



The Health + Safety Company



- RISK MANAGER**
- CONSULTING**
- PREQUAL**
- TRAINING**
- VR/COMPETENCY**
- TALENTBANK**
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PERMIT-TO-WORK

UNIT STANDARD 17588 & 17590

+IMPAC The Health + Safety Company



**We're IMPAC – the Health + Safety Company,
proudly New Zealand owned and operated since 1999.**

As NZ's leading full-service H+S solutions provider, we have unrivalled experience and expertise at getting the best possible H+S outcomes for our clients. We work alongside them to become true partners, to fully diagnose their needs and deliver solutions to keep their teams safe.

We partner



We diagnose



We deliver



We're here to help.

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TRIGGER WARNING

IMPAC is committed to creating an inclusive and safe learning environment. Before we begin, it is essential to recognise that training often involves discussing topics that may be sensitive or evoke emotional responses. It is important to be aware that the content during this course may include discussions of potential hazards, incidents, or scenarios.

If you find any part of this course triggering or if you have concerns, please reach out our team for support or alternatively access the resources available on our website: <https://impac.co.nz/training/student-health-and-wellbeing/>


Remember, if at any point you need to step away or take a break, please do so your wellbeing is our priority.



TIPS

This handout is designed to go with an IMPAC training experience. You will need to refer to it during the training. It is yours to take away and also makes a great reference guide back in the workplace.

Please feel free to add your own notes to this handout.

As you go through this handout with your trainer use a  highlighter or underline important words as you are reading. This will make it easier to find key information later.

Use a different colour to highlight or underline words you do not understand or are unsure about, this will make it easier to find them later so that you can ask someone, or look them up.



IMPAC POLICIES

The following IMPAC's policies and process are available in IMPAC's Learner Handbook

- + Complaints process
- + NZQA Assessment process
- + Appeals process

The IMPAC Learner Handbook is available to download on IMPAC's website, Learning Management System and can be emailed on request.



THE IMPAC PERMIT RECEIVER AND PERMIT ISSUER COURSES

The Permit-to-Work (PTW) system is a method of managing hazards which arise in the course of a worker completing work activities. They are of particular benefit when the work involves high risk, is irregular, involves a number of potentially conflicting activities, and / or is very complex in nature.

It also provides the training required towards the achievement of:

- + **NZQA Unit Standard 17588** — Apply for, accept, and carry out work according to a work permit in the workplace
- + **NZQA Unit Standard 17590** — Issue worksite specific work permits

As an NZQA candidate, you are expected to:

- + Participate fully in the training session, discussions and activities
- + Share your knowledge and experience
- + Complete all assessment activities as notified by your trainer
- + Take responsibility for your own learning needs
- + Discuss with your trainer any assistance you may need.

If you are being disruptive, your trainer will advise you that your behaviour is disrupting learning for other trainees.

If the behaviour continues to disrupt or disturb others, your trainer will ask you to leave the course, and your employer will be notified immediately.



THE LAW AND PERMIT-TO-WORK SYSTEM

What you need to know:

- + How to describe a PTW system
- + Why an organisation uses a PTW system



WHAT IS A PERMIT-TO-WORK SYSTEM?

Permit-to-Work systems (PTWs) are not a new initiative within industry. They are a long established method of managing hazards, particularly those hazards that arise in the course of high risk, irregular work or work that may involve conflicting activities.

The PTW system documents a contract between the person in control of the place of work and the person carrying out the task. It specifies the work to be carried out, the location, the hazards associated with the work and the environment, and the required methods of control. It authorises the specified and only the specified work to be carried out.

A PTW pre-determines:

- + The work to be done
- + The known and potential hazards of the work
- + Control methods to be used prior to work starting
- + Co-ordination and communication of hazardous activities in hazardous areas.

The system is for non-routine work and does not include routine operations work which is covered by written procedures, maintenance workshop activities.



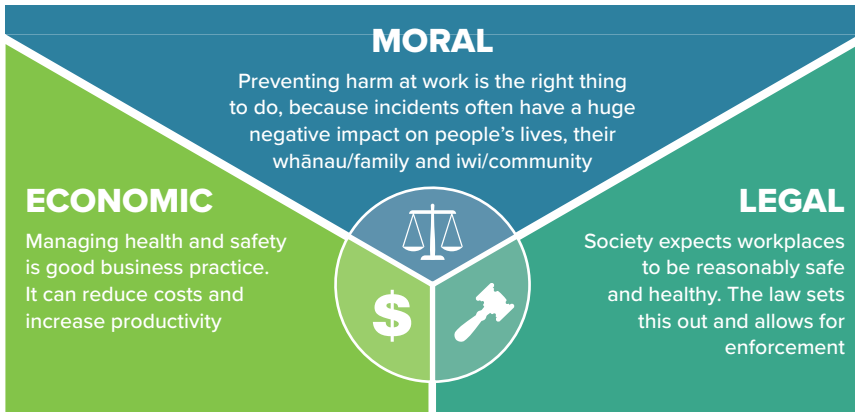
KEY POINT

The issue of a permit does not, in itself, make the job safe.



REASONS FOR MANAGING HEALTH AND SAFETY AT WORK

There are key reasons why health and safety management is important in your workplace. These are:



REASONS WE HAVE A PERMIT-TO-WORK SYSTEM

- ✦ To keep people free from harm
- ✦ Industry has learned from past accidents and permit-to-work systems have been shown to reduce accidents
- ✦ To protect the organisation's assets and reputation as harm and damage will ultimately lead to financial loss for the company
- ✦ The Health and Safety at Work Act (HSW Act) 2015, and associated Regulations requires that the Person Controlling a Business or Undertaking (PCBU) must ensure the health and safety of workers and others affected by the workplace activity
- ✦ The PCBU is also required under legislation to provide a workplace that in so far as is reasonably practicable, is free of risk. Therefore the PTW system is one way that the PCBU can meet its obligations.

THE HEALTH AND SAFETY AT WORK ACT 2015

The Health and Safety at Work Act (HSW Act) 2015 is the key work health and safety law in New Zealand and covers nearly all work and workplaces. The HSW Act came into effect from the 4 April 2016.

PURPOSE OF THE HSW ACT s3

The main purpose of this Act is to provide for a balanced framework to secure the health and safety of workers and workplaces by:

- 1 Protecting workers and other persons against harm
- 2 Providing for fair and effective workplace representation, consultation, and co-operation
- 3 Encouraging unions and organisations to take a constructive role in making work safer and healthier
- 4 Promoting the provision of advice, information, education, and training
- 5 Securing compliance with this Act through effective and appropriate compliance and enforcement measures
- 6 Ensuring appropriate scrutiny and review of actions taken by persons performing functions or exercising powers under this Act
- 7 Providing a framework for continuous improvement and progressively higher standards of work health and safety.



KEY POINT

The HSW Act is underpinned by the principle that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from hazards and risks arising from work.



THE PTW SYSTEM'S RELATIONSHIP TO THE LAW

The PTW system has been developed as one of the key methods of hazard management utilised by industry. The intent of the PTW system is to ensure provision of a safe place of work and protection of:

- + People
- + Assets / Company
- + Environment
- + Product.





HEALTH AND SAFETY AT WORK (GENERAL RISK AND WORKPLACE MANAGEMENT) REGULATIONS 2016

These regulations set out the risk management process, which businesses must use to safeguard workers.

	DESCRIPTION	REGULATION
IDENTIFY, CONTROL, MAINTAIN AND REVIEW	Identify hazards and risks	Part 1, r 5
	Apply the hierarchy of control measures	Part 1, r 6
	Maintain control measures	Part 1, r 7
	Review control measures	Part 1, r 8
INFORMATION, SUPERVISION, TRAINING AND INSTRUCTION	Provide health and safety information, supervision, training, and instruction to workers	Part 1, r 9
FACILITIES	Provide general workplace facilities	Part 1, r 10
FIRST AID	First aid equipment and facilities	Part 1, r 13
	Provide trained first aiders	
EMERGENCY PLANS	Develop emergency response plans relevant to business hazards and risks	Part 1, r 14



**PERSONAL
PROTECTIVE
EQUIPMENT
(PPE)**

Provide personal protective equipment fit for work activities and hazards and risks	Part 1,
Maintain and service PPE, and ensure it is used	r 15, 16, 17

**EXPOSURE
MONITORING
AND HEALTH
MONITORING
OF WORKERS**

Carry out health hazard exposure monitoring at suitable intervals, by or under the supervision of a competent person	
Keep confidential exposure monitoring records for up to 40 years, and make them available to those potentially exposed	
Inform workers of health monitoring and ensure appropriate health monitoring is provided, supervised and paid for	Part 3,
Provide appropriate information about the workplace to occupational health practitioners	r 32-42
Get health monitoring reports where appropriate from occupational health practitioners, and share them with the relevant worker, other relevant PCBUs, and the regulator	
Keep confidential health monitoring records for up to 40 years	

**YOUNG
PERSONS**

Ensure workers under 15 years do not do certain types of hazardous work, tasks, or work in certain areas, with certain types of machinery, or carry out night work (under 16s)	Part 4, r 43-48
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IDENTIFY HAZARDS r5

Find out what hazards are in your workplace that could cause harm. It's really important at this stage to gather lots of information from different sources, especially the people doing the work.



ASSESS THE RISK AS/NZS ISO 31000

Analyse - this means estimating how much risk there is, taking into account how harm could happen and how likely this is, as well as who may be affected, the type of harm and severity of consequences. A risk matrix may be useful when doing this.

When estimating consequence severity, consider:

- + Amount of energy or force
- + Numbers of people affected
- + Personal vulnerability.

When estimating likelihood of exposure to the hazard, consider:

- + Amount of exposure (how often and for how long)
- + Past reports of incidents involving the hazard
- + Advice from experienced workers.

Evaluate - Look at existing risk controls, and make a judgement about whether the level of risk is OK or not OK. This judgement should be made based on organisational policy and with reference to relevant legislation and guidelines. If the level of risk is not OK, ask 'what else could be done to make it OK?'



CONTROL RISKS r6

This means deciding on the most effective risk control measures that are reasonably practicable in the circumstances. Risk control measures should either get rid of the risk or reduce it to a level where everyone is comfortable, including the regulator (WorkSafe New Zealand). Using the 'hierarchy of control' is important here.



MONITOR r7

This means deciding how to regularly check up on the hazards, risk controls, and the people who could be affected by the hazards. Effective monitoring should involve three levels:

- 1 Monitoring the hazard to ensure it is not presenting new or different risks
- 2 Monitoring the risk controls to check they are working
- 3 Monitoring for the effects of hazards on health.



REVIEW r8


Reviewing involves planning for scheduled reviews as well as reviewing after change to check that the risk assessment is still valid.

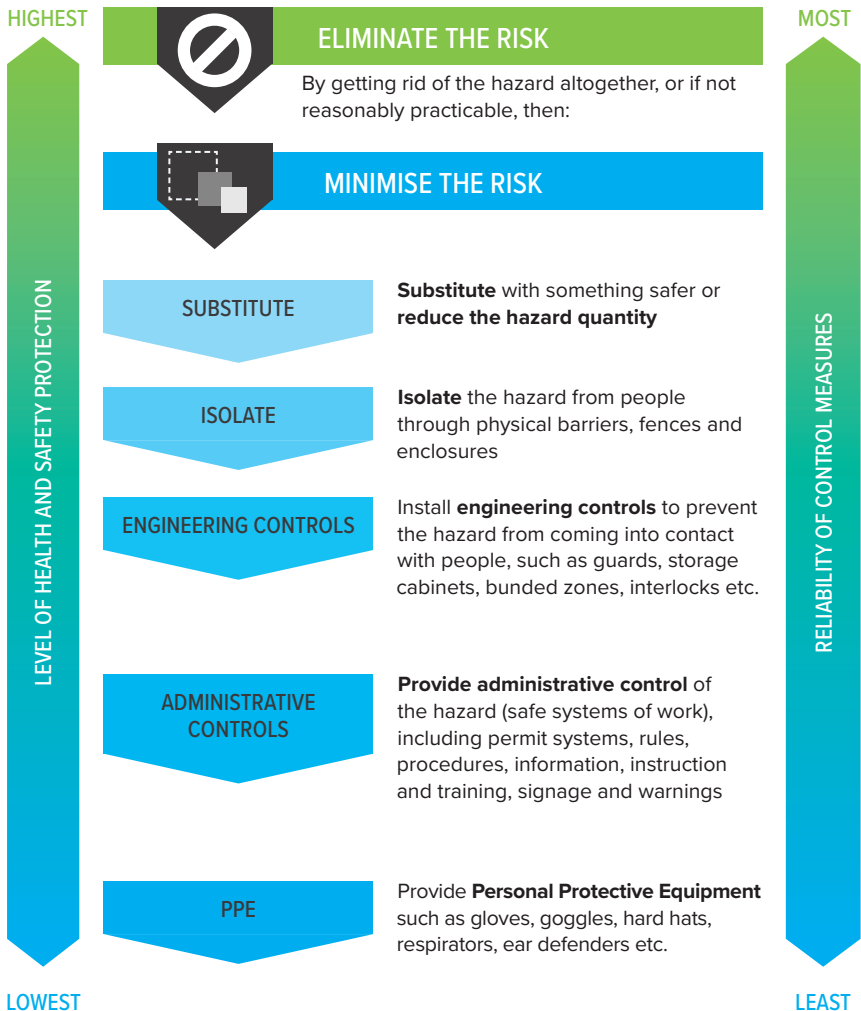
When to review a risk assessment

- 1 After a designated time (high risk = shorter review period)
- 2 After an incident
- 3 After any significant change.



THE HIERARCHY OF CONTROL MEASURES

The Health and Safety at Work (General Risk and Workplace Management) Regulations 2016  r6 sets out a preferred order or hierarchy of risk control that duty holders must use.





ELIMINATE

Hazards can be avoided altogether. For example, an organisation considering expanding its operations to include a new product or service, might decide, on assessment, that it will be too hazardous. At a personal level, some people don't fly to avoid the risk of a plane crash. It can be argued that it is impossible (and probably undesirable) to eliminate all hazards. There will always be some element of risk and uncertainty.

Hazards can also be eliminated by:

- + Redesigning a process
- + Replacing old equipment
- + Changing work methods
- + Automating a task.



MINIMISE

If it is not reasonably practicable to eliminate the hazards and associated risks, you should minimise the risks using one or more of the following approaches:



SUBSTITUTE

This involves substituting a hazardous substance, material or work practice with a less hazardous one. Some examples are:

- + Cleaning with water pressure instead of chemicals
- + Brushing on paint instead of spray-painting
- + Using non-flammable solvents instead of flammable ones.



ISOLATE

A risk can be reduced through controls which isolate a hazard, separating it from where most people work. Physical barriers such as guard rails are also an effective isolation control. Isolation can be achieved through physical enclosures as well as distance and even timing.

Some examples are:

- + Isolating all lines and energy sources
- + Inserting physical blanks on pipes feeding into the confined space (e.g. double block and bleed)
- + Removing fuses/switches on electrical equipment
- + Closing valves, and locking and tagging them
- + Securing moving mechanical parts with chains or chocks.



ENGINEERING CONTROLS

Engineered controls can take the form of guards and interlocks, which are designed to make it very unlikely that an operator can contact moving or dangerous parts of a machine unless they are in a safe state.

Some examples are:

- + Disconnecting belts and drives on machines
- + Purge contaminants from the space and establishing ventilation systems to ensure safe atmosphere is maintained.
- + Mesh screen between conveyor belts, drums and walkways.



ADMINISTRATIVE CONTROLS

Risks may be reduced through administrative controls, such as policies and rules. These may include:

- + PTWs/JSAs/task analysis for every specific job
- + Good work organisation practices that consider job rotation and rest break intervals required for confined space work
- + Having a highly skilled workforce
- + Continually testing the atmosphere to ensure controls are effective
- + Good communication systems
- + Excellent recovery and emergency procedures to minimise consequences if something goes wrong.





