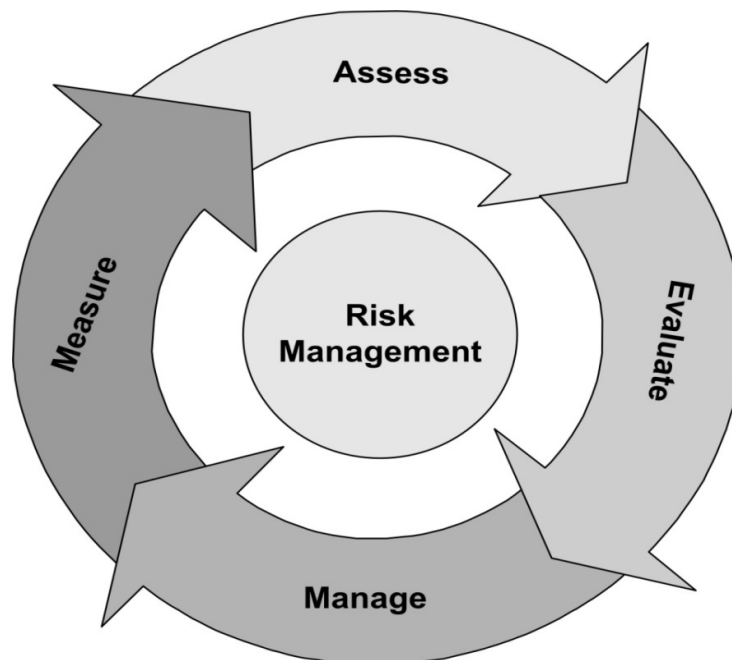


LEE TRAINING SOLUTIONS

COURSE GUIDE

MSMWHS201

CONDUCT HAZARD ANALYSIS



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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 MSMWHS201 Conduct hazard Analysis is a unit of competency which is conducted in accordance with Australian Standard AS/NZS ISO 31000:2009. This unit will allow competent persons to competently understand the risk assessment principles when working on a construction site.

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

1.3 PRE-REQUISITES

There are no pre requisites for this unit.

However, 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 27th June 2014. It is a requirement that as of the 1st 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 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 allow competent persons to competently understand the risk principles when working on a construction site according to the relevant and current Australian Standards and Manufacturer's instructions.

2.1 REQUIRED SKILLS AND KNOWLEDGE

Required skills

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

- complete a hazard analysis
- specify risk controls to bring risks to ALARP
- identify relevant personnel
- complete appropriate hazard analysis forms (paper or electronic)
- monitor and review effectiveness of risk controls.

Required knowledge

Evidence must be provided that demonstrates knowledge of:

- the significance of the analysis context
- how the identified hazards may cause harm
- purpose and use of the risk matrix
- monitoring and review of risk controls.

2.2 METHOD OF ASSESSMENT

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a hazard analysis report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.
- A third-party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- Where part of a broader role it may be conveniently co-assessed with units relevant to that broader job.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- As a minimum, assessors must satisfy the Standards for Registered Training Organisations 2015 assessor requirements.

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
- Working at heights
- 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 working on a construction site.

The purpose of these documents are 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

There are a number of standards that can be sourced relevant to working in the construction industry such as but not limited to:

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

- AS3745-2010 Planning for emergencies in facilities
- AS2865-2009 Confined spaces
- AS2444-2001 Portable fire extinguishers and fire blankets-Selection and location
- AS/NZS ISO 31000:2009 Risk management

6.2 BUILDING CODES

The building code of Australia sets out the key requirements to building and constructing buildings in Australia.

The Building Act 2011 in Western Australia commenced on 2 April 2012, introducing a new building approval process for WA and bringing significant changes to the building approvals process – from the design stage right through to occupation of a building. The Act and the Building Regulations 2012 replaced the Building Regulations 1989 and much of the Local Government (Miscellaneous Provisions) Act 1960 and amend a range of associated acts.

6.3 CODES OF PRACTICE

Codes of practice are industry best guidelines and are written from standards, there are a huge number of these documents in existence, and are a valuable source of information for working in the construction industry.

