back.
Firefighter's Carry	▸ Used for carrying over longer distances. ▸ Difficult to get in position from the ground and/or when alone. ▸ Casualty is carried over one shoulder. ▸ The first aider's arm on the carrying side is wrapped across the casualty's legs and grasps the casualty's opposite arm.
Pack-Strap Carry	▸ Used for carrying over longer distances. ▸ Provides better support for the casualty's neck etc. than a fire-fighter's carry. ▸ Both of the casualty's arms are placed over the first aider's shoulders. ▸ First aider crosses the casualty's arms and grips the opposite wrist with one hand. ▸ Casualty's arm is pulled close to the chest. ▸ First aider bends slightly at the waist, balancing the load on their hips and supporting the victim with the legs.



If the casualty is conscious and able, you may be able to assist them through a one-person assisted walk (sometimes referred to as a 'human crutch').

This should not, however, be used if the person has a shoulder, rib or upper arm injury.

To carry out a one-person assisted walk, stand next to the person, with their arm closest to you across your shoulders and hold on to that hand.

With your other hand provide support by placing it around the casualty's waist, supporting their weight while you both walk. If they have an injured leg you should stand on the injured side.

3.6.1.2 TWO-PEOPLE LIFTS

It is much safer for everyone involved if two (or more) people are able to move a casualty together.

If the casualty is conscious and able to stand you can conduct a two-person assisted walk, which is the same as the one-person assisted walk, but with the second person standing on the casualty's other side.

If the injured person is unconscious or has serious injuries you should use the two-person fore-and-aft carry.

Two-Person Fore-And-Aft Carry:

1. Support the person in a sitting position from both sides and cross their arms in front of their chest.
2. One first aider, usually the larger and stronger, moves behind the injured person and grasps the casualty's wrists, reaching under the armpits.
3. From the side the other first aider places one hand and forearm under the casualty's things and knees, holding the thighs firmly. The other arm is placed around the persons back.
4. Using clear communication the first aiders stand, lifting the person and moving quickly to a safer location.

3.6.2 REMOVING CASUALTIES

Casualties may need to be lifted out of the confined space.

This can be done with stretchers or harnesses depending on the condition of the casualty.

3.6.2.1 STRETCHERS

Stretchers are used to rescue seriously injured casualties. They should also be used when casualty injuries are not known.

It is better for the casualty to be carried in a stretcher in a horizontal position (using a four point lifting bridle) but a vertical position can be used if necessary (using a two-leg lifting sling).

When using stretchers make sure that:

- The rescue system can take the full load of equipment, rescuer and casualty.
- The rescuer approaches the casualty carefully and from one side.
- If possible, an escort (or sometimes two escorts) stays with the stretcher as it ascends or descends so they can monitor and reassure the casualty and manoeuvre the stretcher where necessary.
- Escorts are rigged to an ascent system.
- The casualty is adequately secured in the stretcher with straps, belts or lashing.
- The casualty is fitted with a safety helmet and eye protection.
- The casualty is securely blanketed to retain body heat.
- Effective lifting and lowering systems are used.

3.6.2.2 HARNESSES

All harnesses should be correctly fitted and used according to the manufacturers' specifications.

Harnesses come in different shapes and types.

Ensure that the casualty is correctly wearing the harness before extraction.

3.7 PRESERVE THE INCIDENT SCENE

Appropriate steps should be taken to preserve the incident scene.

After the rescue has been completed it may be necessary for an investigation to be carried out by law enforcement agencies.

This is particularly important if a death has occurred or a crime has been committed.

An incident/accident scene must be secured for a number of reasons, including:

- To allow incident investigators or police to conduct their activities.
- To maintain public safety.
- To preserve the actual scene/site.
- To protect and preserve any evidence within the scene and the area of origin of the incident.

Incidents attract attention, and therefore spectators can be expected. In the interests of public safety you are required to control and confine them to a specific area out of harm's way.