PERSONAL PROTECTIVE EQUIPMENT (PPE)

PCBU's must provide PPE to protect workers against hazards that can't be controlled in any other way, and they must ensure that workers use it.

Workers are required to use the PPE they are given. All workers and other users should be trained in the use of PPE and made fully aware of the reasons for its use.

PPE is designed to provide protection for the wearer/user. However, it is always **the last line of defence** because there are many factors which can render its protection useless. For example:

- + Poorly maintained PPE will/can fail (e.g. cracked seal on ear defenders)
- + Dirty PPE's effectiveness can be very impaired (e.g. filters on breathing apparatus)
- + Poorly fitted PPE (e.g. breathing apparatus which is worn by a worker with facial hair)
- + PPE that is not fit for the purpose (e.g. ear plugs with a too low a classification related to the environmental noise)
- + Individual workers deciding not to wear PPE.





REASONABLY PRACTICABLE s22

The term “reasonably practicable” appears throughout the HSW Act and is used to qualify duties to ensure health and safety at work:

- + Something is ‘practicable’ if it is possible or capable of being done
- + ‘Reasonably’ means that it should also make sense - it should ‘stand to reason’.

Working out what is reasonably practicable means looking at the:

- 1 Likelihood of the risk happening in your situation
- 2 Degree of harm that might result
- 3 Knowledge about the hazard, risk, and control measures
- 4 Availability and suitability of control measures in your situation
- 5 Cost of control measures to get rid of or minimise the risk.

The upshot is that duty holders are expected to do what a reasonable organisation or person would do in the situation.



KEY POINT

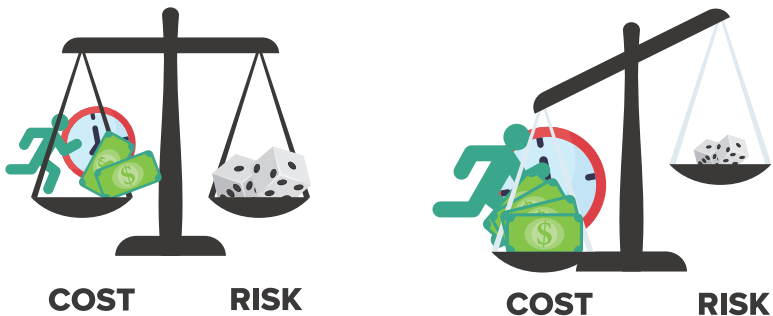
KEEP UP TO DATE WITH GOOD PRACTICE

The best way to work out ‘reasonably practicable’ risk control is to look at what the relevant approved codes of practice, guidelines and standards say. Part of the idea of ‘reasonably practicable’ is keeping up to date with good practice in your industry, as well as what the regulator expects.



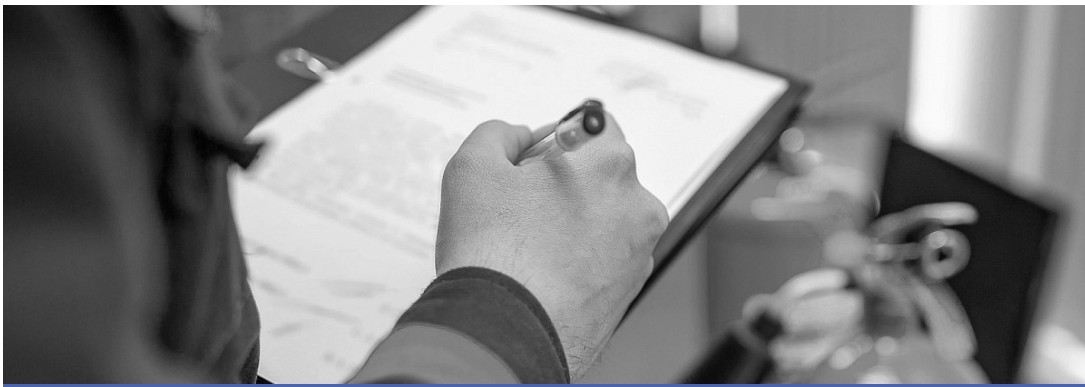
GETTING THE BALANCE RIGHT

If something is possible to do, but the **time, cost, effort** and trouble to do it is a lot more (a gross disproportion) than the benefits to be gained in managing the risk, then it is probably not 'reasonably practicable' to do, and so not legally required.



When you are deciding what is a reasonably practicable step, you need to check:

- + What is common practice in our company for this situation?
- + Are there Approved Codes of Practice, Standards etc available for this situation?
- + What are the industry standards here in New Zealand?
- + It is also good to check international practices.



PERMIT-TO-WORK SYSTEM ROLES AND RESPONSIBILITIES

What you need to know:

- + What the responsibilities are for each worker involved with a PTW, including the issuers and receiver
- + Why communication is critical in the successful execution of a PTW



PTW SYSTEM RESPONSIBILITIES



SITE MANAGER

Has overall accountability for the PTW system on site and is responsible for:

- 1 Ensuring that the company PTW procedures are followed
- 2 Ensuring the system is adequately resourced
- 3 Ensuring the system is audited in line with documented requirements
- 4 Ensuring that training systems meet the defined requirements
- 5 Lead an annual site PTW systems audit
- 6 Must authorise any changes to the PTW system.

The site manager's responsibilities should be reflected in their defined accountabilities in their position description.



PLANT MANAGER/FACILITY MANAGER/ MAINTENANCE OR ENGINEERING MANAGER

Reports to the site manager on all PTW issues and is the site manager's designate in the systems implementation for their given area (any process, related plant or equipment, internal or external to the plant).

The manager's responsibilities are:

- 1 Implementing and maintaining the permit-to-work system for their plant area
- 2 Ensuring the system is adequately resourced for their plant area
- 3 Ensuring the system is audited for their plant area in line with documented system requirements
- 4 Ensuring that training systems meet the defined requirements for their plant area
- 5 Carry out a weekly level 2 PTW audit
- 6 On some sites they counter-sign high risk hot work permits or general high risk tasks' permits.

The asset manager's responsibilities should be reflected in their position description too.



PERMIT ISSUER

Authorises the PTW and has responsibility for the management of the following:

- 1 Ensuring the permit receiver has been fully inducted in both site and factory requirements. (On some sites this is done by sighting induction passbook or card)
- 2 Ensures the site has been verified as being 'safe for the work'
- 3 Participation in the analysis of hazards and determining of controls to be implemented
- 4 Ensuring the permit receiver understands the scope and location of the work to be undertaken
- 5 Entering the correct details into the permit register
- 6 Participating in the auditing of work permits as defined in the company procedures manual (daily level 1 and weekly level 2 PTW audits)
- 7 Revalidation of permits at each shift changeover
- 8 Handover (revalidation) of open permits to another permit issuer if required to leave site for any reason
- 9 Ensuring inspection and cleaning is carried out after any work
- 10 Checking the work area when revalidating the permit to ensure no conditions have changed
- 11 Checking the work area at the end of the job and closing off the job and signing off the permits
- 12 Informing/discussing work permit conditions with all relevant stakeholders



- 13 Ensuring adequate isolations are applied and maintained
- 14 The permit issuer may request the permit receiver to appoint a safety observer who will then report to the permit receiver
- 15 Identifying and arranging immediate actions for non-compliance issues (related or unrelated to PTW)
- 16 Ensuring the PTW work station is kept stocked and tidy at all times.

At their discretion the permit issuer at any time may suspend, or decline to issue permits if they feel that circumstances, including current permit workload, may compromise the safety of plant, process, people or environment.



DESIGNATE / DELEGATE

Provides information to the permit issuer and is responsible for:

- + Carrying out duties as authorised by the permit issuer (e.g. worksite inspection, defining or placing isolations/equipment locks or tags)
- + Preparing permits for issue.

NOT AUTHORISED TO:

- + Issue permits (verbal or written)
- + Issue additional permits
- + Close permits
- + Revalidate permits.



PERMIT RECEIVER

Applies for the PTW and is responsible for:

- 1 Informing WorkSafe New Zealand of notifiable work
- 2 Ensure that people doing the work are trained and competent
- 3 Carrying out task analysis for the work activity
- 4 Being involved with the analysis of hazards and determining of controls to be implemented
- 5 Inspecting the work area with the permit issuer, or their designate
- 6 Consulting with permit issuer on appropriate hazard controls
- 7 Obtaining sign-off for other control permits, when necessary
- 8 Ensuring all permit users are properly inducted
- 9 Checking the work site and revalidating work permits at each shift handover
- 10 Communicating permit requirements to all permit users, in a manner that they understand
- 11 Following all permit conditions
- 12 May be involved in initiating the physical isolations if best qualified to do so
- 13 Applying receiver locks and tags and ensuring isolation integrity
- 14 Ensuring adequate isolations are applied and maintained
- 15 Ensuring the hand back and permit closure is carried out correctly
- 16 Holding a copy of any rescue plans required
- 17 Updating the permit/hazard identification information and permit issuer, if a change in the work scope arises



- 18 Notifying the permit issuer if a hazardous condition occurs/arises
- 19 Ensuring the workplace has been left in a safe and tidy state upon completion or suspension of work.



PERMIT USER

Ensures that they are aware of the relevant permit information and is responsible for:

- + Ensuring that they are trained and competent to do the work
- + Carrying out the work activity to permit requirements
- + Identifying work scope changes and reporting them back to the permit receiver
- + Raising health and safety, environmental, product safety and equipment safety concerns, directly at the time, to the permit issuer.

SAFETY OBSERVER

Responsible for monitoring hazardous work, stopping work if a dangerous situation arises, and initiating rescue/emergency/containment procedures if required.



GENERAL

- + Constantly monitoring the work and adjacent areas
- + Ensuring that any hazards which arise as a consequence of the work or changes in the area environment are immediately communicated to other stakeholders
- + Ensuring that a means of communication with the stakeholders (e.g. radio is in his/her possession and in full working order for the term of work)
- + Ensuring that all safety requirements specified on the permit or task analysis are in place both before work proceeds and throughout the job
- + Cannot have another job at the same time as being the safety observer.

WORKING AT HEIGHTS

In addition to responsibilities listed under general the safety observer is also responsible for the following during work at heights:

- + A safety observer is required to be present when a person is working at heights
- + A safety observer is required to be present when a cherry picker is in operation
- + Must be conversant with the procedure for raising the alarm in event of an accident and following pre-arranged rescue plan.



HOT WORK

In addition to responsibilities listed under general the safety observer is also responsible for the following during hot work:

- + Containing, detecting and extinguishing all sparks, hot debris etc.
- + Monitoring wind direction
- + Undertaking no other duties which interfere with his or her role as a safety observer while a source of ignition exists
- + Remaining on work site continuously for 30 minutes after completion of work to ensure no ignition sources remain (this is industry standard but can be increased in high risk areas)
- + Must have knowledge of correct use of the appropriate fire extinguisher
- + Must be conversant with the procedure for raising the alarm in event of fire.

CONFINED SPACE

In addition to responsibilities listed under general the safety observer is also responsible for the following during confined space work:

- + Having control of the entry and exit of a confined space
- + Carrying out field calibrations of atmospheric test equipment, in particular prior to the start of work but must be trained and competent as a gas tester
- + Prior to the issue of a permit, conduct pre-entry gas test and release the information to the permit issuer
- + Authorising and controlling those entering and leaving the confined space
- + Ensuring, without entering the vessel, that no personnel remain in the



confined space at the conclusion of the days work

- + Regularly verifying the status of those working in the confined space
- + Recognising and responding to abnormal conditions inside and outside the confined space and raising the alarm if required
- + Evacuating the confined space if the emergency alarm sounds (except for routine test)
- + Barring the entry point during breaks and at the end of the work period
- + Displaying the permit and confined space entry certificate at the point of entry
- + Countersigning the confined space entry certificate and agreeing to ensure that all those inside the space understand and abide by its requirements
- + Stopping work and evacuating personnel from confined space, if atmospheric test results are outside the prescribed limits
- + Re-testing the atmosphere after breaks
- + Recording the atmosphere conditions for oxygen and flammables using approved calibrated atmospheric test equipment at intervals of 30 minutes
- + Understanding what the rescue plan is and assisting in its execution
- + Never, under any circumstances, entering the confined space
- + Having no other duties which interfere with his or her role as a safety observer, and never leaving his/her post while an entry is in progress.



KEY POINT

The safety observers responsibilities will vary depending on the work they are observing. For example if they are observing hot work being conducted at height the responsibilities include those outlined for general, hot work and working at height.



COMMUNICATION

Communication between various parties involved in a work activity is VITAL to effectively manage hazards. Regardless of formal responsibilities all people involved in the work permit process have a duty to communicate with each other prior to, and during the work.

Key points to cover are:



ADMINISTRATIVE

- + Suspension of permits
- + Emergency requirements
- + Permit expiry
- + Permit revalidation
- + Permit closure.



WORK CONDITIONS

- + Scope of work
- + Hazards involved
- + Isolations
- + Safety equipment and requirements.



NOTIFICATION

- + To control room
- + Others in the area
- + Others stakeholders who may be affected.



PERMIT RECEIVER'S SPECIFIC COMMUNICATION RESPONSIBILITIES

It is the permit receiver's responsibility to ensure all permit users are fully briefed on all conditions and hazards of the job as identified in the permit.

This communication should include:

- + Involving all people involved with the job
- + Focusing on the job – objectives, plans, procedures
- + Identifying individual responsibilities
- + Focusing on the hazards associated with the job
- + Focusing on the hazard controls and precautions
- + Outlining emergency plans for the job.

If there is any change to agreed work procedure for the day, job should be stopped and discussed in the team. Concerns from staff should be discussed and actions agreed upon.





PERMIT-TO-WORK MANAGEMENT

What you need to know:

- + What the PTW process is
- + When a permit is required
- + What the different permit mechanisms are



SCOPE OF THE PERMIT-TO-WORK SYSTEM

The PTW system and its procedures must apply to all workers including contractors, and sub-contractors, when working on a company site.

The system covers the following key areas:

- + Permit application
- + Responsibilities and authorisation
- + Permit forms
- + Hazard management
- + Revalidation
- + Closure
- + Training, auditing and monitoring.