6.4 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 conduct work.

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

6.5 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 safe work procedures
- Employment and workplace relations legislation
- Equal Employment Opportunity and Disability Discrimination Legislation

7.0 MEANING OF SAFE

The word safe or safety is used commonly on a construction site, not only do you have to be competent to do your job or task you must be able to understand the foundations of keeping safe or working at an acceptable risk situation.

The term safe means “the individual’s perception of risk”

7.1 ART OF WORKING SAFELY

The art of working safely is the sum of 2 variables; the individual’s perception of the risks present and external and internal influences.

The 2 key words in the above sentence are **perception** and **influences**.

For definition purposes the words perception and influences are described below:

Perception:

This is based on a number of factors such as your knowledge and skills, your time on the job, your level within the company or organisation, your job task and your attitude towards safety.

Influences:

There can be external influences such as timelines and cost to complete the task, supervision influences, peer group pressures, cultural differences, distractions and organisational perceptions toward safety.

There can also be Internal influences that can be home and personal life pressures, addictions, health of the individual, age and your communication skill set.

This perception and influences also allows us to more readily de-sensitise ourselves from risks present and reality.

Considering the fact that your safety is challenged by perceptions and influences on a minute/hourly and daily basis throughout your working life and can vary in all different situations and environments, the following must be true.

The real art of working safely depends on the individual’s ability to recognise when they are unsafe or when they are working in an unacceptable risk situation.

Your ability to plan, risk assess and manage your work system correctly and respond to, Communicate, Manage or Control these perceptions and influences will ultimately determine your safety at work.

7.2 80/20 RULE

There is no doubt that working on a construction site is high risk, not only while working on a construction site but also living within this environment.

Without the knowledge and skills to understand the foundations of safety or the ability to comprehend we will find ourselves in a situation where we have High risk workers doing High risk work, instead of Low risk workers doing High risk work.

The 80/20 rule simply describes the following:

80% of what we do must be about planning and risk assessing the task or job in which we are to undertake, to ensure that adequate controls have been put into place and that the work system we are in is effectively managed throughout the applicable timeframe of the task or job.

20% of what we do must be about undertaking the task or job in a competent manner.

7.3 HAZARDS

Hazards are defined as anything or any condition that has the potential to cause injury, harm or damage.

Hazards can be either inherent or fluid or maybe even hidden, all hazards whether they be inherent, fluid or hidden can be identified for every element of the work system.

Inherent hazards

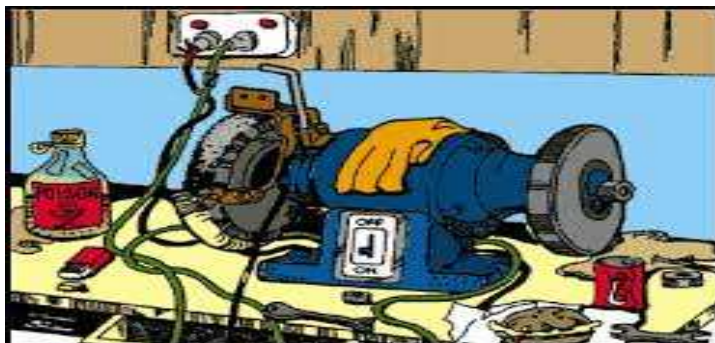
Inherent hazards are hazards that you know about such as ground conditions, work groups, traffic, plant and equipment to mention just a few.

Fluid hazards

Fluid hazards are hazards that come and go within your work system they can be inherent but are not always there such as wind, rain, dust, people and traffic to mention a few.

Hidden Hazards

Hidden hazards are hazards are those not seen or detected such as underground services, unstable ground and are only detected after an incident has occurred.



7.4 HIERARCHY OF CONTROLS

The hierarchy of controls is a logical order in controlling and managing hazards that occur in the workplace whether they are inherent, fluid or hidden.

It must be remembered that elimination must always be considered first.

