

# LEE TRAINING SOLUTIONS

## COURSE GUIDE



**MSMPER300**

**ISSUE WORK PERMITS**

**REGISTERED TRAINING ORGANISATION 52370**

**LEE TRAINING SOLUTIONS**

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## 1.0 COURSE INFORMATION

### 1.1 UNIT OF COMPETENCY

A unit of competency is awarded to a candidate who has successfully achieved the required standard and has been deemed competent by an approved assessor. A Statement of Attainment is issued by a Registered Training Organisation when the candidate has completed all of the required outcomes.

### 1.2 APPLICATION OF UNIT

The unit MSMPER300 Issue work permits is a unit of competency which is conducted in accordance with relevant Australian Standards. This unit will allow competent persons to work in accordance with issued permits.

This unit of competency is suitable for the Mining, Resources and Construction industries

### 1.3 PRE-REQUISITES

- MSMWHS201 Conduct hazard analysis

Candidates must be over 18 years of age and have good Language, Literacy and Numeracy (LLN) skills in the English language. In a situation where LTS believes your LLN skills do not meet the required standard, a self-test maybe undertaken to determine your suitability for the course.

### 1.4 RECOGNITION OF PRIOR LEARNING

Lee Training Solutions as part of its registration requirements must offer Recognition of prior learning (RPL).

RPL is offered where a candidate has through previous work experience, prior qualifications and life skills that may form part of or all of the required performance criteria. Please contact Lee Training Solutions if you believe that you may be suitable for RPL.

### 1.5 PRIVACY REQUIREMENTS

The Privacy Act 1988 outlines the requirements for confidentiality of personnel records. As part of LTS registration requirements personnel records must be kept private and confidential. The candidate will be required to complete an authorisation form prior to the course commencing, to allow LTS to pass on any of the candidates results or personnel details obtained, as part or whole of the training process.

### 1.6 UNIQUE STUDENT IDENTIFIER NUMBER

The Unique Student Identifier (USI) number was proclaimed on the 27<sup>th</sup> June 2014. It is a requirement that as of the 1<sup>st</sup> of January 2015, all candidates undertaking training in the VET sector in Australia supply a valid USI number to the registered Training Organisation prior to any Statement of Attainment being issued. The website for will be active as of October 2014 for more information please contact the following web link

<http://www.usi.gov.au>

## 1.7 CODES OF CONDUCT

LTS is bound by a code of conduct as per registration requirements; this can be viewed at any time in the assessment tools or located within the training room. It is a requirement of all candidates to have an acceptable level of conduct prior to and during training. Unacceptable levels of conduct that breach LTS requirements will result in the removal of the candidate from the course.

## 1.8 COMPLAINTS AND APPEALS

Regardless of cultural background, gender, sexuality, disability or age you have the right to learn in an environment that is free from discrimination and harassment and be treated in a fair and considerate manner while you are training with us. If, at any time, you feel that any trainer or assessor is not abiding by our safety management plan then document your complaints or appeal on the complaints and appeal application form that will be supplied by the trainer and assessor upon request.

## 1.9 DISCLAIMER

LTS reviews training material on a regular basis to ensure all information is correct and up to date; however LTS cannot take responsibility if information within this document becomes out dated or incorrect after the time of printing.



## 2.0 INTRODUCTION

This course has been designed to train and assess candidates to competently to issue work permits according to the relevant and current Australian Standards and any relevant site requirements.

### 2.1 REQUIRED SKILLS AND KNOWLEDGE

#### Required skills

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and demonstrate the ability to:

- recognise types of work permits required for different situations
- undertake and interpret hazard analysis
- conduct and interpret tests/inspections for gas or other hazards, including one or more of:
  - atmospheric, including explosivity
  - flammability
  - toxicity
  - temperature
  - humidity
  - combustibles, oxygen, enriched or reduced
  - electricity
  - stored pressure/energy
- ensure correct preparation of worksite is undertaken, including one or more of:
  - mechanical, electrical and other energy sources, and process isolations
  - de-energising all sources of energy/pressure
  - purging of plant
  - ventilation of plant
  - lockout/tag out procedures
  - blinding/blanking lines
  - other hazard controls
- ensure supervision/monitoring of people working under the permit
- speak clearly and unambiguously in the language of the worksite.

#### Required knowledge

Evidence must be provided that demonstrates knowledge of:

- the organisation's work control system
- types of permits and their application
- hazards of the area for which permit is being issued
- hazards that may be created by the interactions of the permit, the job, the process and the plant area
- focus of operation of work systems and equipment.

## 2.2 METHOD OF ASSESSMENT

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

## 3.0 SAFETY LEGISLATION

The harmonisation of work health and safety (WHS) laws is part of the Council of Australian Governments' National Reform Agenda aimed at reducing the regulatory burden and creating a seamless economy. The objects of harmonising WHS laws through a model framework are to protect the safety of workers, improve safety outcomes, reduce compliance costs for business and improve efficiency for health and safety regulators.

The national model WHS laws comprise a national model WHS Act, national model WHS regulations and a suite of national model WHS codes of practice. The package of WHS laws has been developed by Safe Work Australia and agreed under the Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety (IGA).

The current status and relevant work health and safety legislation across the Australian jurisdictions is as follows:

- **Commonwealth** — Work Health and Safety Act 2011 — commenced 1 January 2012
- **New South Wales** — Work Health and Safety Act 2011 — commenced 1 January 2012
- **Queensland** — Work Health and Safety Act 2011 — commenced 1 January 2012
- **Australian Capital Territory** — Work Health and Safety Act 2011 — commenced 1 January 2012
- **Northern Territory** — Work Health and Safety Act 2011 — commenced 1 January 2012
- **South Australia** — Work Health and Safety Act 2012 — commenced 1 January 2013
- **Tasmania** — Work Health and Safety Act 2012 — commenced 1 January 2013
- **Western Australia** — Work Health and Safety Act 2020 — commenced 1st April 2022
- **Victoria** — Occupational Health and Safety Act 2004 — No new legislation planned

### 3.1 WORK HEALTH AND SAFETY ACT 2020

The Model Work Health and Safety Act have been developed under the Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety (IGA) to underpin the new harmonised work health and safety (WHS) framework in Australia.