PERMIT ISSUING WORKSTATION

For a PTW system to work it is required to have a suitable number of permit issuing locations/facilities. These are a dedicated area for the administration and issuing of work permits &/or certificates. All permit forms and certificates should be kept at these locations

Each designated area will consist of, but not be limited to, the following:

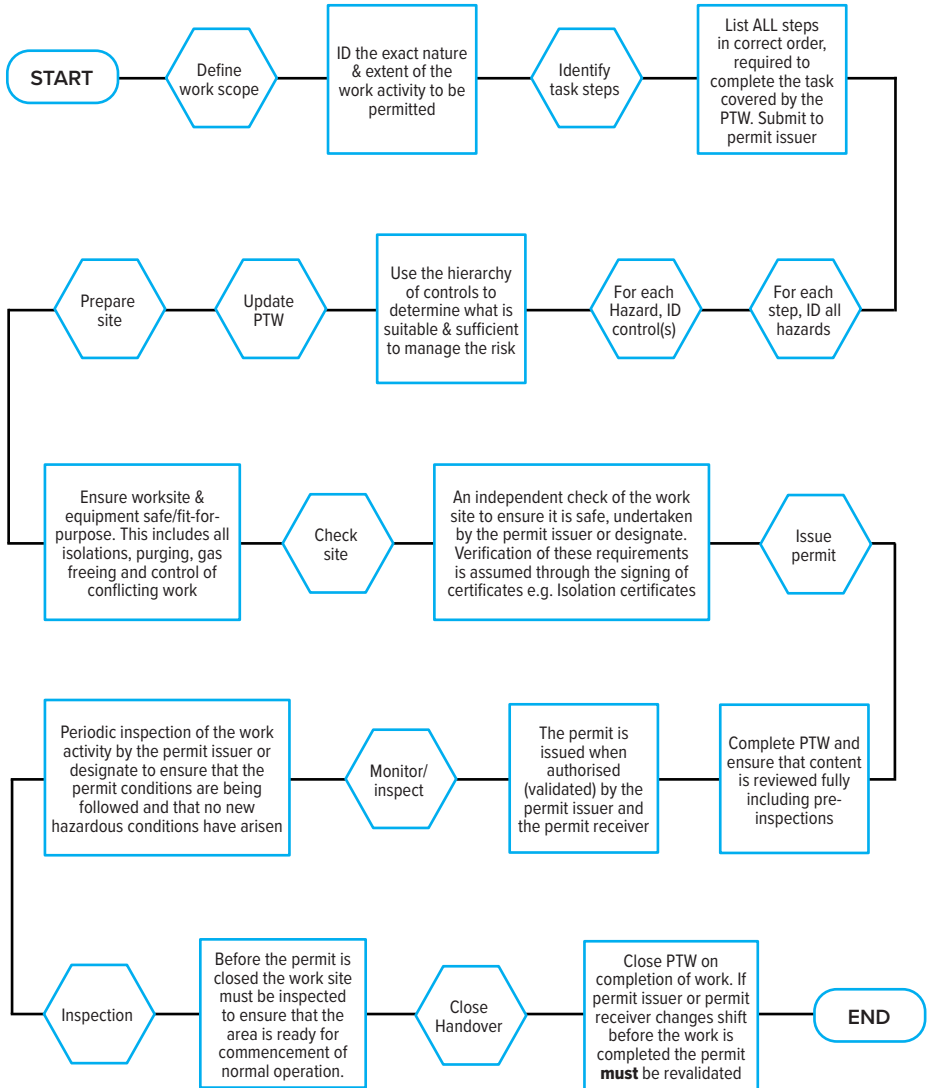
- + Isolation equipment (locks, tags, etc)
- + Permit register
- + Permit forms
- + Certificate documents
- + Permit issuing procedure
- + A permit display unit
- + Filing facilities for closed permits
- + Site Map.



FILING OF PTW DOCUMENTATION

It is good practice for all PTW documentation to be filed in a central location for a total period of two years. It should be easily retrievable, so spend some time working out how you will retain the documents.

PERMIT-TO-WORK OVERVIEW





WHEN A PERMIT IS REQUIRED

A work permit is normally required in the following situations:

- + All hot work, except that which is carried out in a designated hot-work area
- + The location of the task involves exposing the workers to a hazardous environment (e.g. confined space entry, work at heights, excavations, toxic, explosive or oxygen deficient/excessive atmospheres)
- + The task itself has the potential to release energy (pressure, electrical, mechanical, chemical, product) or hazardous materials that could be a hazard to the workers or to others
- + All non-operational inspections require at least a verbal permit
- + All work on emergency monitoring and protection systems (fire systems).

The permit issuer may at any time and at their discretion decide that a given work activity requires a permit.



STANDARD OPERATING PROCEDURES

A permit is not required where there is a Standard Operating Procedure (SOP) in place for a **routine operational task**, provided the SOP clearly identifies the associated hazards of the task and surrounding environment, and also details the necessary controls required (including defining exact isolation points and methods).

The SOP must be part of an **approved** procedure/training manual for that area/department. All people operating under the SOP must be fully trained and assessed as competent against the requirements of the SOP.

Certain tasks should not be covered solely by an SOP - these include hot work, confined space entry, work at heights, excavations, work in toxic/explosive &/ or oxygen deficient atmospheres. In these situations, the SOP will be attached to the permit.

The permit issuer must be aware that the SOP task is taking place to ensure no conflicts with other permitted work. The permit issuer may at any time and at their discretion decide that a given work activity requires a permit.





PERMIT MECHANISMS

PERMIT

The document that identifies the:

- + Application
- + Scope of the work to be done
- + Additional certificates
- + Other stake holders
- + Plant isolations
- + Authorisation and revalidation
- + Hazard identification
- + Closure.

PERMIT REGISTER

Some organisations use a daily permit register which is required to be filled in for all permits issued (both verbal and written). It provides a summary of all permits that have been issued from a particular permit-to-work station (both verbal and written) and their current status. The permit register would be located at the permit-to-work station.



VERBAL PERMITS

In instances where it has been ascertained that the risks involved in a work activity and environment are low (a permit assessment score of 4 or less) and purely at the permit issuer discretion, a verbal permit may be issued. This must be recorded in the daily permit register. It is suggested that any verbally permitted activity must be able to be completed within the shift in which the verbal permit was issued.

PERMIT-TO-WORK HAZARD IDENTIFICATION

This records the work to be completed and outlines the work hazards identified. It should record the hazards known to the permit issuer and permit receiver and state the control measures.

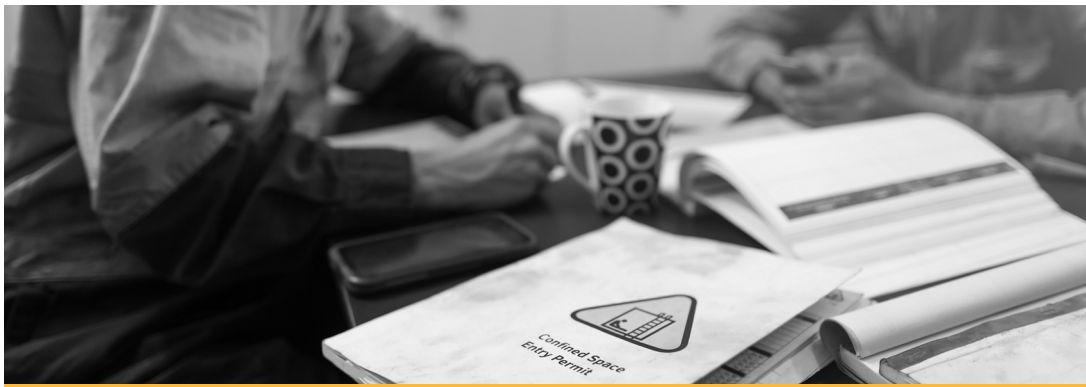
A hazard analysis shall be completed for every work permit.

PERMIT CERTIFICATES

It is common practice in industry that in addition to the permit form, a number of additional certificates deal with the control of hazards in relation to specific activities that make up the scope of work. The permit issuer and permit receiver must sign off the certificates. The permit issuer will require the authorisation of certificates as evidence that the stated controls are in place.

One copy of the permit stays at the permit-to-work station and the duplicate copy is displayed at the work site. This rule also applies for the hot work/ confined space entry/ crantage certificate /excavations/working at heights and energy isolation.





PERMIT-TO-WORK TYPES

What you need to know:

- + About, and be able to describe the various types of permits &/or certificates use
- + Sufficient information to be able to describe the specific terminology used for each permit type
- + About any roles/responsibilities specific to each permit, and
- + Be able to describe the general rules for each type of permit



HOT WORK

Hot work is any work that involves a source or potential source of ignition.

The term 'hot work' covers gas cutting, and welding, rotary disc cutting and grinding, soldering, paint stripping (hot air and flame gun), roof repair (bitumen boilers), and any other operation that uses naked flames or produces sparks.

It also includes the use of non-intrinsically safe or flame-proof equipment in potentially flammable atmospheres.





GENERAL RULES

- + In some companies the plant/process/area manager sign-off/authorise all hot work permits that are to be considered high risk
- + No hot work can take place under a verbal permit
- + In most circumstances, hot work should not take place while the fire suppression or detection systems for that area (sprinkler installations etc.) are non-operational. In situations where hot work must take place while they are non-operational, additional controls should be put in place. A fire system impairment certificate may also be needed
- + A safety observer must be present for all hot work maintaining a continuous watch throughout the work and remaining at the work site continuously for at least 30 minutes (time period may be increased after if in a particular hazardous area)
- + Portable hand held fire extinguishers of the appropriate type, are required for carrying out 'hot work' and must be available at the working site. Some sites set a minimum requirement of 2 x 2 kg extinguishers of the correct type for work inside buildings or 2 x 4.5 kg extinguishers for any outside Hot Work
- + It is good work practise that additional extinguishers be provided in addition to those provided for the normal protection of the building. Any discharged extinguisher must be returned to the stores for replacement. Do not leave a partially discharged extinguisher in the workplace
- + The location of hose reels within the immediate area should be identified and, where available, run out to the working area during hot work
- + Check construction of building in the immediate area of work; look for cavities, cable runs and pipe work, saw dust and other flammable materials



- + There shall be no direct welding or hot cutting (e.g. grinding) onto any flammable material
- + Ensure a safe and stable working platform. Working from a ladder is not considered good practice
- + Ensure adequate lighting is available in work area. (Note: When using grinding machines under fluorescent lighting, additional precautions are required to prevent the strobe effect)
- + Ensure pipe work and vessels that have contained flammable liquids or gases have been made inert and have been certified ‘gas-free’
- + Ensure that environmental testing for flammable compounds has been conducted immediately prior to work starting in high-risk areas and confined spaces
- + Keep the area of operations clean, free of combustible materials and, where possible, damped down
- + Cover areas of flammable materials that cannot be cleared, with a fire resistant blanket
- + All sparks must be contained by use of fire blankets or other means to prevent transfer into unprotected areas
- + Consider the fire danger status if the work is outdoors. Check the “check it’s alright” website.
- + Ensure the appropriate controls (screens etc.) are put in place to safeguard others from exposure to arc flash where applicable
- + Ensure barriers are in place to prohibit passage of other personnel within the work area



- + Sensitive electronic equipment should be isolated from welding current or conducted heat
- + Ensure proper ventilation of the hot work area to remove all toxic fumes, if required
- + Ensure all rotary cutting and grinding discs are in good condition and suitable for the grinder and work to be conducted
- + Ensure correct controls are identified and followed when using any chemicals (e.g. pickling paste). Refer to Safety Data Sheet (SDS)
- + Ensure scaffolding boards (if in use) are not in contact with a heat source
- + Ensure all escape routes are clear.

WHEN THE WORK IS COMPLETED

- + Remove all equipment and debris from the area
- + Maintain a continuous close watch for at least 30 minutes after work has ceased. Sparks from hot work can create smouldering fires, which do not show themselves immediately.

ALL GAS CUTTING EQUIPMENT SHOULD:

- + Have hoses kept in good condition
- + Have anti flash devices fitted to valve set
- + Have the valve key attached to valve set and readily available
- + Gas cylinders should be secured in the upright position, both in use and storage
- + All the equipment shall be in accordance with the relevant New Zealand Standards.

NZS 4781 - 1973 HOT WORK ON DRUMS AND TANKS

If cutting drums or tanks for further details of safety requirements refer to

- + NZS 4781 - 1973 - Code of Practice for Safety in Welding and Cutting, and
- + Code of Practice - Hot Work on Drums and Tanks. - 1988 by the Department of Labour (now called WorkSafe New Zealand).



CONFINED SPACE ENTRY

CONFINED SPACE

Confined space is an enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there is a risk of one or more of the following:

- + An oxygen concentration outside the safe oxygen range
- + A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation
- + A concentration of flammable airborne contaminant that may cause injury from fire or explosion
- + Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.

SAFE ATMOSPHERE

Safe Atmosphere is one where the atmosphere is considered safe for entry for cold work when concentrations are:

Oxygen 19.5 – 21.5% vol.

Flammables <5% LEL (Lower Explosive Limit) and 0% for hot work

Toxic < 50% WES (Workplace Exposure Standard) as a guideline



GENERAL RULES

- + A register that clearly identifies confined and restricted spaces should be maintained
- + Each confined space shall be clearly labelled. The sign shall read 'Confined Space. No entry without a permit-to-work'
- + All confined space entries require a competent safety observer to be present at the entry point while personnel are inside the confined space
- + Continuous atmospheric monitoring of the confined space must take place while there is a person inside
- + No entry is to take place if the atmosphere is outside the limits described above
- + People in the confined space must be withdrawn if the atmosphere is outside the limits described above
- + Hot work in a confined space presents particular risks. Under no circumstances is it permitted where there may be flammable residues or where the atmosphere exceeds 1% of the LEL (Lower Explosive Limit)
- + The safety observer is to record the names and times of all people who enter and exit the confined space as well as the results of atmospheric monitoring.



ENTRY PREPARATION

- + All hazardous liquids and residues will be removed from the confined space
- + All physical hazards must be identified and controlled
- + Isolation, de-pressurising and opening of confined spaces are to be done in accordance with recognised procedures
- + All vessels will be isolated from process pipe work in such a manner as to allow for the free draining of all liquids and natural ventilation
- + Internal and external access ways will remain clear at all times
- + Vessels will be purged either by natural or forced ventilation until it is confirmed as having a safe atmosphere. Acceptable methods of forced ventilation are a venturi or air driven fans placed as far as practical from the entryway.





RESCUE PLAN

- + A rescue plan must be developed for each confined space entry. This should take into account all possible circumstances that would require a rescue and then outline the methods of getting people out of the confined space
- + The rescue plan should be divided into 3 phases with a description of how each will take place:
 - Self-rescue
 - Assisted rescue from outside
 - Rescue by emergency services.
- + The plan shall include how on-site or external emergency services will be notified and clear statements on what they will be told and how to get to the site of work.





ACTIVITY



Consider the table of results below. Then determine if a confined space entry for cold work should proceed, and under what circumstances.

The limits prescribed on the permit are:

Oxygen	19.5 – 23.5% vol.	WES = 25 ppm (CO)
Flammables	<5% LEL	WES = 10 ppm (H2S)
Toxic	< 50% WES	WES = 25 ppm (Ammonia)

ATMOSPHERIC CONDITIONS 1

PROCEED: YES NO

COMPONENT	RESULT	COMMENT
O ₂	20.5% vol.	
Flammables	2% LEL	
CO	0 ppm	
H ₂ S	0 ppm	

ATMOSPHERIC CONDITIONS 2

PROCEED: YES NO

COMPONENT	RESULT	COMMENT
O ₂	20.9% vol.	
Flammables	8% LEL	
CO	0 ppm	
H ₂ S	0 ppm	



ATMOSPHERIC CONDITIONS 3

PROCEED: YES NO

COMPONENT	RESULT	COMMENT
O ₂	17% vol.	
Flammables	4% LEL	
CO	5 ppm	
H ₂ S	0 ppm	

ATMOSPHERIC CONDITIONS 4

PROCEED: YES NO

COMPONENT	RESULT	COMMENT
O ₂	21% vol.	
Flammables	1% LEL	
CO	0 ppm	
H ₂ S	8 ppm	

ATMOSPHERIC CONDITIONS 5

PROCEED: YES NO

COMPONENT	RESULT	COMMENT
O ₂	21% vol.	
Flammables	4% LEL	
CO	0 ppm	
H ₂ S	9 ppm	



CRANAGE AND LIFTING EQUIPMENT CERTIFICATE

CRANE

Any appliance equipped with a mechanical, hydraulic, pneumatic, or electrical means for raising and lowering a load by cables, ropes or chains and for transporting a load while suspended, and includes a hiab attached to a vehicle. It includes all chains, slings, ropes, shackles, swivels, rings, hooks, or any other tackle used in the operation of a crane but does not include:

- + Hoist block running on a fixed rail or wire (gantry)
- + A stacker or conveyor whereby a load is moved by means of a belt or platform
- + An earth moving or mineral moving or excavating appliance not fitted with a grab unless it has been specifically designed to lift loads.





CRANE OPERATOR

A person who meets the criteria set out in Appendix 1 of the publication sent out by the Power Crane Association of NZ.

RIGGER/DOGMAN

A person who meets the criteria set out by the Power Crane Association of NZ.

LIFTING APPLIANCE

Any machine other than a crane that is used to raise or lower a load, but does not include a conveyor, elevator, or an excavator handling soil, aggregate, mineral or a like substance.





GENERAL RULES

INSPECTION/CERTIFICATION

Cranes and lifting appliances provided and used must be regularly maintained in a safe manner. This equipment must comply with the requirements of the Health and Safety in Employment (pressure equipment, cranes and passenger ropeways) Regulations 1999 and have a current inspection certificate to confirm this.