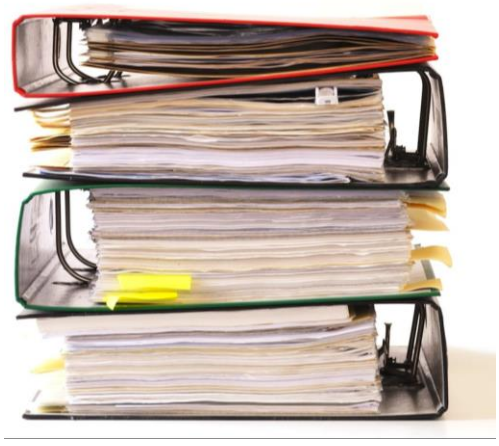
It should be remembered though, that most members of the public will try to stay out of the way and are not trying to make the task more difficult or dangerous.

If you are polite but firm most people will do as you wish. For those that do not, the police are never far away from an incident.

Speak with the officers when they arrive on scene and explain the problem you are having and then leave it to them to control the crowds.

Scene preservation activities are always carried out in line with legislative requirements and these vary from state to state. In addition, each emergency service organisation will have different scene preservation requirements.

It is your responsibility to understand and comply with the legislative and organisational requirements that apply to your particular emergency response team.



For information and details about current legislation and organisational requirements for preserving the incident scene, refer to your organisation's procedures, operational manuals and other documentation.

If you are in any doubt about requirements, speak with your supervisor or team leader.

3.7.1 ERECTING A CORDON

Emergency response procedures may require you to erect a cordon. This involves erecting purpose-designed tape around the whole area, plus an additional 10 to 20 metres, but follow your organisation's requirements for the exact dimensions.

If you do not have access to tape, mark the exclusion zone as best you can by using other resources such as rope, tree branches, pieces of timber etc.

Your organisation may require you to stay within the cordon until the incident investigation team or the police relieve you. You could be asked to notify them directly but normally your supervisor will do this through the appropriate channels.

3.7.2 COLLECTING EVIDENCE AT THE SCENE

You may be required to help collect evidence at the scene. This evidence may include:

- A copy of the entry permit or permit to work.
- Information received from bystanders.
- Information received by witnesses and emergency services personnel.

Make sure that you clearly record the details of all people that you talk to for future reference including:

- The name and contact details of the person.
- The reason the witness was on or near the scene.
- The time they were at the scene.
- Their relationship to any casualty (if applicable).

- Any first aid or other assistance they may have administered.
- Exactly who and what they saw or heard at the scene.
- Any activity by other persons that may seem suspicious or unusual.
- Other relevant information.

3.7.3 RECORDING AND REPORTING DETAILS

The primary details that will need to be recognised and recorded will include:

- The type of incident.
- Date of the incident.
- Time of the incident.
- Location of the incident.
- Injuries treated at the scene.
- Damage caused by the incident.

Secondary details, depending on the type of incident, could include:

- Details of who is present at the incident.
- Property involved.
- Size and construction type of any buildings involved.
- Status of utilities – e.g. broken pipes, fallen electricity lines, etc.
- Possible causes of the incident – if you have the training and experience to give this opinion.
- Items of evidence – do not move or disturb them, just note their location.
- Environmental details if required – these will include animal species present, other fauna in the area, flora details and any environmental impacts of the incident.

If possible, try to avoid adding materials to the area and monitor where you are walking so your movements can be excluded by the investigative team.

All information that is observed on the scene should be recorded and reported, as it may be useful in a later investigation. No detail is too small to be included, even if you don't think it has very much value at the time.

Details of the scene will need to be recorded in accordance with your organisational procedures and requirements.

These will outline commonly used methods for recording and reporting such as:

- Note-taking.
- Completing standard forms.
- Sketches.
- Photographs.
- Audio and video recording.

3.7.3.1 NOTE-TAKING

Each team member will see and remember different details of an incident.

Each person should therefore keep notes and complete a separate incident report.

The varied views and information can assist investigators to build a clear picture of events.

Verbal or written reports could be required at the scene or later back at base or the incident control room.

3.7.3.2 STANDARD FORMS

Printed incident response sheets can be used to ensure basic details are not forgotten. They will have space for observations and additional details.

3.7.3.3 SKETCHES

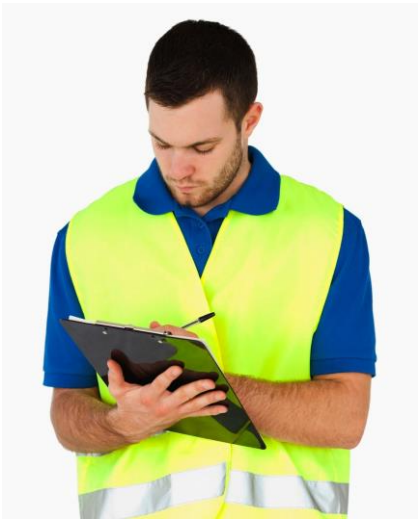
Where possible, distances and perspectives should be included in reports and sketches of the incident scene.