The elements of the hierarchy of controls are:

- Elimination- To eliminate the hazard present
- Substitute- To substitute with a safer option
- Engineering- To design a control for a hazard
- Isolation- To isolate the hazard
- Administration- To have written procedures and process for hazards
- PPE- Personal protective equipment

Soft controls

Administration and Personal protective equipment are known as soft controls as they are your last line of defence

Hard controls

Elimination, Substitute, Engineering and Isolation are known as hard controls as they serve to protect us better and more effectively than soft controls

Critical controls

Critical controls are controls which are non-negotiable and must be in place prior to starting work

7.5 THE MEANING OF RISK

Risk is the term used to identify the potential and residual risk that a hazard would have to a person when undertaking a task.

Risk can be but not limited to capital risk meaning money or it can be environmental risk meaning risk to the environment.

It can also mean an OHS risk meaning risk to life and health of a person.

Risk is made up of 2 elements:

- **Likelihood**-the probability of an adverse event occurring
- **Consequence**-the severity of that event or outcome



7.6 WORK SYSTEM RISKS

The work system as described on pages 15-16 of this document relates to 5 key elements, they being:

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

The work system can be placed into 4 basic levels of risk depending on a number of factors such as type of task, environmental factors, and timeframes and so on; these levels of risk are as follows:

- Low risk
- Medium or Moderate risk
- High risk
- Extreme risk

When undertaking a task or job it takes all of or a combination of elements of the work system to complete, it is not possible to control all elements of the work system, if this was the case we could control all elements and would not require the need to plan or risk assess it.

Elements that can only be managed are:

- People
- Environment

Elements that can be controlled are:

- Procedures
- Plant and equipment
- Materials

7.7 RISK MATRIX

The risk matrix is a tool for the worker to work out the risk prior to starting the task **or potential risk** and the risk after the controls have been put into place or the **residual risk**.

The risk matrix depending on the organisation can be of different formats however serving the same purpose.

The resulting risk either potential or residual that is located on the applicable risk matrix would then be recorded on the relevant document usually a Job Hazard Analysis form.

An example is illustrated below:

Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain <i>>90% chance</i>	High	High	Extreme	Extreme	Extreme
Likely <i>50% - 90% chance</i>	Moderate	High	High	Extreme	Extreme
Moderate <i>10% - 50% chance</i>	Low	Moderate	High	Extreme	Extreme
Unlikely <i>3% - 10% chance</i>	Low	Low	Moderate	High	Extreme
Rare <i><3% chance</i>	Low	Low	Moderate	High	High

7.8 READING A RISK MATRIX

The risk matrix allows the worker to assess the risk whether it is potential or residual, and knowing who to read and use this tool correctly will decide whether the task is at an acceptable or unacceptable risk situation.

The risk can be calculated for the entire task or what are more frequently used are steps within the task to break down the task to identify steps within the task that need to be controlled or managed more.

The steps for reading a risk matrix are as follows:

To work out potential risk

- Identify all associated hazards for the task or step
- Locate the consequence of the task or step being conducted
- Locate the likelihood of the consequence occurring
- Locate the box on the matrix that connects consequence and likelihood together

Example

Your task is to climb 4 metres up a ladder to conduct a painting job

- Identify all associated hazards for the task or step

Some hazards may be but not limited to:

Falling off ladder-dropped objects-unstable ladder-weight to heavy-over balanced-slippery surfaces

- Locate the consequence of the task or step being conducted

The consequence of climbing up the ladder with the associated hazards would be **Major**

- Locate the likelihood of the consequence occurring

The likelihood without any controls in place would be **Moderate**

- Locate the box on the matrix that connects consequence and likelihood together

Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain >90% chance	High	High	Extreme	Extreme	Extreme
Likely 50% - 90% chance	Moderate	High	High	Extreme	Extreme
Moderate 10% - 50% chance	Low	Moderate	High	Extreme	Extreme
Unlikely 3% - 10% chance	Low	Low	Moderate	High	Extreme
Rare <3% chance	Low	Low	Moderate	High	High

This would indicate the task or step to be undertaken would be High risk or in other words:

The potential risk would be high

To work out the residual risk

- Identify all associated controls for the task or step
- Remain on the consequence line first chosen of the task or step being conducted
- Locate the revised likelihood of the consequence occurring
- Locate the box on the matrix that connects consequence and likelihood together

Example

Using the same task mentioned above it is easy to work out the residual risk

- Identify all associated controls for the task or step

It is important to identify a control measure for each of the identified hazards:

Falling off ladder- Use 3 points of contact when climbing

Dropped objects- Ensure all plant and equipment or materials are secure and drop zone has been erected

And so, on

- Remain on the consequence line first chosen of the task or step being conducted

It is important to note that consequence will also stay the same the only thing that will change is likelihood when controls are put into place

- Locate the revised likelihood of the consequence occurring

Locate the revised likelihood remembering that it we must lower the risk as much as practicable, meaning you must put enough controls into place to reduce the likelihood to Rare

- Locate the box on the matrix that connects consequence and likelihood together

Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain >90% chance	High	High	Extreme	Extreme	Extreme
Likely 50% - 90% chance	Moderate	High	High	Extreme	Extreme
Moderate 10% - 50% chance	Low	Moderate	High	Extreme	Extreme
Unlikely 3% - 10% chance	Low	Low	Moderate	High	Extreme
Rare <3% chance	Low	Low	Moderate	High	High

The residual risk or risk to the person can be calculated as being Moderate

8.0 SAFE WORK PRACTICES

Safe work procedures are incorporated in the work system to give as mandatory guidelines to follow when undertaking a task or job. These safe work practices can be varied depending on a lot of factors and are a result of ongoing continual improvement in industry to reduce risk as far as practicable.



8.1 DRUGS AND ALCOHOL

The use of alcohol and other drugs becomes an occupational safety and health issue if a person's ability to exercise judgment, coordination, motor control, concentration and alertness is affected at the workplace, leading to an increased risk of injury or illness.

It should not be assumed that any observed impairment is caused by alcohol and/or other drug use.

Impairment factors may include fatigue, medical conditions, chemicals, heat, noise and symptoms of work-related stress.

Where the ability to work safely is impaired, the employer and workers should respond in a humane manner based on the information available.

The focus at the workplace should be on occupational safety and health management rather than more general concerns about personal health.

8.2 PLANT AND EQUIPMENT

Plant is a general name for machinery, tools, appliances and equipment. It can include things as diverse as presses in a foundry and computers in an office.

It can range from electric drills to lifts and escalators; from tractors to hand trolleys; cranes to commercial fishing nets and arc welding gear.

The following guidelines should be adhered to:

- Correct plant for the task
- Correct attachment for the plant
- Pre-inspection of plant
- Adhere to Manufacturer's instructions concerning use and maintenance
- Correct training and licence to use plant
- Regular ongoing inspections of plant
- Post inspection of plant

8.3 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is clothing, equipment or substances designed to be worn by someone to protect them from risks of injury or illness.

PPE should only be considered as a control measure when exposure to a risk cannot be minimised in another way, or when used in conjunction with other control measures as a final barrier between the worker and the hazard. PPE does not control the hazard at the source.

PPE can include:

- Hearing protective devices, such as ear muffs and ear plugs
- Respirators
- Eye and face protection, such as goggles
- Safety helmets and sun hats

- Gloves and safety boots
- Clothing, such as high visibility vests or life jackets

8.4 HOUSEKEEPING

Each type of industry has its particular housekeeping problems, from large steel works to a small dressmaker's workroom.

Construction sites present serious difficulties: only the most rigorous supervision and the co-operation of all employees can keep the site, work platforms, etc., free from tools, bolts, planks, (including upturned nails) and other objects likely to cause serious accidents.

- Falls on floors left slippery, greasy, or damp;
- Striking against or falling over machine parts, material or other obstructions left lying in passageways;
- Cuts from objects left protruding from benches; and,
- Punctures by nails protruding from wood, especially on construction sites

8.5 STORAGE OF MATERIALS

Ensure that all materials within your workplace are:

- Stored in a safe manner
- Stored in a organised manner
- Able to be accessed safely and easily
- Stored as per S.D.S and OHS legislative requirements

8.6 SAFETY DATA SHEETS

An SDS is a document containing important information about a Hazardous or Non Hazardous substance and must state:

- Product name
- The chemical name of certain ingredients
- The chemical and physical properties
- Health information
- Precautions for safe use and handling
- The manufacturers and importers name, Australian address and phone number.