All lifting equipment including cables, chains, slings, wire ropes, shackles etc. shall be inspected annually by an approved authority and tagged to show this. The appropriate test and examination certificates shall be available as proof.

Any equipment damaged or suspected of being damaged, must be removed from active use immediately and clearly labelled to avoid accidental use.

WEATHER CONDITIONS

Strong wind, rain, poor visibility and other weather or environmental conditions that could compromise safety, shall be considered before any lifts will be under taken.

OVER-HEAD POWER LINES

Unless the electrical supply authority has been advised in writing then no craning will be carried out within 4 metres of any overhead power line and any part of a crane or the load being lifted.



CRANE SET UP

Before a crane can be set up on site the under-ground services are required to be checked to ensure that no weight bearing outriggers are positioned over storm water drains, tunnels, or other potential subsidence circumstances.

LIFT PLANS

Where the load on a crane is over 75% of its working capacity, a lifting plan is required. This consists of additional information that is required to be attached to the safe work permit.

- + A copy of the under-ground service drawings and clearly marked with the position of the crane and it's out riggers
- + The cranes load chart to show the cranes capacity at the intended lifting radius
- + The weight of the load to be lifted taking into account all rigging
- + A plan showing the direction of the lifting slew and the area to be taped off and controlled.

TAG LINES

Where practical a tag line shall be used on all loads to ensure that the load is under control at all time to prevent spinning etc.

HELICOPTER LIFTS

All lifts under taken by a helicopter will require a lift plan before work commences. This is to include the weight of the item being lifted, the lifting capacity of the helicopter, the ground control personnel and the area to cordon off.



CRANE TERMINOLOGY

- + Maximum radius
- + Total weight of load*
- + Clearance height under ceiling (if any)
- + Allow distance from jib head to hook
- + Height of hook from ground
- + Height of obstruction between crane and load
- + Allow for obstructions which may hinder the counterweight when slewing
- + Allow for obstructions and their distance from centre of rotation
- + Boom length
- + Make sure ground is firm
- + Load weight calculation →

ACTUAL LOAD WEIGHT

- + Crane Hook Block
- + Slings, Spreaders, Shackles
- + Any other lifting attachment

= Total Weight of Load

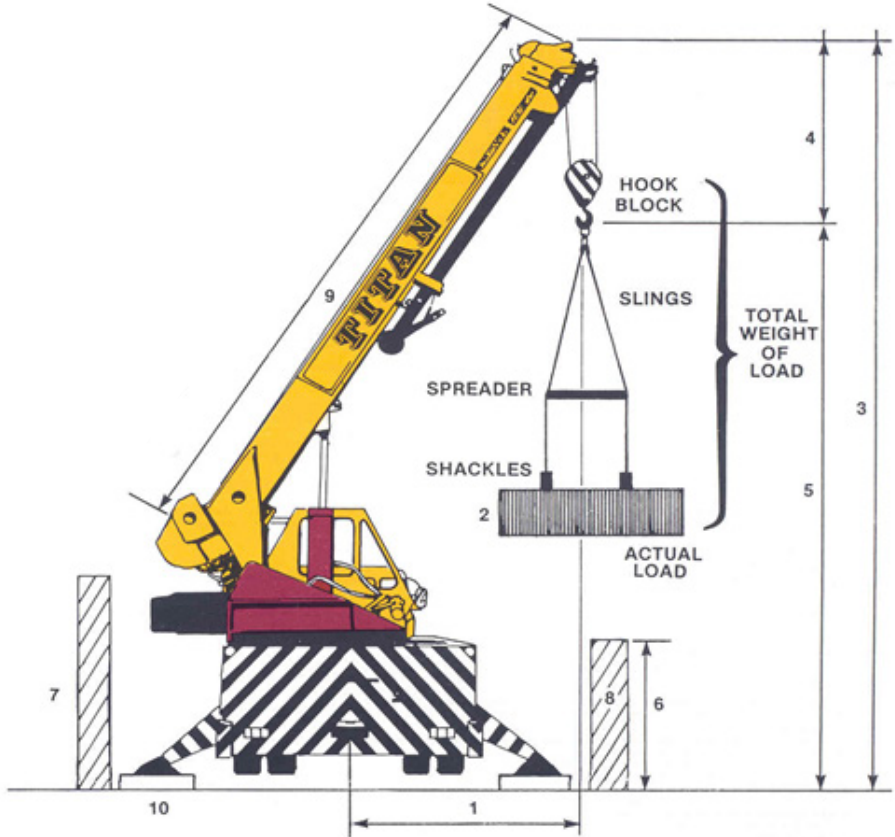


KEY POINT

The total of which must not exceed any load capacity listed in any Crane Rating Chart.



CRANE COMPONENTRY





EXCAVATION

DEFINITIONS

- + **Excavation:** Trenches, excavations, shafts, penetration and drives
- + **Demolition:** The dismantling, wrecking, pulling down or knocking down of any building or structure or part thereof; but does not include such work of a minor nature which does not involve structural alterations
- + **Drives:** Small tunnels cut into the sides of trenches or shafts
- + **Excavations (greater than 150mm deep):** Open excavations are wider than trenches and include foundations, building sites etc.
- + **Shafts:** Vertical excavations of variable depth and section
- + **Penetration:** Work that has the potential to penetrate into a wall cavity or through the wall thickness
- + **Trench:** A long narrow excavation where the horizontal width at ground level is less than the vertical depth of the deeper side

EXCAVATION SURVEY

The field location of underground services/objects that have been identified on the drawings attached to excavation certificate. The excavation boundary is also to be defined on drawings submitted and marked out on the ground about the excavation area.

EXCAVATION BOUNDARY

The site area that is marked which determines the location of the excavation.



RESPONSIBILITIES

Everybody involved in the excavation is responsible for complying with any site procedures and code of practice for excavation works.

PERMIT ISSUER

The permit issuer is responsible for ensuring that:

- + Other PCBUs have been consulted such as local councils, power supply, water supply and optic cable
- + Application for an Excavation Certificate is made in sufficient time for sign off
- + Necessary site drawings are assembled and marked identifying the services affected and all relevant drawings are attached to the certificate
- + The work place and plant conditions will enable excavation to take place, if roadways blocked that they have alternative emergency access and any necessary notifications for Fire Service and Insurance have been made.

ENGINEERING MANAGER (OR DELEGATE)

The engineering manager (or delegate) is responsible for ensuring:

- + Checking that the relevant drawings are attached to the certificate and are marked up with underground services/objects identified
- + Ensuring that the controls specified on the certificate are appropriate.



PERMIT RECEIVER

The permit receiver is responsible for:

- + Ensuring that WorkSafe New Zealand have been notified if necessary
- + Following the instructions on the attachment certificate and work permits when the work commences
- + The appointment of a safety observer is required, ensuring that barricades, warning tapes required are erected to prevent others from injury.

GENERAL RULES

- + Some excavation tasks are 'notifiable hazardous works' and are described in r. 24, 25 and 26 of the Health and Safety in Employment Regulations, 1995. While this Act has been superseded by the HSWA 2015, these regulations have not yet been updated, but the content is still legally binding. The guidelines for notifying WorkSafe New Zealand are:
 - Any trenching shaft or pit more than 1.5 m deep and which has a depth greater than the horizontal width at the top
 - Any excavation in which workers are required to work with a ground cover overhead
 - Any excavation in which any face has a vertical height of more than 5 m and an average slope steeper than a ratio of 1 horizontal to 2 vertical.
- + An excavation certificate is required when breaking ground of a depth greater of 150 mm. This must be completed before the work permit can be issued
- + An approved Excavation Certificate must be produced before a work permit can be issued for any excavation work



- + Excavation work should be pre-planned wherever possible
- + If unidentified services are located, work must cease and the permit suspended until approval is given for re-validation
- + Excavation within 500 mm, in any direction, of known underground services, positively located (visual) must be carried out by hand
- + Excavation within 2 m, in any direction, of known underground services, indicatively located (drawings or locator) must be carried out by hand
- + Excavation within 2 m, in any direction, of known underground services, indicatively located (drawings or locator) must be carried out by hand
- + All excavations left unattended must be barricaded. Portable flashing warning lights must be erected during hours of darkness for areas that are not illuminated
- + Any excavation greater than 1.5 m depth, requiring entry by personnel, is classified as a confined space entry and must be covered by a confined space certificate, in addition to the excavation certificate
- + Access and egress to excavation must be via secure ladders, steps or scaffolding
- + No Excavation Certificate is required for designated garden areas where hand tools are used and the depth of the work activity does not exceed 500 mm.





METHOD

- + Application is made preferably at least three working days before work is due to commence, so that drawings and detection equipment can be used to check the area required to be excavated, and the certificate developed showing the methods of control
- + The permit issuer will complete the Excavation Certificate in conjunction with the permit receiver
- + Key details to consider:
 - Method of shoring (support) to ensure excavation remains safe (e.g. shoring of vertical sides or batter to prevent slippage)
 - Excavation method whether mechanical or by hand, including details of field identification method
 - Notify WorkSafe New Zealand if required.





WORK AT HEIGHTS PERMIT

Where there is the potential to fall from any height, the PCBU must take all reasonably practicable steps to either eliminate the risk, and if that's not reasonably practicable, to minimise the risk to workers of harm arising from the fall.

There is **no minimum** height referred to in the HSWA or associated Regulations; each task where a fall from height is a hazard, then the PCBU must assess the risk and use the hierarchy of controls to manage the risk.



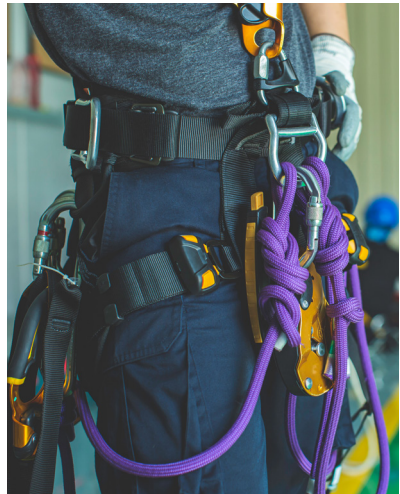


GENERAL RULES

- + Many organisations determine internal minimum height guides. You should find out what your organisation interprets as the height requiring a PTW
- + The PCBU must provide means to prevent the person from falling
- + Any means provided must be suitable for the purpose for which they are to be used
- + All people working at height above 5 metres are required under reg 2, 21 and 26 of the Health and Safety in Employment Regulations, 1995 to have notified Worksafe New Zealand before obtaining a permit-to-work
- + The equipment must be checked and functioning properly
- + Workers and safety observers must be able to communicate with each other
- + Live aerials should be confirmed dead before work on them commences
- + Tools or equipment liable to fall should be suitably constrained or restrained
- + Barriers and signs should be erected to prevent the passage of other personnel into the area
- + When establishing a drop zone, consider 'bounce' factors.

SAFETY HARNESS

- + Fall protection systems and their related safety harness, lines, etc. are designed to catch and hold a person in the event of a fall. They are not designed to hold a person in a working position
- + They should only be used when there is no other form of fall restraint available. Fall arrest systems only provide protection for the person using the safety harness once they have already fallen – they do not prevent falls
- + Use of safety harnesses, fall arrest systems and related rigging of static lines, anchor points etc. is an extremely skilled and specialised area and should only be carried out by a fully trained and competent person
- + Anchor points must be certified by an engineer
- + People expected to use a safety harness and fall arrest system must be able to demonstrate to the permit issuer that they have completed training to a NZQA unit standard delivered by an approved training provider
- + The safety harness must have been certified as safe to use within the last 6 months
- + There must always be a safety observer present when a person is using a safety harness
- + A rescue plan should be documented in the permit-to-work and be carried out by competent personnel.





CHERRY PICKER/SCISSOR LIFT/MEWPS

- + Power operated elevated work platforms, which include cherry pickers, scissor hoists, etc. are specialised pieces of equipment. It is essential that the correct type of machine is used for the job, and that it is set up and used by a competent person
- + The operator must be competent to use the device
- + The elevated platforms must have valid certification
- + There must be a person present, acting as an safety observer, when a mobile platform is in operation
- + Workers are required to wear a safety harness each while they are working on an MEWP; it must be tethered to a certified anchor point, and must incorporate a short energy absorber
- + On a scissorlift, a harness should be worn unless a hazard assessment has revealed that there is no risk of falling.





FORKLIFT/SAFETY CAGES

- + Work platforms/safety cages should only be used on forklifts when designed specifically for the purpose
- + Where possible, the tilt lever on the forklift must be locked out. However, many models do not contain a tilt lever. In these cases, an alternative method of ensuring that the safety cage cannot be tilted must be used (e.g. turning the forklift motor off)
- + The safety cage must have current certification
- + The safety cage is to be attached to the forklift
- + The forklift driver remains seated in the forklift at ALL times
- + The person in the safety cage is to wear a safety harness attached to the safety cage for the purpose of fall restraint
- + People should not be transported in a safety cage.





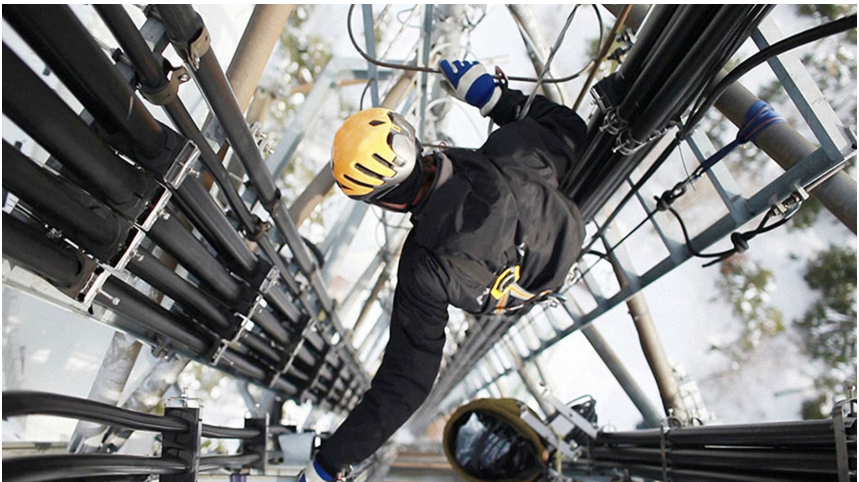
SCAFFOLDING

- + Scaffolding needs to be designed and erected to suit the type of work to be carried out, the site conditions and the anticipated workload
- + The erection or dismantling of scaffolding from which any person may fall 5 metres or more is classified as notifiable work and the local WorkSafe New Zealand office must be notified prior to its commencement
- + A person erecting scaffolding to a height of 3 meters or more must be a registered and competent scaffolder
- + The scaffolding needs to be 'tagged' or certified as being safe and specify specific weight limitations.
- + If working around live process equipment, all equipment must be protected from falling objects or suitably safeguarded to prevent damage. No loose items should be left unsecured
- + Ground stability should be checked before erecting a scaffold
- + People erecting the scaffold, and not within the confines of the scaffold, should be wearing safety harnesses.



LADDERS

- + Before use, always consider whether using a ladder is the best and safest means of doing the job. Remember that ladders are not designed as working platforms. They should only be used for access or to carry out minor or routine work
- + Only one person should use a ladder at any one time
- + Check that the ladder is in a safe condition to use
- + Use the ladder at a safe angle – using the guidelines of prevention of falls
- + Secure the ladder at top and bottom, allowing at least one metre extension above the step off point
- + Maintain three (3) points of contact all times
- + Follow AS/NZS 1892 (Safe Use of Ladders) and guidelines to prevent falls from heights.





SUMMARY OF NOTIFIABLE ACTIVITIES

WorkSafe New Zealand requires PCBUs to notify them when conducting some hazardous works. The notification form on their website still refers to the Health and Safety in Employment Regulations 1995; in particular r. 26. However, this requirement is still valid and the form will be updated in due course.