The harmonisation of work health and safety laws is part of the Council of Australian Governments' National Reform Agenda aiming to reduce regulatory burdens and create a seamless national economy.

The objects of harmonising work health safety laws through a model framework are:

- To protect the health and safety of workers
- To improve safety outcomes in workplaces
- To reduce compliance costs for business, and
- To improve efficiency for regulatory agencies.

The Act includes the following key elements:



- A primary duty of care requiring persons conducting a business or undertaking (PCBUs) to, so far as is reasonably practicable, ensure the health and safety of workers and others who may be affected by the carrying out of work
- Duties of care for persons who influence the way work is carried out, as well as the integrity of products used for work
- A requirement that 'officers' exercise 'due diligence' to ensure compliance
- Reporting requirements for 'notifiable incidents' such as the serious illness, injury or death of persons and dangerous incidents arising out of the conduct of a business or undertaking
- A framework to establish a general scheme for authorisations such as licences, permits and registrations (e.g. for persons engaged in high-risk work or users of certain plant or substances)
- Provision for consultation on work health and safety matters, participation and representation provisions
- Provision for the resolution of work health and safety issues
- Protection against discrimination for those who exercise or perform or seek to exercise or perform powers, functions or rights under the Bill
- An entry permit scheme that allows authorised permit holders to:
  - Inquire into suspected contraventions of work health and safety laws affecting workers who are members, or eligible to be members of the relevant union and whose interests the union is entitled to represent, and
  - Consult and advise such workers about work health and safety matters.
- Provision for enforcement and compliance including a compliance role for work health and safety inspectors, and
- Regulation-making powers and administrative processes including mechanisms for improving cross-jurisdictional cooperation.

### 3.2 WORK HEALTH AND SAFETY REGULATIONS 2022

These Regulations are made under section 276 and schedule 3 of the Work Health and Safety Act 2020 and cover a wide range of matters relating to work health and safety, including:

- Representation and participation (Chapter 2);
- General risk and workplace management (Chapter 3);
- Hazardous work involving noise, hazardous manual tasks, confined spaces, falls, work requiring a high-risk work licence, demolition work, electrical safety and energised electrical work and diving work (Chapter 4);
- Plant and structures (Chapter 5);
- Construction work (Chapter 6);
- Hazardous chemicals (Chapter 7);
- Asbestos (Chapter 8);
- Major hazard facilities (Chapter 9);
- Mines (Chapter 10) [optional]; and General (Chapter 11).

### 3.3 MINES INSPECTION ACT 1994

The Mines Safety and Inspection Act 1994 (the Act) sets objectives to promote and improve occupational safety and health standards within the minerals industry.

The Act sets out broad duties, and is supported by regulations, together with codes of practice and guidelines.

The objects of this Act are —

- (a) To promote, and secure the safety and health of persons engaged in mining operations; and
- (b) To assist employers and employees to identify and reduce hazards relating to mines, mining operations, work systems and plant at mines; and
- (c) To protect employees against the risks associated with mines, mining operations, work systems at mines, and plant and hazardous substances at mines by eliminating those risks, or imposing effective controls in order to minimize them; and
- (d) To foster and facilitate cooperation and consultation between employers and employees, and associations representing employers and employees, and to provide for the participation of those persons and associations in the formulation and implementation of safety and health standards and optimum working practices; and
- (e) To provide procedures for employers and employees to contribute to the development and formulation of safety legislation for mines and mining operations and to consult regarding its administration.

### 3.4 MINES INSPECTION REGULATIONS 1995

The Mines Safety and Inspection Regulations 1995 (the regulations) provide more specific requirements for a range of activities. Like the Act, regulations are enforceable and breaches may result in prosecution, fines, or directions to cease operations and undertake remedial action.

### 3.5 TRAINING

The general duty requires training to be provided by an employer, but does not prescribe a particular form of training. Training should be relevant to the safety and health of employees, and should take account of the specific tasks of each employee.

There is also a regulatory requirement that, before commencing work, employees:

- Be given adequate instruction and training; and
- Assessed as competent.

External training courses have been established to provide a service to some industries and some of these courses have been accredited through national and state bodies. Both accredited and non-accredited training courses may be used.

Employers may also provide in-house training using their own employees as trainers, or using specialist trainers. In-house training may provide an opportunity for management and appropriate employees to share the delivery. Induction training for new employees is an example of safety and health training that is commonly set up as in-house training.

### 3.6 DUTY OF CARE

All employees have a general duty of care to ensure their own safety and health at work.

They also have a general duty of care towards others, to ensure their actions or inaction does not put others' safety or health at risk. This duty of care applies to anyone who can reasonably be foreseen as likely to be injured, harmed or killed by an act or omission. Employees must not only work with their own safety in mind, but also ensure that their actions do not affect the safety of others.

The employee's duty to avoid causing harm to others may place greater responsibilities on managers and supervisors. For managers and supervisors, the range of people who may be affected by their decisions on safety and health matters could be quite extensive.

Employees also have specific duties.

They must:

- Reasonably comply with the employer's instructions about safety and health at the mine;
- Use personal protective clothing and equipment that has been provided by the employer as instructed by the employer;
- Take good care of equipment provided in the interests of safety or health. In particular, employees must not misuse or damage the equipment. It would be an offence, for example, to remove guards from machinery without proper authorisation. This applies where the employers have provided the necessary information, instruction and training in safety and health matters, and the employee's actions to misuse or damage are deliberate
- At the end of an underground shift, report on the state of the workplace where they have been working to their immediate superior and person relieving them, where practicable; and
- Cooperate with employers and managers on safety and health matters.

### 3.7 STANDARDS

Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language which defines quality and safety criteria.

These documents are practical and don't set impossible goals. They are based on sound industrial, scientific and consumer experience and are regularly reviewed to ensure they keep pace with new technologies.

They cover a range of sectors from consumer products and services, construction, engineering, business, information technology, human services to energy and water utilities, the environment and much more.