An SDS must be present when chemicals are used on certain sites.

This information must be read and understood prior to using any chemicals and controls must be adopted for its safe use.

8.7 ENVIRONMENTAL CONCERNS

Environmental Management affects all workplaces as well as Construction sites and is a legislative requirement.

The proper disposal of all wastes that may or will affect the Environment must be adhered to at all times and provisions within the workplace to ensure this occurs shall be in place.

Regular workplace inspections (Daily-Weekly-Monthly) must be conducted and recorded as per all Environmental Acts and Regulations.

It is everyone's responsibility to ensure:

- Litter and debris do not cause tripping or fire hazards
- Litter and debris does not build up
- Litter and debris are disposed of in a correct manner
- Construction work does not affect flora and fauna
- Waterways are kept unpolluted
- Cultural heritage is preserved

8.8 SITE DISTURBANCE AND DUST

Site disturbance could include spreading mud, dust, debris and weeds around and outside of a workplace.

Some controls could include:

- Keeping all vehicles to designated routes
- Using water to control dust emissions
- Covering up all trucks when carting loose materials
- Wash all vehicles regularly
- Ensure weed inspections are carried out on at risk machinery
- Controls are monitored and revised regularly

8.9 BULLYING AND HARASSMENT

Bullying and harassment are often thought of separately; however both involve a more powerful person or group oppressing a less powerful person or group, often on the grounds of 'difference'.

These differences can be related to culture, ethnicity, gender, sexuality, sexual orientation, ability or disability, religion, body size and physical appearance, age, marital status or economic status.

- As an employer you may be liable for the actions of employees if you have not taken reasonable actions to prevent bullying or harassment, or respond to any complaint.
- Reasonable actions can include acting on bullying or harassment issues, implementing policies and procedures and training programs for all staff.

8.10 SMOKING

Some workplaces have special amenities reserved for smoking.

Under current Australian regulations smoking is banned from all building on a construction site and in some instances is banned totally due to hazardous situations and Environmental concerns.

Some sites specify certain smoking times as a requirement.

Please ensure:

- You adhere to all signs and procedures
- Dispose of butts in a environmental friendly way
- Do not expose naked flames to hazardous or restricted areas
- Use designated smoking areas

8.11 DRINKING WATER AND TOILETS

It is the Employers responsibility under the OHS Act to ensure that clean drinking water and Toilet amenities are provided and maintained on a Construction site.

Drinking clean water on a regular basis keeps your body hydrated.

Keeping your body hydrated at all times reduces the risk that fatigue, Heat illness and lack of concentration do not affect your ability to work safely.

9.0 SIGNAGE

Signage form part of the administrative element of the hierarchy of controls.

It is a mandatory requirement that these controls are used to isolate and communicate that work activities are present and to control hazards.

Signage comes in all sorts across the worksites abut in most cases have to be of a certain size and format.

3 regulatory signs are:

- Prohibition signs-White with a red circle with a line through it-These tell you what you must not do
- Mandatory signs-White with a blue circle containing the image-These tell you what you must do
- Limitation or restriction signs-White with a red circle around a black image or number



10.0 INCIDENT RESPONSE

As with all worksites management of incidents and emergencies are a must.

An emergency situation can occur at any time so being prepared is part of a safe work ethic and the ongoing safety of all personnel.

Prevention is always better than cure and it is everybody's responsibility to ensure that all emergency plans are understood and rehearsed in the event that one may occur.

The following are some general procedures:

- Site emergency procedures
- Medical emergency procedures
- Environmental procedures
- Fire emergency
- Emergency personnel

10.1 SITE EMERGENCY PRODEDURES

Site emergencies exist to the safety and health of all personnel on site.

They may range from earthquake disaster procedures to small environmental spills.