The notifiable hazardous works are:

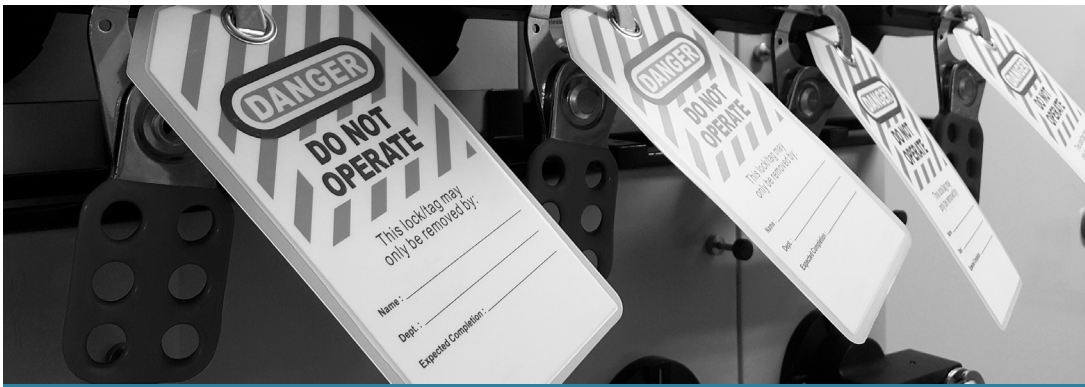
- + Logging or tree felling undertaken for commercial purposes
- + Construction work with a risk of falling 5 m or more (there are exclusions so you should check)
- + Erecting or dismantling scaffolding with a risk of falling 5 m or more
- + Using a lifting appliance where the appliance has to lift a mass of 500 kgs or more a vertical distance of 5 m or more
- + Work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 m deep and having a depth greater than the horizontal width at the top
- + Work in any drive, excavation, or heading in which any person is required to work with a ground cover overhead
- + Work involving the use of explosives, or storage of explosives for use
- + Work that in which a person breathes compressed air, or respiratory medium other than air (not diving)
- + Work that in which a person breathes compressed air, or respiratory medium other than air (diving).



NOTES

A series of horizontal dotted lines for taking notes.





ISOLATION PROCEDURES

What you need to know:

- + What energy isolation means and be able to explain it
- + What the roles and responsibilities are that relate to energy isolation
- + How to isolate energy as part of a permit requirement, and
- + Be able to describe the general rules for isolation



DEFINITIONS

ISOLATIONS

Isolations are placed to provide a safe means of isolating sources of harm prior to carrying out work. Sources of harm may include:

- + Inadvertent operation of equipment or process
- + Sudden release of pressure
- + Temperature
- + Chemical substances
- + Electrical hazards
- + Mechanical energy
- + Engulfment.

EQUIPMENT ISOLATION

The placing of isolations on plant and equipment where the sequence of placement or de-isolation does not negatively affect people, plant or process. Each isolation must be documented on the permit.





EQUIPMENT LOCK/TAG

This is for the protection of the plant/equipment. The equipment lock is placed by the permit issuer or their designate and must be recorded on the permit. The permit receiver may be nominated to define isolation requirements—at the discretion of the permit issuer. However, if this is the case, the permit issuer or their designate must oversee the placement of the equipment lock/tag and verify the isolation is effective.

An equipment lock is placed at every isolation point. The lock should not be used without having an equipment tag with it. Where it is not possible to place an equipment lock, an equipment tag is placed and the tag number, instead of the lock number, recorded on the permit.

The keys for the equipment locks are either placed in an envelope and stapled to the copy of the permit that remains at the PTW station or placed in a lockbox and the lockbox key stapled to the copy of the permit that remains at the PTW station. The equipment locks are under the control of the permit issuer.



RECEIVER LOCK/TAG

The receiver lock/tag is for the protection of the permit receiver and permit users. A receiver lock or tag should be put on every isolation point, unless a lockbox is used. If a lockbox is used, the permit receiver places one receiver lock/tag on the lockbox that covers the lockable isolations. The permit receiver is responsible for verifying the isolations for the permit users. Each receiver lock must be accompanied by a receiver tag.

The lock and tag stay on for the duration of the permit. The keys for the receiver's lock(s) are placed in an envelope and stapled to the copy of the permit that is displayed at the worksite.

When the permit is suspended, both copies of the permit and both the equipment lock and receiver lock keys remain at the PTW station in the suspended slots. The equipment can only be de-isolated if both the receiver and issuer agree that it is safe. The receiver's Lock/Tag numbers don't need to be recorded on the permit.



PERSONAL LOCK/TAG

Personal locks/tags are optional for other users working under the permit. The personal lock/tag is removed prior to the permit being suspended or closed. The user can re-fit their personal lock/tag when the permit is revalidated. The permit receiver is responsible for ensuring that all users remove their Personal locks/tags prior to the permit being suspended or closed. Personal locks and tags may also be placed on the lock box, however, the lock/tag must be removed prior to leaving the work area at the end of the day/shift.



LOCK BOX

Optional, but recommended for use for isolations requiring numerous locks. When in use, all isolations are recorded on the permit, equipment locks and tags are fitted to the field isolation points and their keys are then placed in the lock box. The box is then secured with an equipment lock and equipment tag – this is also recorded on the permit. The permit receiver's lock and tag (plus any other personal locks and tags, as desired) are placed on the lockbox, for the duration of the permit.



HARDWARE REQUIREMENTS

Numbered locks	These must have individual keys
Equipment tags	Mandatory. Must capture permit number, date of placement, and job description
Receiver tags	Mandatory. Must capture receiver name and date.
Personal tags	Optional. Must capture name. Company name and contract number can be recorded on reverse
Multi hasps	To fit multiple locks to isolation points or lock box. Must be fitted to every isolation point before fitting locks mandatory for a lock box
Chains or wires	To lock out manual valves or circuit breakers



KEY POINT

Other hardware not listed here may also be required to effect isolations, according to the specific task/plant.



Example of lock-out hasps



Example of lock-out hasps



RESPONSIBILITIES:

PERMIT ISSUER

- + In all cases, the permit issuer has ultimate responsibility for ensuring the completeness and accuracy of the isolation. They are able to nominate a competent person as their designate to carry out the activity on their behalf, however this does not remove the permit issuer's ultimate responsibility
- + The issuer puts equipment locks/tags in place, which protect the equipment
- + If the Issuer has to leave site while the work is still going on, they hand over their responsibility to another permit issuer at the permit-to-work station. The new issuer has to revalidate the permit at this time.

DESIGNATE

- + Acts on behalf of the permit issuer in defining and/or placing equipment or systems isolations. The permit receiver may also be the designate to effect isolations. However, if this is the case, the permit issuer must oversee the placement of the equipment lock/tag
- + A designate cannot issue, revalidate or close permits.



PERMIT RECEIVER

- + Responsible for verifying the isolation is effective and places personal lock/ tag either at agreed isolation point or on lock box if used
- + The receiver's personal lock/tag protects them and their team members
- + When the receiver leaves site, they must remove their personal locks and tags. (The equipment locks are still in place)
- + A new receiver arriving (e.g. next shift) revalidates the permit and puts on their own personal locks and tags.



GENERAL RULES

- + The permit-to-work system is the minimum to be followed at all times. Extra precautions and legislative requirements may require further procedures and controls for some tasks
- + Only people deemed competent can install or remove isolations
- + The permit receiver fills out the majority of the paperwork
- + If isolation is able to be fitted with a lock, a lock complete with tag should be used
- + If isolation cannot be locked (i.e. airline removed), it will not have a key to put in a lockbox. This isolation will require an equipment tag to be placed in the field and a receiver's tag to be fitted at that isolation point for the duration of the job
- + Only the receiver in control of the Permit can remove the receiver lock/tag
- + Nobody, other than the person named on the personal tag, can remove a personal tag/lock
- + The permit receiver may also be the designate to effect isolations. However, if this is the case, the permit issuer must oversee the placement of the equipment lock/tag
- + If there is a risk of exposure to live electrical terminals in doing the isolation, it should be done by a registered electrician
- + Every time a permit is revalidated, both the issuer and the receiver should check the integrity of the isolations

- + For every permit, the isolations must stand alone. It is “possible” to have a common lockbox between permits but all the isolation lock numbers must be recorded on each permit and appropriate equipment and personal locks and tags fitted i.e. a second equipment lock and tag and another personal lock and tag fitted on the lockbox. The scope for each permit must be very specific

- + If more equipment isolations are required than space allows on the work permit, the system isolation certificate can be used to record extra isolations but the step number column must be struck through.





ISOLATION PROCEDURE

PERMIT APPLICATION

- 1 The permit receiver and the permit issuer complete a hazard analysis and isolation requirement evaluation. This involves:
 - Identifying all sources of harm
 - Visiting the work area
 - Checking the drawings
 - Identifying any processes affected by isolations – discuss with area supervisor or operator.
- 2 Permit issuer identifies the type of isolation required – either an equipment isolation or a system isolation
 - For a system isolation, a systems isolation certificate must be completed.
- 3 Permit issuer determines responsibility for a designate
 - The permit issuer may nominate a designate to act on their behalf in defining and/or placing isolations
 - The permit receiver may be nominated as designate for the purposes of defining isolation requirements – at the discretion of the permit issuer. However, if this is the case, the permit Issuer must oversee the placement of the equipment lock/tag and verify the isolation is effective.



ISOLATION

- 1 Ensure all hazards are isolated
 - Purge/flush/drain all lines
 - Remove electrical supplies
 - De-pressurise/vent any systems (pneumatics etc.)
 - Isolate any mechanical/stored energy (e.g. springs / weights).
- 2 Permit issuer or designate to fit equipment isolation clasp/locks/tags at all isolation points
 - Record all lock numbers on permit
 - Record permit number on all isolation tags
 - Where unable to fit lock, fit equipment tag only and record the tag number on the permit.
- 3 Permit receiver fits receiver lock and/or tag to all isolation points (or to lock box if used). The receiver's lock and tag numbers are not recorded. The receiver places the lock keys in an envelope and staples this to the copy of the permit displayed at the worksite
 - The receiver locks/tags remain in place for the entire duration of the permit, even when suspended
 - Only the permit receiver validated on the permit has control of the receiver tags/locks/keys.
- 4 Permit issuer (or designate) and permit receiver to prove isolation is effective.



PERMIT ISSUE AND COMMENCEMENT OF WORK

Any other person commencing work (under the scope of the initial work permit) may also fit their personal lock/tag to the isolation point if they feel it appropriate.

- + The permit receiver may instruct any other person commencing work under the scope of the original permit, to also fit his or her own personal lock/tag to the isolation point
- + Any other worker, who fits their own personal lock/tag under the scope of the original permit, must remove their lock/tag prior to leaving the work site at the end of their shift.

COMPLETION OF WORK

Permit receiver and permit issuer (or designate) must inspect the worksite for safe completion prior to de-isolation.

DE-ISOLATION

- 1 Permit issuer (or designate) and permit receiver check job site to ensure area and plant/equipment is safe to restart. Also check for any other active permits in area or on plant/equipment
- 2 Permit issuer or designate and permit receiver remove all locks/tags
 - Record or cross check lock/tag numbers on permit document
 - Following any specific de-isolation procedures where required
 - If using a systems isolation, a step sequence for de-isolation may need to be developed and followed.
- 3 Sign off de-isolation on permit form
- 4 Permit ready for closure.



FAILURE TO REMOVE LOCK

When a personal lock has been left on an isolation and the owner is not present to remove it, the lock may only be removed after all of the following:

- + Every endeavour is made to locate the person and have them return to site
- + If this is not possible then the Site Manager (or their delegate), after ascertaining that no risk to people, plant, or process exists, shall authorise in writing the removal of that lock.



GENERAL PROCEDURES

It is recognised that, under some operational situations, carrying out minor testing/cleaning/fault finding/adjusting is required.

To enable this to occur safely, and before the testing/cleaning/fault finding/ minor adjustments are started, the permit issuer for the area concerned must be consulted and the permit assessment and hazard identification process completed. All controls for hazards must be put in place.

The permit issuer has the sole discretion to decide if the work can be done under the procedures “Isolations for testing/cleaning/fault finding/adjusting” or if a full Permit must be completed.



PROCEDURE

This procedure can only be applied for a single point isolation

- + Single point Isolation allows the person doing the work (receiver) to access equipment and allows for starting and stopping of live equipment, accessing equipment to carry out cleaning, fault finding or making minor adjustments providing adequate/safe single point isolations occur before the task is started
- + This can be done under a verbal permit where the PAS is 4 or less
- + For a “single point” of isolation associated with testing/cleaning/fault finding/adjusting, a receiver tag/lock must be used. It should be fitted and removed by the person doing the work, named on that tag
- + In this situation the receiver lock/tag allows the person named on the tag, to control the isolation. Receiver lock and tag cannot be left on when the owner is not on site
- + If it is ascertained by the fault finding that the equipment is in need of repair or major adjustment/repair, then a permit with the appropriate scope will be written and full equipment isolation will be performed with equipment and receiver locks and tags (and personal lock and tags, if desired).



CARRYING OUT WORK ON LIVE OR OPERATIONAL EQUIPMENT

When carrying out “live testing” or “machine jogging” under this procedure, all practical steps and controls must be considered and be in place to allow the task to be done safely. A permit is required for all work on live or operational equipment with a PAS of 5 or greater.

- 1 Maintenance personnel will at all times work in a manner that controls the risk of injury to themselves or others, and controls the risk of damage to plant

- 2 Where it is deemed that a maintenance person is required to work on an operating machine or process with a guard open or removed or work within a locked off area:
 - Then, a ‘safety watch’/operator remains with the maintenance person during the whole course of the work
 - The ‘safety watch’/operator must monitor the maintenance person continually, and be in a position to safely intervene appropriately in the event of a problem occurring
 - Full and completed hazard ID present at work site
 - Emergency procedures i.e. E-stops, rescue plan, isolation points.

- 3 The ‘safety watch’/operator shares equal responsibility for the safe completion of the required task with the maintenance person undertaking it



- 4 As appropriate, all other personnel in the area and those that are immediately responsible for the area are to be made aware of the work proceeding, whether verbally, through the use of signs, or other notification.

No other work or work permits can be issued and work started on any equipment that is subject to “testing, cleaning, fault finding or adjusting” covered under this procedure. (‘Conflict of work’).





ISOLATIONS & SOP FOR OPERATIONAL ACTIVITIES

- + A personal lock and tag must be used to effect an isolation for an SOP task. The SOP must be part of an approved procedures/training manual for that area/department
- + Only people trained and assessed as competent against the SOP can do the isolations associated with that SOP. All hazards and isolations are to be documented in the SOP
- + The person doing the task would fit their personal tag/lock to the isolation point, carry out the SOP task and then remove the personal tag/lock.

ENVIRONMENT

The Environment is defined as:

- 1 Eco-systems and their constituent parts such as waterways, soil, air, groundwater, flora, fauna, whether already modified by humans or in an existing natural state
- 2 The immediate surroundings and their constituent parts such as people, equipment, buildings, services, lighting, space, ventilation, etc.



GENERAL

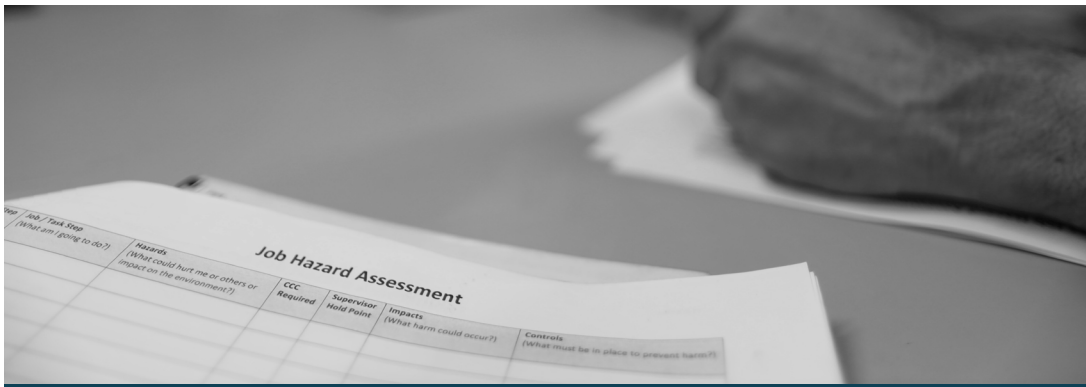
A number of activities undertaken by workers and contractors contain a substantial element of risk of pollution of the environment. Activities can have hazards (also known as Environmental Aspects) that can have an impact not only on personal safety, but also the safety of the environment.