Each standard is developed by a balanced committee made up of technical, business, academia, government and community experts who come together to debate how a product or system should perform and how it should be made. Before finalisation, every standard is subject to public comment to ensure everyone with an interest in the subject has the opportunity to have an input.

There are approximately 7000 Australian Standards and they are managed by SAI Global Ltd.

### 3.8 SITE ACCESS AND REQUIREMENTS

Access to site and the relevant requirements needed may largely depend on the relevant organisational Safety management plan (SMP). These mandatory requirements must be met prior to mobilisation or access to the site, this may include but not limited to:

- Medicals
- Training and Competencies
- Physiological and attitude tests
- Inductions
- Ongoing evaluations- Drug and alcohol testing and competency tests

### 3.9 SITE SAFETY AND ENVIRONMENTAL PLANS AND PROCEDURES

Safety Management Plans (SMP) and Environmental Management Plans (EMP) form the basis of Work Health and Safety for a particular organisation. These plans may include but are not limited to:

- Organisation details
- Training requirements
- Mobilisation requirements
- Emergency response
- Risk assessment strategies
- Incident reporting
- Procedures for work undertaken on site

These plans and procedures are generally located within the Safety Department of the organisation.

Procedures may include but not limited to:

- Fatigue management
- Confined space
- Permit requirements
- Risk assessment

### 3.10 RISK ASSESSMENTS

Risk assessment involves generating a list of the potential injury or harm arising from the hazards identified, and the likelihood of these occurring. In general, these should be listed in order from the most to the least serious, such as from death by crushing to abrasion. The potential for fatal injury should be considered for each hazard type identified.

In assessing risks, consideration should be given to the state of knowledge about the frequency of injury or disease, the duration of exposure to injury or disease sources and the likely severity of the outcomes.

Knowledge gained from similar mines or workplaces or similar processes may be relevant.

Items to be considered include:

- Frequency of injury — how often is the hazard likely to result in an injury or disease?
- Duration of exposure — how long is the employee exposed to the hazard?
- Outcome — what are the consequences or potential severity of injury?

Risk assessment should consider:

- The adequacy of training or knowledge required to work safely;
- The way the jobs are performed;
- The way work is organised;
- The size and layout of the workplace;
- The number and movement of people on the site;
- The type of operation to be performed;
- The type and safety features of machinery and plant in use;
- Procedures for emergency evacuation;
- The storage and handling of materials and substances; and
- Environmental factors.

### 3.11 CONTROLS

There is a hierarchy of control measures that ranges from the most effective to the least effective.

The hierarchy of control measures is:

- Elimination — removing the hazard or hazardous work practice from the mine. This is the most effective control measure;
- Substitution — substituting or replacing a hazard or hazardous work practice with a less hazardous one;
- Isolation — isolating or separating the hazard or hazardous work practice from people not involved in the work. This can be done by marking off hazardous areas or installing screens or barriers;
- Engineering control — if the hazard cannot be eliminated, substituted or isolated, an engineering control is the next preferred measure. This may include modifications to tools or equipment or providing guarding to machinery or equipment;
- Administrative control — includes introducing work practices that reduce the risk. This could include limiting the amount of time a person is exposed to a particular hazard; and
- Personal protective equipment — should be considered only when other control measures are not practicable.

Control measures are not mutually exclusive. That is, there may be circumstances where more than one control measure should be used to reduce exposure to hazards.

### 3.12 INCIDENT REPORTING

Anyone working at a mine or workplace must immediately report to their supervisor:

- Any potentially serious occurrence that arises in connection with their work; and
- Any situation in the mine or workplace that they believe could be a hazard to any person.

This includes reporting potential hazards and near misses as well as actual occurrences.

The supervisor must immediately advise the manager, or delegate of the manager, of this report.

If the person does not have a supervisor, then he or she must report directly to the mine or workplace manager.

### 3.13 EMERGENCY RESPONSE PLAN

A documented plan written in conjunction with AS3745 that describes the actions in response to various major events in the workplace or Australian Community's

Major event refers to credible threats, indications of terrorism, or acts of terrorism; major disasters or emergencies, such as Cyclones, Tornadoes, Storms, Earthquakes, Fires, Flood, or Explosion regardless of cause; and catastrophic incidents that leave extraordinary levels of mass casualties, damage, and disruption severely affecting the population, infrastructure, environment, economy, and government functions.

The communication of the emergency response plan (ERP) is vital to ensure all employees are aware of the required actions they must take in response to an emergency situation occurring.

This is usual achieved through the way of inductions and regular practicing of the requirements of the ERP

### 4.0 WORK SYSTEM

The work system is made up of 5 basic elements:

People-Plant and equipment-Procedures-Materials and the Environment

The work system can be categorised into 4 basic risk levels (likelihood v consequence):

Extreme-High-Medium -Low

Planning and risk assessing this work system is vital to ensuring a safe system of work at all times and also ensuring on a continual basis that the work system is Assessed-Evaluated-Managed and Measured (Change Management)