Training is a must to understand the requirements of these procedures to ensure no other emergency scenarios occur when one emergency exists.

Emergency procedures are drawn up by emergency fields such as Ambulance, Fire fighters, Police and rescue personnel and are in most cases accessible for any personnel to view.

10.2 MEDICAL EMERGENCY PRODEDURES

Medical emergency procedures exist to ensure that the health and wellbeing of all personnel is cared for.

It is important to ensure that all medical incidents are reported immediately so that the proper medical assistance can be carried out.

Most sites have a medical Centre or access to one by the means of a site ambulance.

The safety department is involved heavily in this area to ensure this care is given and recorded.

Medical contact numbers and emergency communications are also contained in this procedure.



10.3 ENVIRONMENTAL EMERGENCY PRODEDURES

The protection of our environment is a must to ensure it sustainability.

Construction can impact greatly on flora and fauna, the air we breathe, waterways and cultural heritage.

The use of hydrocarbons, toxic substances, ground disturbance as all major hazard that construction brings.

Spills of any sort must be controlled immediately and reported.

Dust and debris must be controlled and disposed of correctly to limit the effects on the environment.

These procedures are documented in the Environmental plan and sits in conjunction with the Safety plan.

10.4 FIRE EMERGENCY PRODEDURES

Fire and smoke is of major concern on a construction site.

Emergency procedures are specifically drawn up to control an emergency due to fire.

Training in basic fire prevention and the use of firefighting equipment for all personnel is vital.

Certain sites restrict the use of naked flames or smoking to avoid an incident occurring in hazardous areas.

More personnel die as a cause of smoke inhalation than the actual fire so evacuation of area is critical.

Evacuation plans are drawn up and place all over site to ensure all personnel know were the muster points are and everyone is accounted for.



Fire Equipment

Fire represents a major hazard within the construction sector and can lead to serious harm, injuries, fatalities and property loss.

Fire safety equipment forms part of the Emergency response plan and equipment is located in designated positions all over site.

Fire codes enforce the legal requirement for these measures.

Some of the basic fire safety equipment is:

- Fire Extinguishers
- Fire blankets
- Fire reels

Training in the use of this equipment is essential.



	A Wood, Paper & Plastic	B Flammable & Combustible Liquids	C Flammable Gases	E Energised Electrical Equipment	F Cooking Oils & Fats	Notes: *Limited indicates that the extinguishant is not the agent of choice for the class of fire, but that it will have limited extinguishing capability. Class D fires involving combustible metal(s) use only special purpose extinguishers - please seek expert advice. Comments: (Refer Appendix A of AS 2444)
Powder ABE	😊	😊	😊	😊	😞	Special Powders are available specifically for various types of metal fires. Seek expert advice.
Powder BE	😞	😊	😊	😊	😊	Special Powders are available specifically for various types of metal fires. Seek expert advice.
Carbon Dioxide (CO₂)	😊	😊	😞	😊	😞	Generally not suitable for outdoor fires. Suitable only for small fires.
Water	😊	😞	😞	😞	😞	Dangerous if used on flammable liquid, energised electrical equipment and cooking oil/fat fires.
Foam	😊	😊	😞	😞	😊	Dangerous if used on energised electrical equipment.
Wet Chemical	😊	😞	😞	😞	😊	Dangerous if used on energised electrical equipment.
Fire Blanket	😞	😞	😞	😞	😊	Use blanket to wrap around a human torch. Ensure you replace the blanket with a new one after use.
Fire Hose Reel	😊	😞	😞	😞	😞	Ensure you maintain a path of egress between you and the nearest exit.

HOW TO USE A FIRE EXTINGUISHER Extinguishers come in a number of shapes and sizes. They all operate in a similar manner. Here's an easy acronym for fire extinguisher use:	P	PULL THE PIN – Break seal and test extinguisher.
	A	AIM AT BASE OF FIRE – Ensure you have a means of escape.
	S	SQUEEZE THE OPERATING HANDLE – To operate extinguisher and discharge the agent.
	S	SWEEP FROM SIDE TO SIDE – Completely extinguish the fire.