Examples of environmental hazards may include:

- + Noise
- + Soil Contamination
- + Solid Waste
- + Spill to Site Drainage
- + Spill to Storm water
- + Odour/Emissions
- + Eco-toxic.

It is also be generally relevant to other hazard types such as vibration, illumination (nuisance to neighbours), and the remainder of the hazard types grouped under the headings of Chemical, and Fire & Explosives.

Should there be identified risks to the environment as part of the permit hazard identification process, the appropriate controls would need to be included on the permit document following the hierarchy of control.



PERMIT-TO-WORK AND ASSESSING RISK

What you need to know:

- + How to explain the permit process in relation to risk
- + How to describe 2 different permit assessment score methods
- + About the practical application of permit assessment scores



PERMIT APPLICATIONS

The permit receiver is to notify the permit issuer prior to intended work start time. The permit issuer has the express right to refuse to issue a permit if they feel that circumstances, including current permit workload, may compromise the safety of plant, process, people or environment.

TASK ANALYSIS

The permit receiver shall complete the hazard identification and job task analysis portion of the permit-to-work for the work activity before a permit can be issued. The permit issuer should identify any plant hazards that may impact on the work to be carried out.

AUTHORISATION

- + The permit issuer will authorise the work permit and the permit receiver will countersign this
- + The services manager (or their delegate) will authorise excavation certificates and the Fire Systems Impairment Certificate
- + The safety observer will authorise any confined space entry certificates
- + The permit receiver will countersign all certificates
- + No hot work permits can be authorised while the fire system is isolated
- + All hot work with a score of 16 or greater must be signed off by the plant/process manager or designate.



PERMIT ISSUE

- + The work permit number will be entered on the certificates and the certificate number will be entered on the permit
- + A copy of the certificates will be appended to each copy of the permit.

SUSPENSION

The permit is regarded as being suspended in the following situations:

- + At the end of the working day, if the job is not complete
- + Any emergency alarm/situation including trial evacuations
- + At the discretion of the permit issuer or receiver.

REVALIDATION

- + At completion of the working day, the permit will be suspended until recommencement of the work. Prior to recommencing work, the permit must be revalidated
- + Revalidation requires that both the permit issuer and permit receiver write their name in the Permit Authorisation and Revalidation section of the permit. The issuer and receiver should ensure that conditions have not changed since the permit was suspended and that no new hazards have been introduced. This is particularly important if the permit has been suspended for a period of time
- + The permit must be revalidated upon the change of the permit issuer or permit receiver and signed by both the outgoing and incoming issuers and receivers. The incoming issuers and receivers need to be briefed as to the status of the job etc.



CANCELLATION

A permit issuer may at any time, at their discretion cancel a permit. A cancelled permit cannot be revalidated and the work cannot continue. A cancellation of a permit can occur due to unsafe work practices or a change of factors that increases the risk of the task.

CLOSURE

The permit will be closed off by the permit issuer when they are satisfied the following has occurred:

- 1 The job task has been completed
- 2 Housekeeping completed
- 3 All isolations removed – the permit cannot be closed until all equipment/ receiver locks and tags relating to that permit have been removed. (An isolation may still be in place – but must relate to another permit)
- 4 All notifications have been made to potentially affected parties.

A thorough check of the work site and the surrounding areas has been made to check for fire or other latent hazards.



TRAINING AND COMPETENCY

Training and competency in a high risk work activity or high risk situation is beneficial for both the worker and the organisation. The worker and the PCBU must work together to identify and manage risk during workplace activities.

Workers need to continually evaluate, maintain and develop their competence (skills, knowledge, and experience). Failure to keep up to date and develop their competence could result in a range of negative legal, financial, and moral impacts on the PCBU and the worker.

MONITORING

Monitoring involves planned activities designed to get and regularly update information about hazards, risk controls, and the people who could be affected by the hazards.

It involves the day to day, job to job, how do you know if you and your team is safe and healthy? How can you be confident they will get home safe and well to their loved ones?

Measuring health and safety performance involves two types of monitoring:



Proactive Monitoring - is key to the success of risk management process. Proactive monitoring is checking on the actions taken to create health and safety, and involves monitoring hazards and risk factors, and monitoring and maintaining risk controls e.g. checking the quality of risk assessments, doing pre-job briefings, doing equipment checks, workplace inspections, applying safe systems of work etc.



Reactive Monitoring is recording outcomes of the work - e.g. injuries, near misses, delays, damage, work quality, housekeeping etc.



AUDITING

Auditing is the tool that is used to measure the entire health and safety management system to see how well it is performing at a particular point in time. Auditing forms quite a critical part in the permit-to-work system.

Audits examine documentation such as permits to work, incident reports, minutes of meetings, the hazard register and policies. Audits then look at the workplace and interview workers and managers to see how well the management system is working at a practical level.

THREE STAGES OF AUDITING PERMIT-TO-WORK SYSTEMS

- + **Daily audits:** While a permit is active or open it will be audited daily by the permit issuer.
- + **Weekly audits:** The permit-to-work manager will audit a sample of permits that have been issued during the prior week.
- + **Annual or Bi-annually:** The frequency of this audit depends on the organisations policy, incidents that have occurred or issues that have been identified. From the annual/bi-annual report corrective actions identified must be implemented in a reasonably practicable time period to ensure continuous improvement.



KEY POINT

It is best practice to review your Permit-to-Work system including forms every year to ensure they are fit for purpose.



PERMIT ASSESSMENT SCORE

In previous courses you may have covered risk assessment. Let's just refresh your memory. The following is an example of how the risk assessment matrix is used to obtain a permit assessment score.

Each work activity, for which a permit is required, will have a permit assessment score (PAS) allocated. The score identifies the degree of risk involved in the job or task. The PAS is the result of considering the joint effect of likelihood and consequence(s) if/when a work may be exposed to a hazard. That is, you must consider the chance of harm occurring from a hazard, and the possible consequences which could result.

The benefits of a risk score are:






- + Enables us to plan or prioritise preventative measures needed to control the hazard
- + Meet obligations under the Health and Safety at Work Act 2015
- + In the case of multiple activities, the permit assessment score will incorporate the highest scoring task consequence.

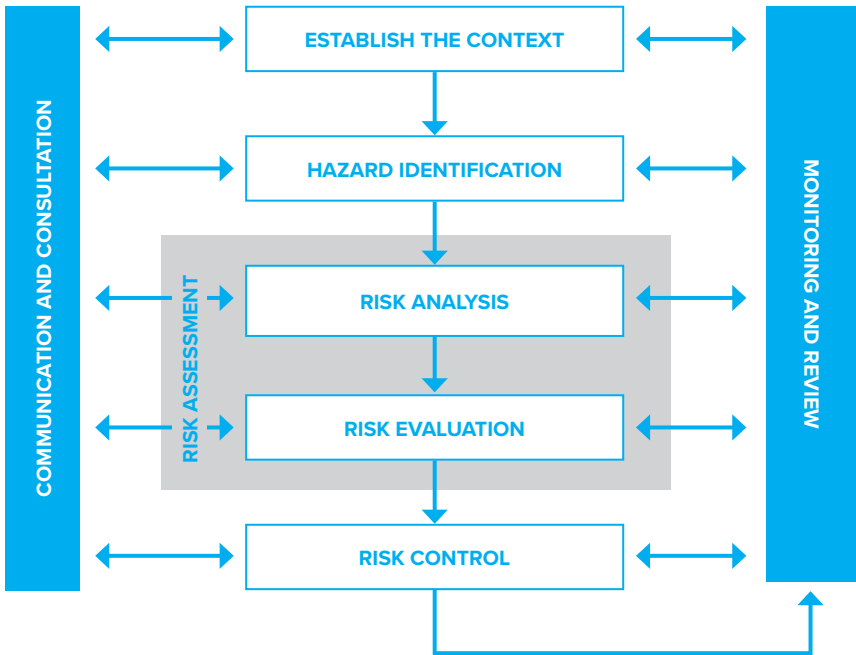


RISK MANAGEMENT PROCESS

Risk management is just a way of thinking carefully about something so that we have the best chance at success. Risk assessments can be done in many different ways but the main aim of risk management is to try to understand what we know and don't know about a situation, and work out what resources are needed to get the job done well.

The risk management process has **five key stages** and **on-going activities** that support risk assessment.

- 1**  **Establish the context:** What is happening, who is involved, when is it happening, where, why and how is it being done?
- 2**  **Identify the hazards:** What are the situations or things that have the potential for harm?
- 3**  **Analyse the risk:** What is most likely to cause the most harm? What are the most important things to prioritise for attention?
- 4**  **Evaluate the risk:** Is the current state OK or can/should we do more to control the risk?
- 5**  **Control the risk:** What is needed to control the risk, and recover without serious consequences if something goes wrong?



THERE ARE ALSO TWO ON-GOING ACTIVITIES THAT SUPPORT RISK ASSESSMENT:

- + Communicating and consulting:** This is important because workers know best about how work is done and without their input the risk assessment probably won't be useful and practical. People involved in the work and exposed to the risk also need to be kept in the loop with decisions about changes to their work and the resources they have available.
- + Monitoring and reviewing:** How, what, when and where are we going to monitor to make sure we keep on top of changes and maintain the risk controls so they stay effective? How, when and who will review the risk assessment to make sure it is still accurate, relevant, and up-to-date?



THE RISK MATRIX—A RISK ANALYSIS TOOL

A risk assessment matrix is one way of analysing the level of risk so different risks can be compared and prioritised. This is IMPAC’s version.

		LIKELIHOOD				
		1 Highly Unlikely	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
CONSEQUENCE SEVERITY	5 Major	5	10	15	20	25
	4 Significant	4	8	12	16	20
	3 Moderate	3	6	9	12	15
	2 Minor	2	4	6	8	10
	1 Insignificant	1	2	3	4	5



KEY POINT

In IMPAC’s view consequences cannot be reduced in the same circumstances/risk via controls other than elimination (or substitution).

Changing the circumstance/situation might change the subsequent consequences but not in a like for like situation.



LIKELIHOOD TABLE

LEVEL	DESCRIPTION
Highly Unlikely	May occur only in exceptional circumstances, chances less than 0.1% per year
Unlikely	May occur in the industry, local chances more than 0.1% but less than 1% per year
Possible	Has occurred in the industry, local chances more than 1% but less than 10% per year
Likely	Has occurred locally, chances more than 10% but less than 50% per year
Almost Certain	Known issue, is expected to occur more than 50% of the time

WORKER HEALTH AND SAFETY CONSEQUENCE SEVERITY TABLE

LEVEL	DESCRIPTION
Insignificant	Discomfort or first aid treatment
Minor	Medical treatment
Moderate	Restricted work or lost time
Significant	Debilitating, loss of quality of life
Major	Fatality or multiple fatalities



RISK EVALUATION

This means making a judgement about whether the level of risk is OK or not OK, why, and what must happen next. The risk analysis helps us to make this judgement, and also to prioritise risks for action.

LEVEL OF RISK	WHAT IT MEANS
E (Extreme risk)	Stop activity or process immediately, and don't continue until the risk has been reduced.
H (High risk)	Manage risk immediately.
M (Medium risk)	Action required but not immediate.
L (Low risk)	Manage through continuous improvement.

APPLICATION OF THE PERMIT ASSESSMENT SCORE

In some companies the area/process manager (or their nominated representative) co-authorise all with a PAS of **H** or **E**. Some organisations have a scoring assessment protocol for their risk matrices. In these cases, the likelihood and consequence levels are assigned a number. And the PAS score is achieved by:

$$\text{Likelihood number} \times \text{Consequence number} = \text{PAS}$$






AREA ASSESSMENT

Regardless of whether you use numbers or words to describe the risk score, it is important to consider the location/activity; it may have intrinsic risk which must be considered when determining the PAS. Use the tables below as an example of risk descriptions for areas, and review your environment against them.

LIKELIHOOD SCORE

AREA		SCORE
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #c00000; margin-right: 10px;"></div> <div> <p>AREA 5: Extreme Hazard</p> </div> </div>	<ul style="list-style-type: none"> + Electrical Zone 0 hazardous areas + Gas compound + High fire risk areas + HSNO Class 3.1a flammable liquid, Class 5 and Class 2.1 gas storage & filling facilities 	<p>5</p>
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #c00000; margin-right: 10px;"></div> <div style="width: 20px; height: 20px; background-color: #ff8c00; margin-right: 10px;"></div> <div> <p>AREA 4: High hazard</p> </div> </div>	<ul style="list-style-type: none"> + Electrical Zone 1 hazardous areas + High voltage compound + Chemical storage areas + Confined spaces and restricted spaces + Dry (dust) areas + Extreme temperatures + Any area where the fire suppression systems have been isolated + Any area where fire detection systems, in the absence of fire suppression systems, have been isolated 	<p>4</p>
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #ff8c00; margin-right: 10px;"></div> <div style="width: 20px; height: 20px; background-color: #ffd700; margin-right: 10px;"></div> <div> <p>AREA 3: Moderate Hazard</p> </div> </div>	<ul style="list-style-type: none"> + Electrical Zone 2 Hazardous areas + Operational Plant – (low fire risk) 	<p>3</p>



	AREA 2: Medium Hazard	+ Administration Areas + All operational plant areas during a major shut-down period, at the discretion of the Dept./Area Manager	2
			
	AREA 1: Low Hazard	+ Road ways, lawn area, gardens, boundary fence	1

IEC CLASSIFICATION OF ELECTRICAL ZONES

- + Zone 0:** An explosive gas atmosphere is present continuously or is expected to be present for long periods of time'
- + Zone 1:** An explosive atmosphere is likely to occur in normal operation'
- + Zone 2:** An explosive atmosphere is not likely to occur in normal operation and, if it does occur, it will exist for only a short time.



Colour code your site and plant area maps. This can be a great document to include in advice to the Emergency Services; it helps when/if there is an emergency response required on your site.





CONSEQUENCE SCORE

Multiplied by:

TASK POTENTIAL CONSEQUENCE		SCORE
	Disaster <ul style="list-style-type: none"> + Multiple fatalities + Plant or major product loss + Major environment impact 	5
 	Very serious <ul style="list-style-type: none"> + Major plant damage + Major fire/explosion + Single fatality + Major environmental impact 	4
	Serious <ul style="list-style-type: none"> + Major equipment damage + Serious injury / Lost time injuries + Environmental impact 	3
 	Important <ul style="list-style-type: none"> + Reduced production + Equipment damage + Medical treatment + Environmental incident 	2
	Noticeable <ul style="list-style-type: none"> + Minor equipment damage + First aid + Minor environmental incident 	1



CATEGORIES OF WORK SITE SUPERVISION

Depending on the nature of the work, its location and hazard potential, the requirement for the frequency and duration of presence at the work site, of the permit receiver will differ. Using the chart below, the permit issuer is to allocate a PAS on the permit form with which the permit receiver must comply.