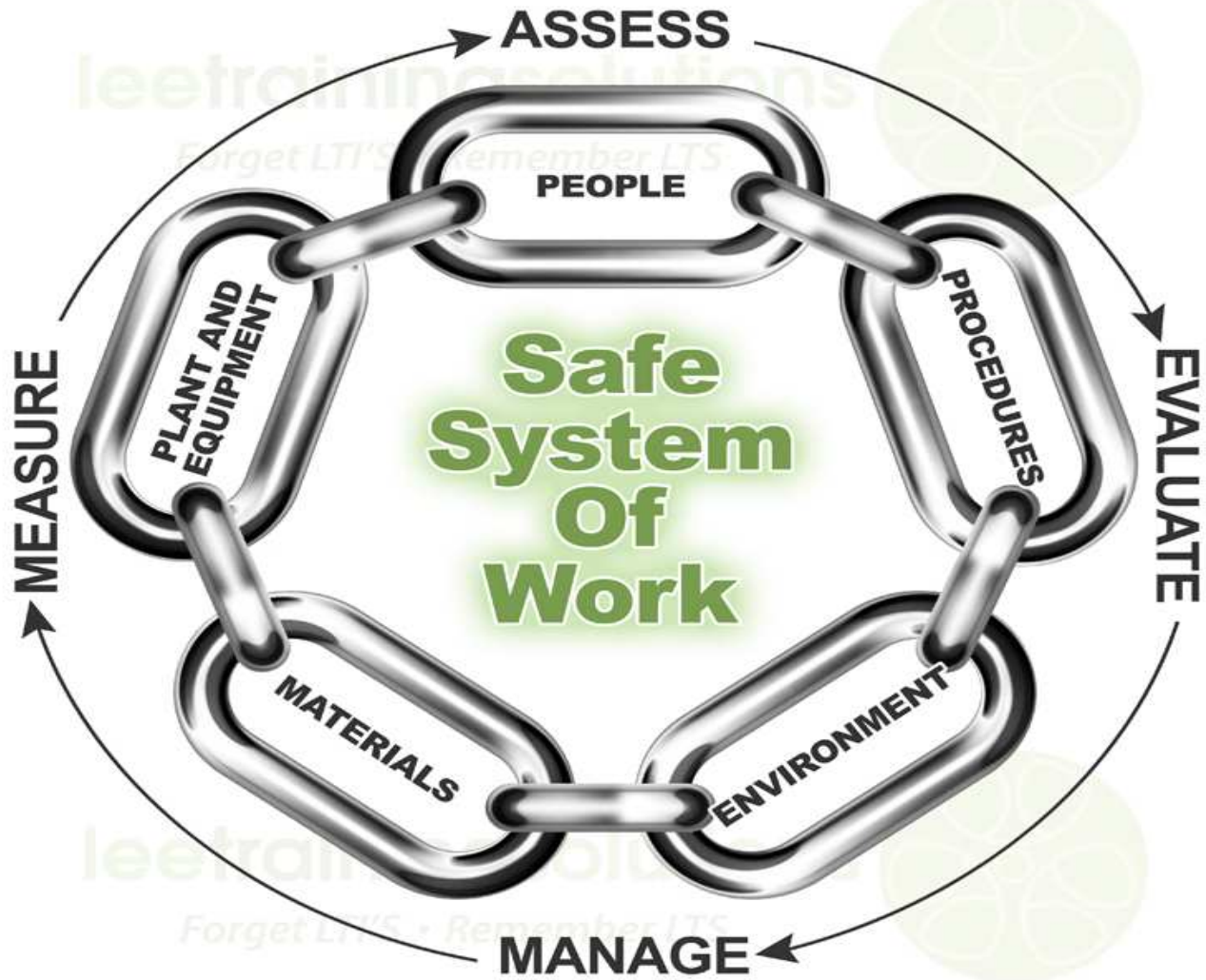
If the work system becomes unsafe or at an unacceptable risk situation you must:

- Stop work
- Assess the situation
- Manage and Control the situation
- And only start work when it is safe or at an acceptable risk situation



#### 4.1 SAFE SYSTEM OF WORK

## leetrainingsolutions safesystemofwork



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**“IT’S AS STRONG AS  
IT’S WEAKEST LINK”**

## 5.0 WORKPLACE COMMUNICATIONS

Workplace communication is the process of exchanging information, both verbal and non-verbal, within an organisation. An organisation may consist of employees from different parts of the society. In order to unite the activities of all employees, communication is crucial. Communicating necessary information to the entire workforce becomes necessary. Effective workplace communication ensures that all the organisational objectives are achieved.

The following are the factors influencing workplace communication:

### **Method of communication:**

Different people absorb information in different ways. To make sure that the information conveyed is understood by all, the method used for communication needs to be simple and clear. When presenting vital information, using pictures will make way for easy understanding. Preferring two-way communication is considered best for communicating. Adequate importance can be given for discussion, questions and clarifications.

### **Content:**

The content of the information plays a major role in workplace communication. The level of detail must be according to the grasping capacity of the audience. Giving too much detail may get the audience bored and too little detail won't make them involved. Use of jargon while communicating is not considered good for effective workplace communication.

### **Frequency:**

While formal workplace communication that is done too rarely or too often is not good for an organisation, frequent informal workplace communication has its benefits. A perfect balance is required for the proper functioning of an organisation. Information must be communicated as and when required rather than holding unnecessary meetings frequently. At the same time crucial information must not be held till the last hour or day, instead they have to be communicated as early as possible to get the employees in tune with the objectives of the organisation.

### **Skills:**

Getting the message across efficiently depends on the skills of the communicator such as presentation skills, group facilitation skills and written communication skills. Successful communication also depends upon the capacity of the employees to understand the information. This requires providing the employees some basic financial literacy like financial statements, sales, profitability, etc.





## 6.0 SPECIFIC COURSE LEGISLATION

There are a number of legislation documents that can be sourced in regard to permits.

The purpose of these documents is to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to and comply with current legislative requirements in the workplace.

### Mine sites:

The term "mining" under the Mining Act 1978 includes fossicking, prospecting and exploring for minerals and mining operations.

The Department of Mines and Petroleum in Western Australia administers all Mines in its jurisdiction and is governed by the following legislation:

- Mines and Inspection Act 1994 (MIA)
- Mines and Inspection Regulations 1995

Workplaces other than Mine sites are administered by Worksafe WA and are governed by the following legislation:

- Work Health and Safety Act 2020 (WHS)
- Work Health and Safety Regulations 2022

NOTE: Currently (To be obsolete once the WHS legislation is passed in 2014) in Western Australian the Work Health and Safety Legislation is not law and is currently governed by the Occupational Health and Safety Act 1984 and the Occupational Health and Safety Regulations 1996

## 6.1 RELEVANT STANDARDS

The standards that can be sourced relevant to permitted work are but not limited to:

NOTE: AS refers to Australian standard and NZS refers to New Zealand standard

- AS2865-2009 Confined spaces

## 6.2 CODES OF PRACTICE

Codes of practices outline other requirements they you may need to adhere to while undertaking confined space activities and are industry best practice:

- Code of practice for prevention of falls at the workplace
- Code of practice for Confined spaces

### 6.3 SPECIFIC SITE REQUIREMENTS

Gaining access to any workplace whether it is a Mine site or a workplace other than a mine site will require certain conditions to be met for access to given to undertake Confined space activities.