Estimating distance can be difficult for some people. If you have trouble with it, ask a team member to estimate the distance as well.

Some teams will keep a large, 30 or 50 metre tape measure as part of their incident response equipment.

A quick method of estimating distance is to step it out. An average-sized adult will have a stride of approximately 1 metre when they stretch the step.

Another estimating device could include using environmental cues to gauge scale or distance, e.g. the size of a car, truck, tree, fence compared to some other feature.



3.7.3.4 PHOTOGRAPHS

Photographs are very accurate but care should be taken when photographing people without their knowledge or permission.

It is generally best to focus on photographing evidence.

If the camera allows, ensure that you date and time stamp the photos.

Remember to tell incident investigators you have photos of the scene.

3.7.3.5 AUDIO AND VIDEO RECORDING

Taping and videoing have similar restraints to photographing the scene. If you are asked by anyone not to tape them, make a note of this for the investigators.

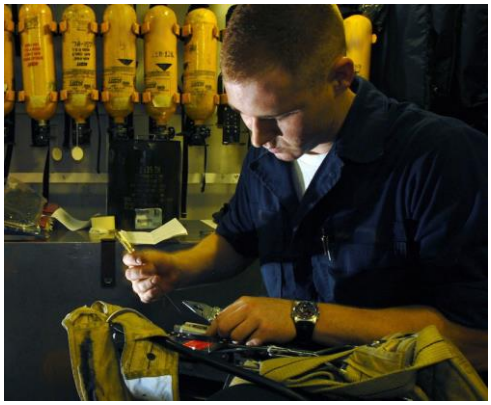
Where possible, date and time stamp all images as they are recorded. Some equipment also has GPS capability to record the location. Ensure investigators are aware that video or other taping is available.

3.8 RECOVER AND MAINTAIN TOOLS AND EQUIPMENT

Tools, equipment and materials should be cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices.

After using tools and equipment, it is important to ensure they are:

- Cleaned by removing all dirt, mud moisture or other contaminants, in accordance with manufacturers' specifications.
- Checked for any damage – If anything is wrong, apply tagging and lock-out procedures and report it to your supervisor.
- Maintained in line with manufacturers' recommendations or your worksite procedures/standard work practices, e.g. greasing of metal surfaces or lubricating moving parts.



- Stored correctly in the appropriate location – Most equipment will have designated storage instructions to ensure the items are kept free from damage and can be easily found the next time they are needed.

The procedures for cleaning, maintenance and storage should be followed regardless of the type of equipment and tools being used.

Keeping them in the best possible condition prolongs their working life and ensures they are safe to use.

3.8.1 POST-OPERATIONAL INSPECTION AND MAINTENANCE OF GAS TESTING EQUIPMENT

Check the manufacturer's operating manual for maintenance instructions.

This could include cleaning, replacement of components or re-calibration.

Each unit may require different maintenance procedures. Incorrect procedures may lead to equipment failure.

Some gas detectors require routine replacement of cartridges and equipment calibration to keep them in proper working order. Batteries may need to be recharged or replaced.

IR (infra-red) gas detectors may need to have the lens cleaned if it becomes dirty. Refer to the manufacturer's operating manual for instructions on maintaining gas testing equipment.

If any parts need to be replaced refer to the manufacturer's operating manual.

Gas testing equipment should be stored in a dry clean area within the temperature limits outlined by the manufacturer.

3.8.2 POST-OPERATIONAL REMOVAL, INSPECTION AND MAINTENANCE OF BREATHING APPARATUS

When you have finished using the breathing apparatus you need to close it down and safely remove it according to procedures.

The steps to be followed may include:

- Collecting the tally from the entry control officer.
- Turning off distress alarms.
- Removing your gloves and helmet.
- Loosening head harness straps.
- Removing the facemask.
- Undoing the waist belt and loosening the shoulder straps.
- Slipping off the harness and backplate.