VALUE	REQUIRED ACTION / CONTROLS	'RECEIVER' SUPERVISION LEVELS	ISSUER LEVELS
E	Plant manager to sign, consider alternatives, permit issuer to sign	Continuous attendance of the permit receiver	Issuer must be on-site & contactable
H	Consider alternatives, permit issuer to sign	Permit issuer discretion. Work may continue during short absences of the permit receiver, at the issuer's discretion	
M	Permit issuer to sign		
L	Verbal permit at permit issuer's discretion	Permit receiver is to set the initial worksite and conditions, and is then required to make periodic appearances to the work site, at the issuer's discretion. The permit receiver can be responsible for more than one task simultaneously	Issuer does not need to be on-site but must be contactable



TASK CONSEQUENCE SCORE

WORK EXAMPLES - HOT WORK	SCORE
Welding - arc, spot, mig and plasma cutting	5
Tig welding	
+ Area 3 or greater	5
+ All other areas	4
Grinding, abrasive disc cutting	
+ Area 3 or greater	5
+ All other areas	4
Working involving naked flames	5
Opening explosion proof (Ex d) junction boxes	4
Electrically and battery powered hand-tools; (e.g. drills, saws, sanders, heat shrink blowers, soldering irons)	
+ In area 4 or greater	4
+ All other areas (not hot work)	2
Internal combustion engines; generators, mowers, cranes, compressors, petrol powered pulse fogging	
+ In area 4 or greater	4
+ All other areas (not hot work)	2
Use of air or hydraulic powered metal cutting, chipping, needle guns and wire buffs.	
+ In area 4 or greater	4
+ All other areas (not hot work)	2



WORK EXAMPLES - HOT WORK

SCORE

Sand (grit) blasting

- + In area 4 or greater 4
- + All other areas (not hot work) 2

Use of non-intrinsically safe electrical equipment (including, meters, test instruments, etc)

- + In area 5 4
- + All other areas (not hot work) 2

Manual de-scaling (hammer & chisel)

- + In area 4 or greater 4
- + All other areas (not hot work) 2





WORK EXAMPLES - COLD WORK	SCORE
>5000 psi water blasting/cutting	5
Construction, overhaul or repair work involving breaking into the containment of systems/equipment containing hazardous fluids (i.e. non-purged equipment)	5
Using HF (hydrofluoric) acid (pickling paste)	5
Mobile crane	5
All excavations	5
Commissioning of new plant on product	5
Work that directly affects the operation of safety and/or emergency systems including generators and switchboards etc.	4
Where there is a risk of fall and injury	4
Use of certified personnel work baskets/cages	4
Handling of hazardous substances, such as radioactive sources, toxic chemicals, paints, resins (e.g. sureshield), pesticides, asbestos and man-made mineral fibres (MMMMF) (e.g. fibreglass) including their disposal and removal from site	4



WORK EXAMPLES - ABSEILING	SCORE
Work involved abseiling	4
Erection or dismantling of any scaffolding	4
Earthworks where risk of run-off to stormwater	4
Rigging operations	4
Spray applications e.g. spray painting	4
Live testing/adjustments	4
High voltage switching	4
Pressure testing of plant and equipment	3
Electricity and battery powered hand-tools (drills, saws, sanders, heat shrink blowers etc.) In area 3 or lower	2
Non-routine sampling	2
Internal combustion engines; generators, mowers, cranes, compressors, petrol powered pulse fogging in area 3 or lower	2
Non-destructive testing/examination (excl. radiography) using IS equipment, e.g. vibration monitoring, ultrasonic thickness checking	1
All bob-operational visual inspections require a verbal permit	1



ACTIVITY



Using the descriptions on the next 2 pages, allocate a permit assessment score (PAS) to each activity.

SCENARIO ONE

A bracket is to be welded onto the side of a sump located in the chemical storage compound at the plant (Note area designated high fire risk).

Plant area score:

Permit signed by:

Task potential score:

Permit type:

Permit assessment score:

Category of worksite presence:

SCENARIO TWO

A 5.2m scaffold is to be erected on outside of the storage tanks to assist in re-cladding the building.

Plant area score:

Permit signed by:

Task potential score:

Permit type:

Permit assessment score:

Category of worksite presence:



SCENARIO THREE

Some photographs and a video are to be shot in the preparation area.

Plant area score:

Permit signed by:

Task potential score:

Permit type:

Permit assessment score:

Category of worksite presence:

SCENARIO FOUR

An electrician has been asked to check wiring in the ceiling of the administration block. This will involve fault finding and then repair. It is expected that a grinder will be used to remove dyna bolts in the area.

Plant area score:

Permit signed by:

Task potential score:

Permit type:

Permit assessment score:

Category of worksite presence:

SCENARIO FIVE

Replace impeller in a chemical pump which is pumping Copper Chrome Arsenate (CCA).

Plant area score:

Permit signed by:

Task potential score:

Permit type:

Permit assessment score:

Category of worksite presence:



SUMMARY OF LEARNING

IDENTIFY SCOPE OF WORK

Does everyone understand the size and nature of the job? This includes:

- + You
- + The person performing the work
- + The person in charge of the work site

IDENTIFY ALL HAZARDS

Be systematic. The two key methods of identifying hazards relating to the work environment and work activity are:

- + Task analysis
- + Work site inspection

Then plan how you're going to:

- + Eliminate the hazards
- + Minimise the hazards
- + This is fundamental to all PTW systems

IS ALL EQUIPMENT SAFE TO USE?

The two key methods of ensuring this are:

- + Pre-start equipment/site inspections
- + Communication with the permit receiver (or designate) about requirements for monitoring and testing
- + Check that all testing equipment is calibrated, certified, fit-for-purpose

ISSUE PERMIT

The permit receiver will complete as many details on the permit ahead of the time; that is prior to the job starting!

Before signing the permit, the permit issuer will ensure that:

- + The hazards have been identified and controlled
- + Production processes around the area are not conflicting or adding hazards to the permitted work.
- + This means a physical inspection of the site!



MONITOR PERMIT

The permit issuer is responsible for ensuring on a regular basis, that the permit conditions are being applied.

The factors that will affect the frequency of monitoring include:

- + Risk factors associated with the task
- + Where the job is being undertaken
- + Permit assessment score

You can monitor the work directly by yourself or with the assistance of a designate.

- + The people doing the job > the conditions
- + The work activity
- + Compliance with the permit

CLOSE PERMIT

This means being satisfied that the scope of the work as defined in the permit has been completed and that all conditions and precautions have been actioned.

Communication with the permit receiver (or designate) is vital



APPENDICES



APPENDIX 1: GUIDE ON TRAINING REQUIREMENTS

TYPE	NZQA UNIT STANDARDS
Permit Issuer	17590 (Recommended pre-requisite 30265)
Permit Receiver	17588 (Recommended pre-requisite 30265)
Working at Heights	17600, 25045, 15757, 23229
Confined Space	18426, 17599, 25510 (Some sites may require 3058)
Scissor Lift	23966, 23960
Knuckle Boom	23966, 23962
Trailer Mounted MEWP	23966, 23963
Truck Mounted MEWP	23966, 23961
Vertical Mast Lift	23966, 23964
Fire Extinguisher	3271 (Some sites may require 4647)

APPENDIX 2: JOB SAFETY ANALYSIS TEMPLATE

JOB SAFETY ANALYSIS



JSA DETAILS			
Job Description	Facility	Division	
Date	JSA Number	Permit Number	Location

RISK SCORING

CONSEQUENCE SEVERITY	LIKELIHOOD				
	1 Highly Unlikely	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
5 Major	5	10	15	20	25
4 Significant	4	8	12	16	20
3 Moderate	3	6	9	12	15
2 Minor	2	4	6	8	10
1 Insignificant	1	2	3	4	5

Likelihood Table		Consequence Table	
Level	Description	Level	Description
Highly Unlikely	May occur only in exceptional circumstances, chances less than 0.1% per year	Major	Fatality or multiple fatalities
Unlikely	May occur in the industry, local chances more than 0.1% but less than 1% per year	Significant	Debilitating, loss of quality of life
Possible	Has occurred in the industry, local chances more than 1% but less than 10% per year	Moderate	Restricted work or lost time
Likely	Has occurred locally, chances more than 10% but less than 50% per year	Minor	Medical treatment
Almost Certain	Known issue, is expected to occur more than 50% of the time	Insignificant	Discomfort or first aid treatment

JSA SIGN OFF

Where residual risk score cannot be reduced to low, the escalations listed below must be enacted.

Escalated by (Name)	Signature
L (LOW RISK) Proceed with agreed controls in place	E (EXTREME RISK) Escalation to EMT Representative / STOP WORK (As per your company policies)
M (MEDIUM RISK) Escalation to Site Supervisor	H (HIGH RISK) Escalation to Area/Department Manager
Site Supervisor Date	Department Manager Date
EMT Member Consulted Date	



JOB SAFETY ANALYSIS

JOB STEP	POTENTIAL RISK	INITIAL RISK			REQUIRED RISK CONTROLS	RESIDUAL RISK						
		Step No.	List the potential risks for the job step.	Likelihood		Severity	Risk Score	Likelihood	Severity	Risk Score		
List job steps in the sequence they are carried out.					List the controls required to eliminate or minimise the risk.							



JOB SAFETY ANALYSIS

JOB STEP	POTENTIAL RISK	INITIAL RISK			REQUIRED RISK CONTROLS	RESIDUAL RISK		
		Likelihood	Severity	Risk Score		Likelihood	Severity	Risk Score
Step No. List job steps in the sequence they are carried out.	List the potential risks for the job step.				List the controls required to eliminate or minimise the risk.			

JOB SAFETY ANALYSIS



JSA SIGN OFF AND ACCEPTANCE

We confirm that we understand this JSA and recognise that its purpose is to control the risks that are present for this task.

Full Name	Role (if applicable)	Signature	Date

APPENDIX 3: PERMIT-TO-WORK DOCUMENT

PERMIT TO WORK (PTW)



Date	Job Location:			
Work/Task/ Project Description:				
Permit Number			JSA Number	
PTW Receiver (Name)	Company	Mobile No	Signed	
PTW Issuer (Name)	Mobile No	Signed	Close Out	
Area/Department Supervisor sign on (must be reviewed by Area Supervisor prior to work starting)			Mobile No	

CONTROLS/PERMITS REQUIRED

(Select controls/permits required) Yes No

Confined Space Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Excavation/Penetration/Demolition Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Hot Work Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Isolation Certificate	Certificate Number:	<input type="checkbox"/>	<input type="checkbox"/>
Lifting Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Working at Heights Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Other Permit	Permit Number:	<input type="checkbox"/>	<input type="checkbox"/>
Notifiable Work (WorkSafe)		<input type="checkbox"/>	<input type="checkbox"/>
Toolbox meeting		<input type="checkbox"/>	<input type="checkbox"/>
Other:			

PERMITS OVER 1 DAY (MAX 5 DAYS) (Review with PTW Issuer at start & end of each day)

Date:	/ /	/ /	/ /	/ /	/ /
Receiver:	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]
Issuer:	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]	[SIGN HERE]

DAILY CLOSE OUT

Ensure all newly identified hazards and/or changes are communicated to the entire team



HAZARD CHECKLIST
(If Hazard identified ensure controls/corrective actions are put in place in the Job Safety Analysis)

HEALTH		SAFETY		ENVIRONMENT	
Are cold or hot materials present?	Y / N	Does the worksite need to be isolated from people?	Y / N	Is it a potentially dangerous space?	Y / N
Are there overhead and lifting hazards?	Y / N	Are there any unskilled or non-inducted personnel?	Y / N	Are there any atmosphere hazards (fumes etc.)?	Y / N
Are you working alone?	Y / N	Are evacuation routes understood?	Y / N	Is dust a hazard?	Y / N
Will lighting be a hazard (too little, glare)?	Y / N	Are there machinery or equipment hazards?	Y / N	Is there potential for visibility hazards?	Y / N
Are you using any chemicals (solvents, cleaners)?	Y / N	Is electrical isolation required?	Y / N	Are there any stability and access hazards?	Y / N
Will dust, fumes, or gases be present? (asbestos?)	Y / N	Are there any high-pressure hazards (air, oil, steam)?	Y / N	Is additional oil spill equipment required?	Y / N
Is noise a hazard?	Y / N	Are there any mechanical pinch points?	Y / N	Are hazardous substances used requiring control?	Y / N
Is task being performed in extreme temperatures?	Y / N	Any sharp / cutting edges?	Y / N	Is other work in vicinity creating a hazard to this job?	Y / N
Is stress and fatigue a potential hazard?	Y / N	Could you encounter unstable conditions?	Y / N	Do restricted areas need to be identified?	Y / N
Are all personnel fit for work?	Y / N	Are you using any flammable products?	Y / N	Will weather conditions create a hazard?	Y / N
Additional Personal Protective Equipment required?	Y / N	Are pedestrians, vehicles, or vessels a hazard?	Y / N	Will there be any by-product or waste?	Y / N

PRINT AND SIGN YOUR NAME IF YOU HAVE READ AND AGREE WITH THE PTW CONTENT

NAME (Please Print)	SIGNED	NAME (Please Print)	SIGNED



Permit Declaration and Authorisation

To be read by the Permit Issuer, the Permit Receiver and, where required, the Permit Manager.
By signing below, I confirm that I understand the Permit requirements; that I, where required to do so, have inspected the worksite; that I have been advised and briefed of the work task and the associated hazards/risks, precautions, control measures and the emergency rescue plan. Furthermore, that I agree to abide by the conditions of issue as defined in the PTW Procedures and other related documents.

Permit Authorisation Checklist

To be completed prior to commencement of work

	Yes	No	N/A
JSA completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional permits completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency plan completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worksite inspected and is safe to start work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isolations (LOTO) applied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stakeholders notified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Observer assigned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All permit users briefed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Permit Closure Checklist

To be completed after the conclusion of the work

	Yes	No	N/A
Additional permits closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worksite inspected and is safe to recommission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isolations (LOTO) removed, and equipment/plant reinstated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stakeholders notified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Observer debriefed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post-exit gas test results recorded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All permit users accounted for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All tools/equipment accounted for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Permit Authorisation

Date	Name	Signature
PERMIT RECEIVER		
/ /		
PERMIT ISSUER		
/ /		

Permit Closure

Date	Name	Signature
PERMIT RECEIVER		
/ /		
PERMIT ISSUER		
/ /		

APPENDIX 4: CONFINED SPACE ENTRY PERMIT

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CONFINED SPACE ENTRY PERMIT

Date		Job Location	
Work/Task/Project Description			
Permit Number		Confined Space Permit Number	
Company		Notifiable Work? (if yes, provide Evidence)	
Permit Receiver Name		Signed	
Permit Issuer Name		Signed	

CONFINED SPACE CHECKLIST

Rescue Plan prepared and understood by all personnel?	Y / N	Stand-By person appointed, and duties understood?		Y / N
First Aid resources available and on standby?	Y / N	Has the mode of communication been established?		Y / N
Barriers erected? (if yes they must be suitable)	Y / N	Isolations (LOTO) established and verified		Y / N
Personnel trained and Competent in Confined Space Entry?	Y / N	Stand-By person equipped with a working cell phone?		Y / N
Warning notices/barricades in position?	Y / N	Are all tools and equipment fit for purpose and are the tools intrinsically safe?		Y / N
All PPE required available for job? e.g., harness etc.	Y / N	Is lighting adequate within Confined Space?		Y / N
Any conflicts of work? e.g., fumes from other job etc.	Y / N	Is there any risk from falling objects?		Y / N
Has the atmosphere been tested for toxic & combustible contaminants, has ambient temperature been monitored?	Y / N	Is self-contained breathing apparatus or supplied air respirator required?		Y / N
Has the area been ventilated and cleaned to remove harmful solids and sludges?	Y / N	Has WorkSafe been notified of particular hazardous work?		Y / N

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Confined Space Entry Permit | v1.4
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SITE SKETCH

ISOLATIONS REQUIRED

(Drawing may be required, establish all isolation points, methods of draining, depressuring and venting)

Isolation Point	Lock/Tag Number	Installed By	Date Installed	Removed By	Date Removed	Confirmation of Permit Issuer



ATMOSPHERE TEST READINGS
(Use separate page if necessary)

Time	Date	Gas Detector Type	Gas Detector serial number	OXYGEN 19.5 - 23.5%	LEL <5% refer sds	CO <25 ppm	H2S <10 ppm	Other Gasses	Testers Name