10.5 EMERGENCY PERSONNEL

Emergency personnel form the backbone of the emergency response and procedures.

Highly trained individual and crews train and rehearse every day in order to respond to an emergency situation.

Some emergency personnel are:

- Doctors
- Nurses
- Ambulance officers
- Rescue personnel
- Fire fighters
- First aid officers
- Fire wardens



All instructions given by emergency personnel must be followed and obeyed during an emergency situation

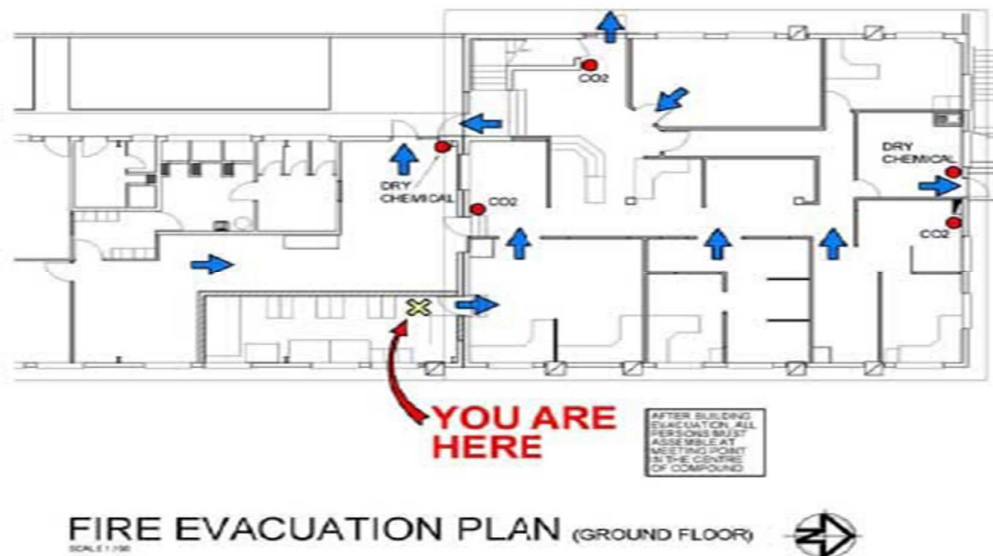
11.0 EVACUATION PLANS

Different worksites require different emergency response depending on location, type of site and risk factors. Below is a basic step by step incident response:

BASIC EMERGENCY EVACUATION PLAN

In case of Fire or other emergency

- If you see SMOKE, FLAMES or hear the FIRE ALARM, alert other occupants immediately
- If safe, close any windows and doors to confine the fire.
- Follow the EXIT signs to locate and leave through the emergency exit and proceed to the muster point located in the rear car park.
- TELEPHONE 000 and notify the fire service.
- Calmly follow instructions given by the Fire Wardens.



12.0 JOB HAZARD ANALYSIS FORMATS

Understanding hazards, and control measures to be implemented prior to, during and after a task or job is the first step in the risk management process, however on most construction sites it is a requirement to document the steps to be undertaken, hazards that are present for each step, control measures for each hazard identified and a risk rating that is taken from the relevant risk matrix of the site or organisation.

For obvious reasons the Job Hazard Analysis (JHA) will need to be of a high quality, otherwise authorisation may not be given from relevant personnel for you to conduct the works planned.

JHA formats can differ depending on the site or organisation and for this reason induction processes are held in order for personnel to understand the processes involved.

There are basically 5 steps required:

- Breaking the task or Job into general steps
- Identifying hazards for the step in question
- Identifying a potential risk rating
- Identifying control measures for each hazard identified
- Identifying a residual risk rating

12.1 BREAKING THE TASK OR JOB INTO GENERAL STEPS

The task or Job may be simple or complex; however it must be broken done into steps that adequately represent the task or job, but not to general as to miss vital steps.