Some of the requirements may be:

- Site specific inductions
- Medicals and regular evaluations such as drug and alcohol testing
- Sponsors and visitor requirements
- Driving restrictions
- Workplace training core competencies
- Attending site safety tool box meetings and prestart meetings

### 6.4 SPECIFIC COMPLIANCE DOCUMENTATION AND PROCEDURES

In addition to the relevant laws referring to Acts and Regulations within the workplace certain compliance documentation and procedures need to be adhered to as well these may be but not limited to:

- Manufacturers guidelines and specifications
- Australian standards
- Western Australian specific compliance documentation
- Safety and Environmental management plans
- Safe work procedures
- Code of practice and guidance notes
- Training requirements and verification of competencies
- All relevant Permits
- Employment and workplace relations legislation
- Equal Employment Opportunity and Disability Discrimination Legislation

## 7.0 PERMITS

The Permit to Work system is a formalised process to control work and access to identified areas designed to prevent incidents in the workplace.

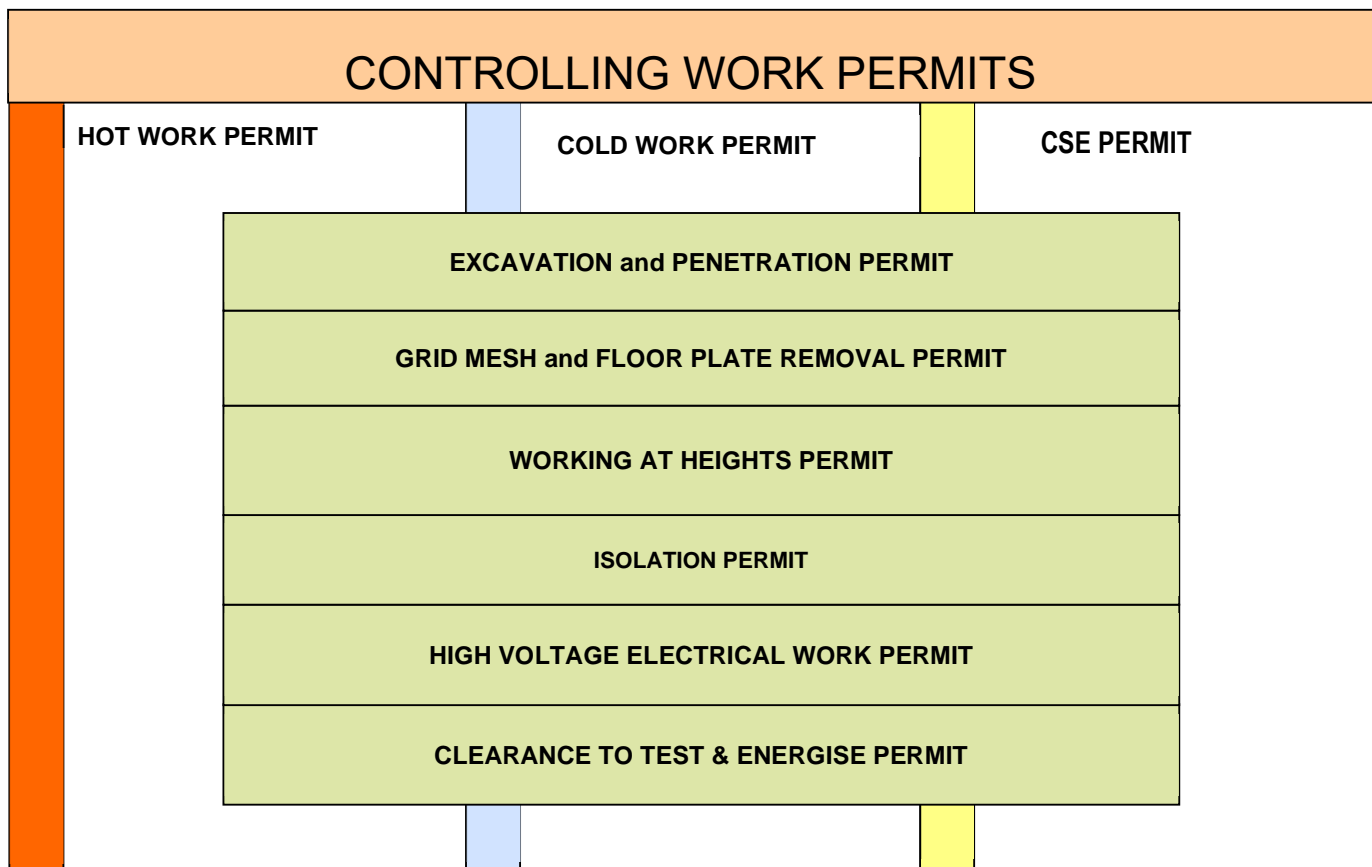
The written system is used to control certain types of work or work areas that are potentially hazardous and contains a permit to work document which specifies the work to be done and the precautions to be taken.

This process authorises work only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered.

### 7.1 TYPES OF PERMITS

Permits may include but are not limited to-

- Confined space entry
- Working at heights
- Grid mesh removal
- Electrical work



## 7.2 PERMIT INFORMATION

The information to be read and understood by the relevant workgroup may include but not limited to:

- The location of the permitted work
- Scope of the work to be undertaken
- Isolation's requirements
- Permit testing requirements and results.
- Authorisation of permit and permit number
- Date and timeframe of permitted works
- Personal protective equipment requirements
- Emergency procedures and emergency equipment
- Relevant personnel associated with permit including the permit issuer and permit holder
- Contact details of relevant personnel including emergency services

## 7.3 PERMIT ISSUER RESPONSIBILITIES

The Permit Worker has the following responsibilities:

- Shall have attended and passed a suitable and relevant organisational training course and Nationally recognised training for the scope of works undertaken
- To authorise all permits and documentation for permitted work undertaken and ensure all relevant control strategies are in place.