Removal of the breathing apparatus should be done in line with your organisation's procedures.

If you are unfamiliar with these requirements, speak with your supervisor or other experienced personnel/workers.

3.8.2.1 CLOSING DOWN THE BREATHING APPARATUS

Once you have removed your equipment, you will need to close it down in accordance with your organisational procedures.

Closedown procedures could include:

- Shutting valves – ensure that the purge valve is closed, and the cylinder valve is turned to the off position.
- Disconnecting air hoses and removing the second stage regulator from the facemask.
- Releasing any air trapped in the system.
- Listening for the whistle alarm as the air pressure reduces to zero.
- Recording any problems with the system.
- Marking the tank or system to indicate that the cylinder requires filling.

The closedown procedures will vary depending on the organisation and the type of equipment being used. Ensure you are able to follow your organisation's closedown procedures.

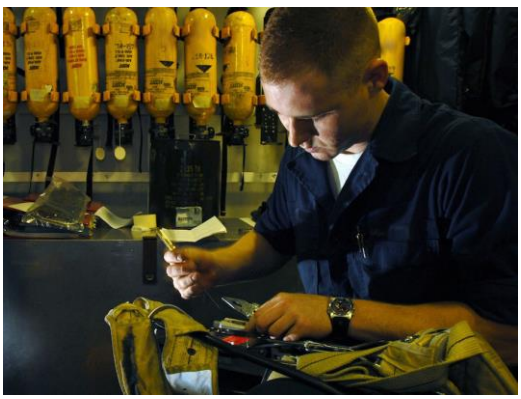
It is important for all safety equipment to be maintained. This equipment helps to protect you during dangerous tasks and you want to make sure that it will keep you safe. All breathing apparatus equipment needs to be kept clean, maintained and ready for use.

All maintenance of breathing apparatus must follow the manufacturer's procedures and AS1715 Selection, Use and Maintenance of Respiratory Protective Equipment.

All breathing apparatus should be inspected at least once per month and cleaned and examined after each use.

Breathing apparatus needs to be checked and maintained after use to ensure it is always ready for operational use.

If the equipment needs to be used in an emergency situation you need to be sure it is ready to use.



Maintenance activities should be completed in line with the schedule set by your organisation. However, all equipment should undergo a complete inspection and test after each operational use.

All breathing apparatus users should be provided with instructions about how to replace filters, canisters and cartridges and when to do so.

There must be practice drills and periodic refresher training in the use and care of the protective equipment.

Maintenance activities may incorporate:

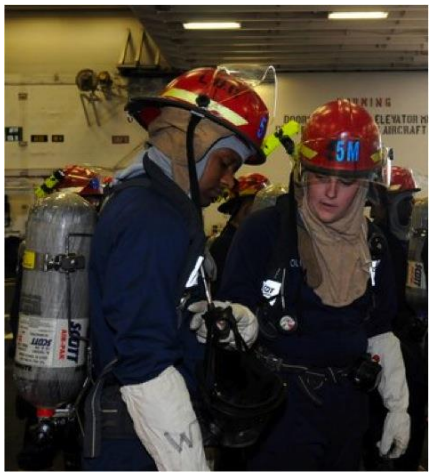
▸ Visual inspections.	☐
▸ Checking cylinder connections and valves are in working order.	☐
▸ Ensuring all straps, harnesses and buckles are in working order.	☐
▸ Replacement of filters and cartridges.	☐

▸ Cleaning the units.	☐
▸ Checking ancillary equipment.	☐
▸ Ensuring airflow.	☐
▸ Checking for leaks.	☐
▸ Checking harness – back plate	☐
▸ Checking cylinder and connections are working and not damaged	☐

Monthly activities could include:	
▸ Full inspection.	☐
▸ Harness inspection.	☐
▸ Cleaning and disinfecting.	☐
▸ Testing of cylinder pressures.	☐
▸ Testing flows by donning mask and breathing.	☐
▸ Testing the alarm devices in accordance with the manufacturer's specifications.	☐

Refilling of cylinders will need to be completed when required. Depending on your organisation this may be done on site, or at the premises of an authorised service provider.

Any breathing apparatus equipment that is faulty must be taken out of service and reported to the appropriate personnel/workers. They will ensure that the equipment is tagged out for repair or replacement.