For example:

Task: Lifting and moving materials				
Step	Hazard	Potential risk	Control measures	Residual risk
Plan route of movement				
Communicate to other personnel				
Undertake stretches				
Lift and move materials				
Place materials				
Conduct housekeeping				

12.2 IDENTIFYING HAZARDS

A hazard can be defined as anything or any condition that has the potential to cause injury, harm or damage, and can either be inherent, fluid or hidden.

All the elements of the work system that being People, Plant and equipment, Procedures, Material and the Environment have associated hazards, these must be all considered when identifying hazards for the JHA.

For example:

Note: For the example I will only identify 2 potential hazards for each step however there may be many more

Task: Lifting and moving materials				
Step	Hazard	Potential risk	Control measures	Residual risk
Plan route of movement	Uneven ground Other work groups			
Communicate to other personnel	No signage or barricading Poor communication			
Undertake stretches	No stretches Over extension			
Lift and move materials	Manual Handling Over balance			
Place materials	Materials not secure Materials at wrong height			
Conduct housekeeping	Trip hazards Obstructions			



12.2 IDENTIFYING POTENTIAL RISK

Potential risk is the identified risk to you after all the identified hazards are known; this is calculated as per the site or organisational risk matrix.

Note: More detailed explanation can be found in section 7.8 of this document

If we use the first step which is plan route movement then the potential risk for that step is Moderate

Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain <i>>90% chance</i>	High	High	Extreme	Extreme	Extreme
Likely <i>50% - 90% chance</i>	Moderate	High	High	Extreme	Extreme
Moderate <i>10% - 50% chance</i>	Low	Moderate	High	Extreme	Extreme
Unlikely <i>3% - 10% chance</i>	Low	Low	Moderate	High	Extreme
Rare <i><3% chance</i>	Low	Low	Moderate	High	High



12.3 IDENTIFYING CONTROL MEASURES

Identifying control measures to be implemented for each hazard identified in the JHA is formulated using the Hierarchy of controls that being Elimination, Substitute, Engineering, Isolation, Administration and PPE.

It is important to consider that the control measure selected is effective and managed according to site and organisational requirements.

For example:

Task: Lifting and moving materials				
Step	Hazard	Potential risk	Control measures	Residual risk
Plan route of movement	Uneven ground Other work groups		Ensure ground has been inspected and suitable to carry materials Only proceed with task when other work group are not in attendance	
Communicate to other personnel	No signage or barricading Poor communication		Ensure adequate signage and barricading is implemented Ensure all relevant personnel have been communicated to prior to undertaking the task	
Undertake stretches	No stretches Over extension		Ensure warm up activities are undertaken prior to lifting Ensure correct manual handling procedures are followed	
Lift and move materials	Manual Handling Over balance		Ensure correct manual handling procedures are followed Ensure stance is undertaken when moving and lifting materials	
Place materials	Materials not secure Materials at wrong height		Ensure materials are in secure place prior to finishing lift Ensure materials are placed at a height that will not cause injury when finishing the lift	
Conduct housekeeping	Trip hazards Obstructions		Ensure no trip hazards are present when leaving work area Ensure the materials do not cause any obstructions to other groups or traffic	



12.4 IDENTIFYING RESIDUAL RISK

It is important to calculate the residual risk after completing the controls as it indicates whether or not there are enough controls implemented for the step in question and whether or not the step is at an acceptable risk situation to be undertaken.

This will also indicate potential high risk steps within the task that need to be considered.

For example:

If we use the first step which is plan route movement then the residual risk for that step is Low

Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain <i>>90% chance</i>	High	High	Extreme	Extreme	Extreme
Likely <i>50% - 90% chance</i>	Moderate	High	High	Extreme	Extreme
Moderate <i>10% - 50% chance</i>	Low	Moderate	High	Extreme	Extreme
Unlikely <i>3% - 10% chance</i>	Low	Low	Moderate	High	Extreme
Rare <i><3% chance</i>	Low	Low	Moderate	High	High

13.0 REVIEW AND MONITOR

This is a very important step in risk assessing because even the best prepared risk assessment may not identify significant factors which may alter the way the job was done or hazards which were not identified on previous jobs that were similar.

Risk assessment is a continual process to ensure a safe system of work.

**Learn from
each job**