Shall communicate with all relevant personnel as detailed in the relevant safe work procedures and permit requirements as per the following:

- The work to be undertaken and special requirements
- The conditions of the relevant permit
- Emergency plans and emergency equipment
- Training competencies of all relevant personnel
- Hand over, shutdown and cancellation of permitted works
- Maintaining and monitoring of all permitted works under their control
- Permitted works prestart and debrief communication to all relevant personnel

## 7.4 PERMITTED WORK ENVIRONMENT

The environment in which permitted work exists is considered High to Extreme work areas

The environment must be assessed in detail when the risk assessment is conducted and will have a great bearing on the controls that are adopted. Licensing and Regulatory requirements must be considered also as this may have an impact on certain controls being implemented

Due to the fact that permitted works are high to extreme risk work areas, complacency, cost and time must not dictate the way the permitted work is undertaken or choices are made

**History all too often reminds us of the consequences of poor risk assessment choices when permitted work is undertaken**

## 7.5 PERMITTED WORK TASKS

The work task to perform under a permit has a huge bearing on the conditions of the permit to be issued.

A precise account of the scope of works must be presented to the permit issuer for considerations on the type of permit(s) are required and what conditions and control strategies are to be implemented by the work group.

Training requirements of all personnel to undertake permitted work must be considered prior to undertaking any work.

## 7.6 RAISING/AUTHORISATION OF A PERMIT

Prior to any permitted works being undertaken the permit must be raised by the permit holder and supply any relevant documentation to the authorised and competent permit issuer.

At no time shall any permitted works be undertaken without an authorised issued permit that is relevant to the work and location of the works

The organisational procedures will determine how this process is undertaken however in most cases this is controlled and managed by a permit hut that contains all the required documentation and personnel to issue permits and control isolations.

## 7.7 CANCELLATION OF A PERMIT

Licensing and Regulatory requirements, relevant Standards and Organisational procedures will all have a bearing on how or what timeframe that a permit is cancelled or closed.

The general time frame associated with all permits is one shift or 12 hours

There may be a requirement for the work group to liaison with emergency services in the case the requirements of the permit and safe work procedures dictate.

The permit is not considered closed until all relevant documentation is signed off and all documentation has been returned to the permit issuer for cancellation

## 7.8 REVALIDATION OF A PERMIT

Revalidation of a permit maybe required if the scope of works extends beyond one shift or 12 hours and would require the communication of the existing permit holder to hand over the permit to the new authorised permit holder. Organisational procedures and permit training for the relevant organisation will dictate how and when this will occur between permit holders. The permitted work shall be closed down within the timeframe allocated and made safe, prior to the revalidation of the permit

Examples could include but not limited to:

- Shutdowns
- Construction work
- Extended maintenance work

## 7.9 MONITORING OF PERMITTED WORKS

Monitoring of permitted must be undertaken by Permit Issuers to ensure all works carried out or the conditions that pertains to the permit are met at all times and are effective.

This may include but not limited to:

- Ensure regular inspections are undertaken
- Ensure work personnel respond appropriately to changing conditions
- Ensure permit currency and revalidation
- Ensure permit is displayed according to relevant procedures
- Identify any non-compliance and report
- Withdraw/Cancel permit if required
- Reporting of any issue that may arise

## 7.10 PRESTARTS/DEBRIEFS

Pre-starts and Debriefs must be undertaken in all permitted work situations.

The following but not limited to some of the information that must be discussed during this process:

- Check and confirm that general Housekeeping has been undertaken to leave the site in a clean and safe condition.
- Check and confirm that all Isolations have been removed in accordance with organisational procedures.
- Status of work must be communicated to all relevant personnel that are involved in the permitted work.
- Complete all relevant Documentation that pertains to the permitted work.
- Check and confirm that there have been no incidents or Injuries that pertain to the permitted work.

## 7.10 LOCK OUT TAG OUT

Lock out and tag out systems are used to ensure that all energy sources that may be connected to the task are fully isolated from personnel that are undertaking the task.

Types of energy sources:

- POTENTIAL
- KINETIC
- MECHANICAL POWER
- ACOUSTIC AND MECHANICAL VIBRATIONS
- ELECTRICAL
- NUCLEAR PARTICLE RADIATION
- THERMAL
- CHEMICAL
- MICROBIOLOGICAL
- MUSCLE

Energy sources shall be locked out at the isolation points and systems can vary depending on site and safe work procedures. It should be noted that all isolations shall be confirmed as dead by all personnel involved in the task, prior to starting work.

Locks and personal danger tags are used to ensure that no one can activate the energy source using the isolator without the person detaching his or hers own lock and tag. Lock boxes and permit forms may be used if a large number of personnel need to lock onto a specific isolation point; this is done by an authorised tagger who has completed the relevant training and accreditation to undertake this task.

Tags shall always be placed in the most visual place in order for other work groups to see the tag. Safety tape shall be used to encompass the whole area that it is relevant to and information tags used in conjunction with safety tape to communicate works being undertaken.

Note: All danger tags must be completed correctly as per the safe work procedures and be destroyed after use and dispose of correctly.



## 7.11 ISOLATION PROCEDURES

Prior to any person conducting permitted work all potentially hazardous services, including all process services, normally connected shall, where it is possible to do so, be isolated in order to prevent

- (a) The introduction of any materials, contaminants, agents or conditions harmful to people occupying the permitted work; and
- (b) The activation or energizing in any way of equipment or services which may pose a risk to the health or safety of persons within the permitted work.

It is imperative that the whole work group have knowledge and be part of the isolation procedures where an identified energy source is present when undertaking permitted work.

## 8.0 ATMOSPHERES

There are 3 key aspects of the atmosphere that must be confirmed as safe before any permitted work is considered.