Face-pieces should be washed in warm water with a detergent, then rinsed and air-dried. They may be disinfected with hypochlorite (bleach) solution.

Filters and cartridges should be replaced daily or when breathing becomes noticeably more difficult, indicating that the filter is becoming clogged. Respirators should be stored in a dust-proof container or locker.

All breathing apparatus users should be provided with instructions about how to replace filters, canisters and cartridges and when to do so.

There must be practice drills and periodic refresher training in the use and care of the protective equipment.

3.8.2.2 CLEANING THE BREATHING APPARATUS

Cleaning the breathing apparatus is essential for maintaining the useful life of the equipment and the health and safety of the people using it.

Most organisations will require you to clean the equipment regularly.

Clean Harness, Backplate And Hoses

When cleaning the harness, backplate and hoses you will need to follow the manufacturer's specifications.

These specifications will normally require you wipe the surfaces clean with a damp cloth (which has been wet in a cleaning solution).

Once the unit has been washed, wipe it over to remove any detergent residue.

Clean Facemask

Cleaning the facemask will require disinfectant made up to the manufacturer's specifications, or the use of non-alcoholic wipes.

Wipe over the mask inside and out with a damp cloth. Once the mask has been washed in accordance with the procedures for your organisation, the mask will need to be dried. Air drying is the most common method.

Facemasks may then need to be placed into protective plastic bags.

3.8.2.3 MAKING EQUIPMENT READY FOR OPERATIONAL USE

Breathing apparatus equipment needs to be kept in a constant state of readiness, as it may be required with little notice and preparation time.

Following the use of breathing apparatus, the process of removing, cleaning and maintaining the equipment will ensure that it is ready for the next operation.

This process includes the reporting and removal of faulty equipment.

Breathing apparatus equipment may also need to be stored in appropriate locations and storage cabinets, so that all personnel/workers can locate and access all items at short notice.

Each organisation will have specific procedures to ensure that equipment is made ready for operational use.

Ensure that you are familiar with your organisation's procedures.

3.8.3 REPORTING DEFECTIVE EQUIPMENT

If you find any safety or rescue equipment to be defective or faulty, you must isolate it from service and report the defect in accordance with workplace procedures.

This may include completing an equipment log or fault report.

3.9 IDENTIFY AND REPORT OPERATIONAL STRESS

Rescue operations can be extremely physically, mentally and emotionally stressful for rescue workers. Dealing with the pressure to perform and cope with tragic consequences and dangerous or unpleasant situations can have a serious toll on personnel/workers.

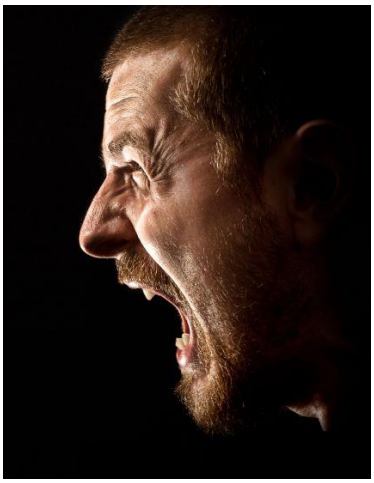
3.9.1 OPERATIONAL STRESS

Operational stress needs to be identified and dealt with promptly, effectively and with understanding.

Signs and symptoms of operational stress may include:

- Fatigue.
- Intolerance and irritability.
- Lack of focus.
- Indecision.
- Nausea.
- Headaches.
- Illness.

It is important for members of the rescue team to have a high level of self-awareness so they can identify the point where their stress level is too high or dangerous.



It is important that you tell someone if you are stressed. Don't try to be 'strong' and deal with the stress alone. This could put the rescue operation, yourself, and the rescue team in danger. You don't need to deal with stress and high emotional tension on your own.

If a person can recognise and monitor their stress levels it will increase the likelihood of the success of the rescue operation.

It's also important for the rescue team members to look out for each other.

3.9.2 OPERATIONAL DEBRIEFING

A rescue operation can be a highly emotional, highly stressful experience and debriefing is particularly important in these situations.

Operational debriefing provides an opportunity for rescue team members to talk about anything they've found particularly difficult.