ENTRY / EXIT LOG
(Use separate page if necessary)

Name	Time In	Time Out	Name	Time In	Time Out

PRINT AND SIGN YOUR NAME IF YOU HAVE READ AND AGREE WITH THE PERMIT CONTENT

Name	Signature	Designation
		Permit Receiver
		Permit Issuer
		Safety Observer
		Entrant 1

APPENDIX 5: HOT WORK PERMIT



HOT WORK PERMIT

Date		Job Location	
Work/Task/Project Description			
Permit Number		Hot Work Permit Number	
Company		Notifiable Work? (If yes, provide Evidence)	
Permit Receiver Name		Signed	
Permit Issuer Name		Signed	

PERMITS OVER 1 DAY (MAX 5 DAYS)
(Review with Supervisor at start of each day)

Date: / / / / / / / / / /

Receiver: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Issuer: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Ensure all newly identified hazards and/or changes are communicated to the entire team

Within 10 meters of work area		Work on walls, floors, ceilings, equipment & enclosed plant (e.g., tanks, containers, ducts, dust collectors)	
Ensure there are no combustible liquids, gases, dusts	Y / N	Concealed or enclosed spaces are inspected for combustible materials or linings and material is removed or protected accordingly	Y / N
Combustibles that cannot be moved are covered with flame proof covers or guards	Y / N	Combustibles materials are moved at least 10m away from walls where heat could be conducted	Y / N
Floors are swept clean to remove combustibles	Y / N	Construction materials are non-combustible	Y / N
Combustible floors are wet down or covered with damp sand	Y / N	Machinery and equipment is cleaned of combustible residue	Y / N
All floor, wall and ceiling openings are covered	Y / N	Enclosed plant/tanks is purged of flammable vapors	Y / N
Covers are suspended beneath elevated work to catch sparks if there are combustible materials below	Y / N	Work area is adequately ventilated	Y / N
Fire watch person required to monitor adjacent area during work	Y / N	Confined space permit is required	Y / N



General Precautions

Smoke detectors or thermal detectors have been isolated. Insurance company has been notified	Y / N	Barricading and/or signage is required	Y / N
Fire extinguishers and/or hose reels are immediately available	Y / N	Other personnel in vicinity have been notified of hot work	Y / N
Location of fire alarm call point and fire exits is known	Y / N	Correct PPE, welding jacket, full length gloves, safety goggles etc.	Y / N
Post work fire check to be carried out in accordance with PTW procedures	Y / N	Is there an emergency plan developed and discussed	Y / N
Other requirements:			

Hot work within 10m of insulated sandwich panel buildings i.e. Coldstores & Portacomms (additional requirements)

Rated fire blankets used if hot work in close proximity to panels	Y / N	Secure fixings using adhesives (water based where possible) or mechanical fasteners	Y / N
Where panels need to be cut only cold cutting methods such as shearing (hand operated tools), low speed drills or hand tools are used	Y / N	Smoking and other ignition sources are not permitted during work on panels	Y / N
Dispose of any panel off-cuts immediately. Waste panel material must be disposed of outside of building in a suitable waste bin located at least 10m from the building	Y / N	Pipe penetrations or exposed core should be sealed with a metal facing clamped or riveted onto the metal face of the panel	Y / N
Other requirements:			

The work area has been monitored by contractor for 30mins following completion of work and inspected at completion by permit issuer – smoke/thermal detectors re-activated

Date: / / / / / / / / /

Time: _____

Receiver close out: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Issuer close out: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Ensure all newly identified hazards and/or changes are communicated to the entire team

APPENDIX 6: ISOLATION (LOTO) CERTIFICATE

ISOLATION (LOTO) CERTIFICATE



Date		Job Location	
Work/Task/Project Description			
Permit Number		Isolation Certificate Number	
Company			
Permit Receiver Name		Signed	
Permit Issuer Name		Signed	

Checked Precautions shall be observed	Personal Protective Equipment Required
<input type="checkbox"/> Tag and disconnect electric equipment	<input type="checkbox"/> Goggles / Face Shield
<input type="checkbox"/> Locked out	<input type="checkbox"/> Rubber Boots
<input type="checkbox"/> Fire extinguisher at site	<input type="checkbox"/> Gloves Rubber Thermal
<input type="checkbox"/> Barricade area	<input type="checkbox"/> Safety Belt and Line
<input type="checkbox"/> Lines blinded	<input type="checkbox"/> Hood Acid Thermal
<input type="checkbox"/> Lines disconnected	<input type="checkbox"/> Respirator Dust Chemical
<input type="checkbox"/> Contains sparks	<input type="checkbox"/> Rubber Thermal Suit
<input type="checkbox"/> Shield arc	
<input type="checkbox"/> Valves closed and tagged	
<input type="checkbox"/> Bleeders open	
<input type="checkbox"/> Keep area free of combustibles	
Other Precautions	

PRINT AND SIGN YOUR NAME IF YOU HAVE READ AND AGREE WITH THE PERMIT CONTENT

Name	Signature	Designation

ISOLATIONS REQUIRED

(Drawing may be required, establish all isolation points, methods of draining, depressuring and venting)

Isolation Point	Lock/Tag Number	Installed By	Date Installed	Removed By	Date Removed	Confirmation of Permit Issuer

Sketch



APPENDIX 7: EMERGENCY PLAN

EMERGENCY PLAN

+

JSA Number		Permit Number	
Permit Type			
Company			
Address			
Site Access Point	Meet and greet?	Y / N	

EMERGENCY EVENT

RESCUE PLAN
(List the roles and duties for those persons responsible for implementing the plan)

Self-Rescue	
Assisted Rescue	
Emergency Services	

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Permit-to-Work - Emergency Plan | v1.4Page 1



COMMUNICATION DETAILS

(List the method of communication to be established as part of the rescue plan)

EMERGENCY CONTACT NUMBERS

Hospital	Name	Location	Physical Address
Phone No.	Landline / Mobile	Police	111
Site Security	Landline / Mobile	Fire	
St John	0800 426 285	Ambulance	
First Aider	Name	Location	Landline / Mobile
Rescue Team	Name (if applicable)	Location	Landline / Mobile

Remember to pass on your name, location, contact number and the nature of the emergency. Also, to check whether or not the phone requires an outside line prefix and that you have mobile phone service coverage before you start work!

EQUIPMENT

(List the equipment required)

Location

APPENDIX 8: WORKING AT HEIGHTS PERMIT

WORKING AT HEIGHTS PERMIT



Date		Job Location	
Work/Task/Project Description			
Permit Number		Working at Heights Permit Number	
Company		Notifiable Work? (If yes, provide Evidence)	
Permit Receiver Name		Signed	
Permit Issuer Name		Signed	

Is there an alternative work method we could use e.g., drone, camera, work from ground?

PLAN

Item	Check	Yes	No	N/A
1	Have we considered all means to eliminate the need to work at height e.g. work from ground and lift into place? (refer hierarchy table attached)			
2	Can we use substitution to minimise the risk? Consider scaffolding or Elevated Work Platform (EWP) rather than man cages or ladders			
3	Have we got an effective plan to manage traffic and pedestrians? Consider exclusion zones for falling objects, mobile plant vs scaffold etc.			
4	Do the workers have the training they need for the task e.g. fall prevention, fall restraint, EWP?			
5	Where workers are securing harness systems to PERMANENT fixed anchor points have these have been designed, certified and inspected?			
6	Has the emergency plan (last page of this form) been completed, or a rescue plan attached? High risk tasks will require more detail e.g. abseiling			
7	Is something in place to stop tools or other objects from falling? e.g. lanyards, kick boards			
8	Have we considered the risk from / to overhead services and put controls in place?			
9	Is Isolation / Lock Out required?			



DO				
Item	Check	Yes	No	N/A
10	Have physical barriers been put in place to identify exclusion zones?			
11	Are all handrails, guard rails and toe boards fixed in place?			
12	If using scaffolding, have you checked the certification is current?			
13	The slope / pitch of the work area has been addresses by our controls?			
14	Is fall arrest/restraint equipment (e.g. harness, lanyard, etc.) required? If yes, check condition, training, length of lanyard vs height of drop etc.			
15	Has all equipment been visually inspected as being in good condition, fit for purpose and currently certified?			
16	Is an experienced and competent person in charge of installing and checking temporary anchor systems? Who? Name:			

ACT

If the methodology or site conditions change, work must stop, and hazards and risks must be reassessed before work can proceed.

Should an emergency occur, implement the Emergency Plan immediately.

PERMITS OVER 1 DAY (MAX 5 DAYS)
(Review with Supervisor at start & end of each day)

Date: / / / / / / / / / /

Receiver: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Issuer: [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE] [SIGN HERE]

Daily close out

Ensure all newly identified hazards and/or changes are communicated to the entire team



General

Are weather conditions suitable (wind, rain etc.)	Y / N
Has area been signed & barricaded off from passing vehicles and to protect persons from entering area?	Y / N
Do operators hold correct unit standard training	Y / N
Does equipment hold current inspection tag and has been inspected in good condition	Y / N
Will the work impact on neighboring areas	Y / N
Are lanyards or other measures in place to prevent tools and equipment falling from heights	Y / N
Is area free from other hazards such as power lines	Y / N
Harness/lanyard required or life vest if over water	Y / N
Is a rescue plan required	Y / N

Ladders

Is the ladder AS/NZ standard, rated for industrial use, and in good working condition	Y / N
Is ladder barricaded/signed from vehicles or persons in close proximity	Y / N
Is ladder secured during use and surface supporting ladder is secure	Y / N
Is ladder set to 4:1 ratio and extends 1m beyond step off point	Y / N

Working on the roof

Are work positioning or fall arrest systems in place where roof pitch exceeds 15 degrees	Y / N
Are walkways, platforms, or boards in place for work on fragile roofs (including within ceilings)	Y / N
Are work positioning or fall arrest systems in place where work will be within 2m of the edge	Y / N
Are barriers or guard rails in place where work will be within 2 meters of edge	Y / N
Are voids or skylights near work area barricaded	Y / N

Elevated Work Platforms (scissor lifts, man cages, cherry pickers etc)

Does the EWP hold current certification	Y / N
Does person hold qualification to operate EWP	Y / N
Harness & lanyard are worn	Y / N
Has gradient, height, access, load and ground surface been assessed when considering EWP type	Y / N

Scaffold

If fixed scaffolding it must be erected by a certified scaffolder / company	Y / N
If mobile scaffolding it must be erected by a competent person but cannot exceed 5 meters	Y / N
Is rechecked by certified scaffolder following severe weather, earthquake, or impact from mobile plant	Y / N
Has gradient, height, access, load and ground surface been assessed when considering scaffold type	Y / N

Other controls

APPENDIX 10: PERMIT AUDIT FORM

PERMIT AUDIT FORM

Date(s) of work		Job Location	
Work/Task/Project Description			
Permit Number		Job Safety Analysis Number	
Permit Issuer Name		Permit Receiver Name	

TYPES OF PERMIT(S) AND CERTIFICATES

<input type="checkbox"/> Confined Space Permit <small>Permit Number:</small>	<input type="checkbox"/> Excavation/Penetration/Demolition Permit <small>Permit Number:</small>
<input type="checkbox"/> Hot Work Permit <small>Permit Number:</small>	<input type="checkbox"/> Isolation Certificate <small>Certificate Number:</small>
<input type="checkbox"/> Lifting Permit <small>Permit Number:</small>	<input type="checkbox"/> Working at Heights Permit <small>Permit Number:</small>
<input type="checkbox"/> Other Permit(s)	

AUDIT FINDINGS

	Yes	No
All actions adhered to	<input type="checkbox"/>	<input type="checkbox"/>
Permit Displayed	<input type="checkbox"/>	<input type="checkbox"/>
Permit Receiver and Person in Charge of the worksite compliant with permit	<input type="checkbox"/>	<input type="checkbox"/>
Isolations applied as per permit	<input type="checkbox"/>	<input type="checkbox"/>
Safety Provisions	<input type="checkbox"/>	<input type="checkbox"/>
Gas Testing	<input type="checkbox"/>	<input type="checkbox"/>
Personal Protective Equipment (PPE)	<input type="checkbox"/>	<input type="checkbox"/>
Audit Reported and recorded according to organisational procedures	<input type="checkbox"/>	<input type="checkbox"/>
Other:		

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Permit Audit Form | v1.0
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COMMENTARY AND FEEDBACK

AUDITOR NAME <small>(Please Print)</small>	AUDITOR SIGNATURE	DATE OF AUDIT
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NOTES



A series of horizontal dotted lines for writing notes, spanning the width of the page.



USEFUL WEBSITES

NEW ZEALAND GOVERNMENT

www.worksafe.govt.nz

WorkSafe New Zealand

www.aviation.govt.nz

Civil Aviation Authority

www.maritimenz.govt.nz

Maritime New Zealand

www.police.govt.nz

New Zealand Police

www.standards.govt.nz

Standards New Zealand

www.legislation.govt.nz

New Zealand Legislation

www.acc.co.nz

Accident Compensation Corporation

www.fireandemergency.nz

Fire and Emergency New Zealand

www.civildefence.govt.nz

Ministry of Civil Defence

OTHER ORGANISATIONS

www.impac.co.nz

IMPAC

www.safeguard.co.nz

Safeguard

www.chasnz.org

CHASNZ



KEY POINT

For more useful websites and resources we recommend you login to IMPAC's student portal.

OTHER IMPAC COURSES YOU MAY BE INTERESTED IN ARE:

ATMOSPHERIC TESTING

This course will equip students with a understand of atmospheric testing in potentially hazardous environments, do atmospheric tests, and interpret and respond to atmospheric testing results.

CONFINED SPACE AND GAS DETECTION

Our training programme is designed to empower your team with the knowledge and skills needed to navigate confined spaces safely, in compliance with New Zealand's regulatory standard

ENERGY ISOLATION (LOCK OUT TAG OUT)

This course is designed for students to learn about machinery lockout and reinstatement.

HSR STAGE 2: RISK ASSESSMENT AND INCIDENT INVESTIGATION

This course has been designed for students to understand how to conduct both a risk assessment and a basic incident investigation.

JOB SAFETY ANALYSIS

Job Safety Analysis involves looking at a task and considering what is the safest way to complete it. This course explains key processes, identifying hazards and controls and how to undertake a job safety analysis for a specified job.

+IMPAC

We trust you enjoyed your training with +IMPAC, New Zealand's leading full service Health + Safety solutions provider.

Health + Safety is our life – it's what we do and we do it all:

RISK MANAGER :MEXPRESS

Our cloud-based software solutions are designed to provide risk management processes to meet health and safety requirements and keep people safe. Choose between our cost effective, **set-up-and-go solution RM Express** - ideal for small to medium organisations; and **Risk Manager, with its fully customisable range of modules** which can be tailored to the needs of larger organisations.

CONSULTING

We work alongside businesses and organisations to understand their challenges and opportunities. Our hugely experienced consulting team assess, advise, investigate and **deliver relevant and practical solutions**, applying a sensible risk management approach to health and safety.

PREQUAL

Our **pan-industry solution to contractor prequalification** and ongoing management. We cater for both individuals needing contractor prequalification and companies wanting to manage all their contractors in one easy to navigate platform.

VRCOMPETENCY

Our innovative virtual reality programme to quickly and effectively upskill operators of motorised vehicles and machinery in a safe and risk free environment. Our courses accelerate training times, improve and certify skills and offer continuous learning.

TALENTBANK

With our unrivalled industry experience and wide network of talent, our **specialist recruitment service** helps to connect the right H+S people to an organisation's contract or permanent roles. We fully understand our clients' resourcing needs and know the best way to help H+S professionals build a better career.

SAFEWORX

We supply a comprehensive range of quality standards appraised **workwear, personal protection and safety equipment**, online and at retail branches nationwide. Our expert team partner closely with customers to develop innovative safety products to address gaps in high risk industries.



To discuss any of IMPAC's H+S services
contact 0800 246 722



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