They are:

- Oxygen deficiency/ surplus
- Flammable or Explosive
- Toxic

### Composition of the atmosphere:

- Nitrogen (and rare gases) 79.04%
- Oxygen 20.93%
- Carbon dioxide 0.03%

### Hazardous atmospheres

- Less than 19.5% by volume of oxygen
- More than 23.5% by volume of oxygen

Oxygen deficiency within a confined space may arise by:

- Combustion (rapid oxidation) - welding, oxy cutting etc.
- Chemical Reaction or slow oxidation reactions (rust)
- Microbial action or absorption by grains, chemicals or soils
- Oxygen displacement or dilution by an inert gas
- Physical activity

Oxygen excess within a confined space may arise by:

- Leaking oxygen hoses
- Chemical Reaction that produce oxygen rich atmospheres
- Oxygen energy sources



## 8.1 OXYGEN LEVELS AFFECT TABLE

Oxygen Volume (%)	Symptoms
21-18	No noticeable effect
18-14	Increased breathing volume Accelerated heartbeat Impaired attention and thinking Impaired co-ordination
14-10	Very faulty judgement Very poor muscular co-ordination Muscular exertion causes rapid fatigue and may cause permanent heart damage
10-6	Nausea Vomiting Inability to perform vigorous movement, or loss of all movement Unconsciousness, followed by death
Less than 6	Spasmodic breathing Convulsive movements Death in minutes



## 8.2 EXPLOSIVE OR FLAMMABLE ATMOSPHERES

The range of air/fuel mixture at which the combustible gases will ignite/explode is defined by:

- Lower Explosive Limit (L.E.L):

The concentration of a flammable containment in air below the propagation of a flame does not occur on contact with an ignition source

- Upper Explosive Limit (U.E.L)

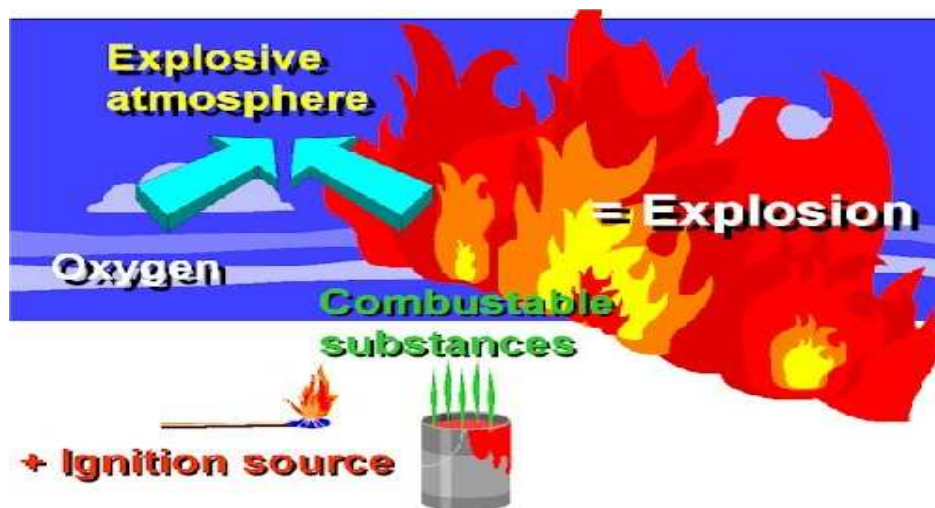
The concentration of a flammable containment in air above which the propagation of a flame does not occur on contact with an ignition source

NOTE: Concentrations above the UEL should not be considered safe because:

- O<sub>2</sub> may have been displaced
- Ventilation rate may have been increased

- LEL < 5%\* - work can proceed - (risk assessment required)
- LEL 5% to 10%\* - work but with continuous monitoring
- LEL > 10%\* - evacuate space

\*exposure standard may be exceeded at this concentration



### 8.3 TOXIC ATMOSPHERES

Toxic atmospheres can occur as a result of:

- Generation by natural process of decomposition
- Accidental spillage or leakage
- Exhaust gases
- The work being performed

A “Safety Data Sheet” (SDS) is a legal document that is requested from chemical companies for all commonly used substances that may create a hazardous environment within the workplace.

Some information contained is:

- PPE requirements
- Properties
- Emergency procedures
- Safe handling
- UEL and LEL

If you use any chemical in the workplace, you MUST have access to an associated SDS.

These SDS can be obtained by contacting the HSE department or via the internet and supplier

All environmental spills must be reported, isolated, evaluated and clean-up immediately and disposed of correctly.



## 8.4 GASES -CONTAMINANTS AND ENGULFMENT

A contaminant is any dust, fume, mist, vapour, biological matter, gas or other substance in liquid or solid form the presence of which may be harmful to persons

Some common gases are but not limited to:

- Carbon dioxide: colourless-odourless-non-flammable-heavier than air
- Carbon Monoxide: colourless-odourless-non-flammable-heavier than air
- Nitrogen: colourless-odourless-non-flammable-lighter than air
- Ammonia: colourless-pungent odour-non-flammable-lighter than air
- Methane: colourless-odourless- flammable-heavier than air
- Propane: colourless-odourless- flammable-heavier than air
- Butane: colourless-odourless- flammable-heavier than air

### Toxic contaminants

Most toxic substances can be classified as irritants, anesthetics and narcotics, systemic poisons, sensitizers, carcinogens, mutagens, and/or teratogenic substances.

Systemic poisons may be further segregated into the categories of hepatotoxic agents, nephrotoxic agents, neurotoxic agents, agents which act on the blood or hematopoietic system, and agents which damage the lung.

- Hepatotoxic agents - materials that cause liver damage.
- Nephrotoxic agents - materials that cause kidney damage.
- Neurotoxic agents - substances that in one way or another impact the nervous system and possibly cause neurological damage.
- Carcinogens - substances that may incite or produce cancer within some part of the body.
- Mutagens - can produce changes in the genetic materials of cells.
- Teratogenic - materials may have adverse effects on sperm, eggs, and/or fetal tissue.
- Hematopoietic system (blood) - Some chemicals can affect the blood and the blood forming tissues

### Explosive contaminants

Any dust, fume, vapour or gas present in the air at concentrations that can propagate a flame on contact with an ignition source

### Engulfment

The immersion or envelopment of a person by a solid or liquid (ie grain, sugar, flour, sand, coal, fertiliser, and other substances in a powder or granular form) that is stored within the confined space

## 8.5 RISK ASSESSING ATMOSPHERES

It is vital that key questions be asked about the atmosphere prior to undertaking permitted works, listed below are some key questions must be answered:

- What was in the space previously?
- What chemical reactions could have occurred in the space?
- What work will be performed in the space?
- What material/substances will be taken into the space?
- Will continuous monitoring be required?
- Any dust, fume, mist, vapour, gas or other substance in liquid or solid form which may be harmful to health and safety
- Atmospheric contaminants must be reduced to below the relevant exposure standard

**Exposure standard** - an airborne concentration of a particular substance in the person's breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all persons

- The exposure standard can be of three forms: time-weighted average (TWA), short-term exposure limit (STEL) or peak exposure limit.