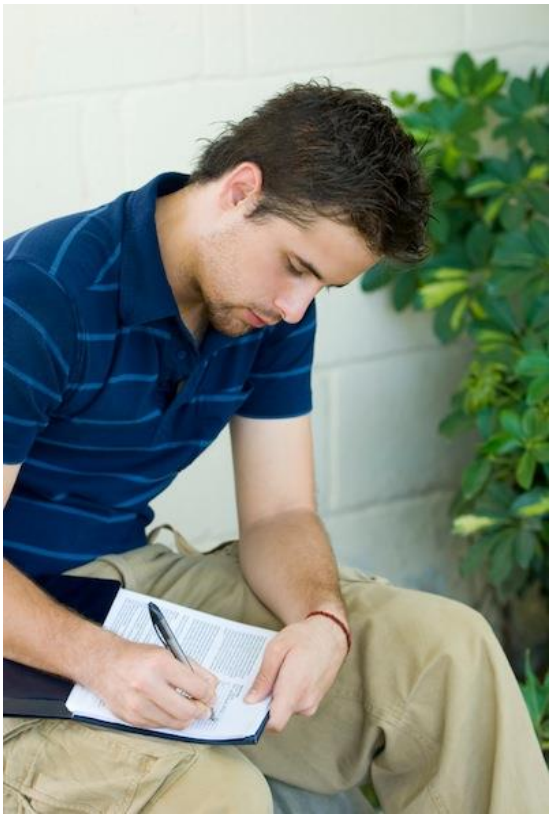
Further counselling may be recommended should the supervisor believe this is necessary. The organisation should cover the costs of this counselling.

Operational debriefing takes place once the rescue operation has been completed and the rescue equipment has been cleaned and returned to working order.

It is important that all personnel/workers are debriefed after operations are completed to make sure all information has been reported, issues have been discussed, and procedures have been reviewed. It may be necessary to include other agencies and organisations in debriefing procedures.

3.10 COMPLETE OPERATIONAL DOCUMENTATION

You will need to complete operational documentation, including the confined space entry log, withdrawal of permits, and any records related to the use and servicing of equipment.



3.10.1 WITHDRAWING THE CONFINED SPACE PERMIT

Generally the withdrawal from a confined space operation requires the following information to be signed off:

- Name of all workers who have exited from the confined space.
- Date and time of all exits from the confined space.
- All workers and equipment are accounted for.
- All equipment has been checked and stored in accordance with procedures.

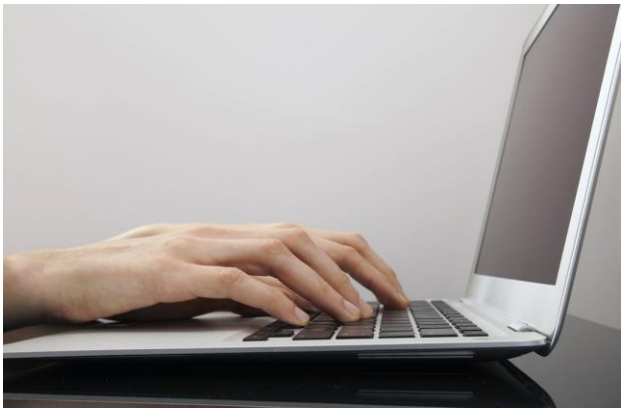
This information may be tracked on a tally board or the entry permit in line with entry control procedures.

The person in direct control of the confined space operation will need to make the final sign-off of the withdrawal of written authority (confined spaces work permit) once all of the above information has been confirmed.

3.10.2 COMPLETING RESCUE OPERATION DOCUMENTATION

Once the confined space rescue operation is completed you may be required to fill out organisational documentation outlining the operation, action taken and the occurrence of incidents.

Operational documentation should be completed and handed over to the appropriate person, department or agency.



Documentation may include:

- Organisational procedures and related legal requirements.
- Equipment and rope logs.
- Operational logs.
- Atmospheric monitoring records.
- Exposure records.
- Casualty details.
- OHS/WHS and other legal forms.
- Notes.
- Sketches.
- Personal notes.

You should also report any issues that may have arisen during the rescue operation such as:

- Feedback on the work and methods of improving the work process.
- Signs and symptoms of operational stress.
- Equipment malfunctions.
- Wear and tear of equipment and tools.
- Condition of safety and rescue equipment.
- Observations of the condition of the confined space.

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