The following terms are used in calculating levels of atmospheric contaminants:

(a) Time-weighted average (TWA) The average airborne concentration of a particular substance when calculated over a normal eight-hour work day, for a five-day working week.

(b) Short-term exposure limit (STEL) a 15 minute TWA exposure which should not be exceeded at any time

- During a workday even if the eight-hour TWA average is within the TWA exposure standard. Exposure at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.

Peak a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time, which does not exceed 15 minutes.

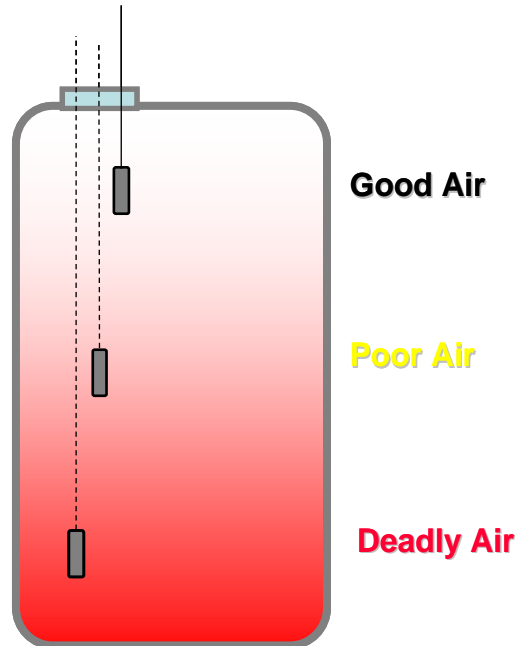


## 8.6 PURGING

The process of clearing the environment within the permitted works,

Purging may be accomplished by forcing air, water, or another substance into the space to push the hazardous substance out.

A confined space should never be purged with pure oxygen. Where necessary the permitted works should be cleared of contaminants using a suitable purging agent. Gas mixtures used for this purpose should not contain an oxygen content of greater than 21%. Compressed clean air is economical and suitable for use.



## 8.7 RESPIRATORS AND VENTILATION

Respiratory equipment may include:

- Respirators
- Self-contained breathing apparatus S.C.B.A
- Airline
- Ventilation units

Always check the site requirements for respiratory protection prior to use

Always ensure the user is adequately trained in the use of the selected respiratory protection

Supplied-air respiratory protection devices complying with AS/NZS 1716 should be worn when:

- Control measures cannot establish or maintain a safe atmosphere; or
- The work to be carried out within the confined space is likely to degrade/contaminate the atmosphere, e.g. hot work or painting.

## 9.0 RESCUE PLANS AND CONSIDERATIONS

### 9.1 RESCUE PLANS

Rescue plans are developed to enable all personnel including emergency services to have an active input in the permitted work task and for all personnel to understand the requirements of the permitted in case of an emergency

A rescue plan is made up of 3 basic elements and all 3 of these elements need to be assessed, implemented, documented and communicated prior to entry into the confined space as per confined space permit protocol

The elements are:

- Communication- Radios-visual-site notices-signs-permits
- Scope of works- Work task-time limits-personnel involved
- Method of retrieval- Harness and lanyard-A frame

### 9.2 RESCUE EQUIPMENT

Some of the rescue equipment that may be required for a rescue includes:

- First Aid kit
- Harness
- Rope Kit
- Stretcher
- Tripod
- Fire Extinguisher
- E.g.: When working in the confined space, some of the required rescue equipment would be placed beside the access to the space beside the standby person



### 9.3 FIRST AID AND RESCUE EQUIPMENT TRAINING

All personnel undertaking a permitted work activity must be trained and competent in using the available rescue equipment and must practice the use of the equipment so that in the case of an emergency the equipment functions as intended and the personnel are familiar with its use.

First aid training is a requirement on most sites in order to be deemed competent to undertake duties relevant to permitted works. This level of training may vary depending on site and organisational procedures and requirements.

### 9.4 WORKING AT HEIGHTS

Working at heights is where there is any potential that personnel can do injury or harm from falling from one level to another.

It may be a requirement that working at heights or the use of a full body harness is used when undertaking a permitted works or forms part of the protective equipment needed for the rescue plan.

It is imperative that all personnel be trained and competent in working at heights.



### 9.5 TRAFFIC MANAGEMENT

In order to ensure a safe system of work around permitted work activity and to ensure emergency services are able to access the permitted work in case of an emergency a traffic management plan may be required.

All traffic management controls must be in line with relevant legislative requirements and site requirements.



## 10.0 DEFECTS AND STORAGE OF EQUIPMENT

### 10.1 WORKERS RESPONSIBILITIES

Under the legislative requirements of DUTY OF CARE, it is your responsibility to ensure that your own safety and health and the safety and health of other workers, not to misuse any equipment and to report any hazards that you cannot correct yourself.

It is imperative that you ensure a safe system of work at all times.

### 10.2 DEFECTS

It is imperative that all defects identified with equipment be acted on immediately and managed and controlled as per relevant legislative and site requirements.

As faulty equipment has the potential to cause fatal consequences then the following must be adhered to:

# IF IN DOUBT TAG OUT



### 10.3 STORAGE

All equipment must be stored according to the relevant manufactures recommendations.

Environmental factors such as sunlight, rain, chemical interaction can cause the equipment to become unserviceable and fail.

Some helpful points are:

- Dry out when storing in containers
- Kept away from any harmful containments
- Inspected for damage prior to storage
- Ensure scheduled certification has taken place

## 11.0 HOUSEKEEPING

Housekeeping forms an essential role to ensuring a safe system of work is maintained.

Regular inspections and clean as you go activities can ensure that a potential unwanted event does not occur such as dropped objects and trip hazards.

