



Workplace Safety Induction



Generic Surface Induction

Victoria



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LEGISLATION

INTRODUCTION TO LEGISLATION

The human consequences of injury and disease at work are enormous; so too are the financial costs. In Victoria, the Occupational Health and Safety Act 2004 provides the framework for managing the occupational health and safety function in the workplace.



The Act is designed to encourage a greater commitment to improved performance in workplace health and safety.

The Act applies to all workplaces in Victoria, other than those for which the Commonwealth is the employer. It therefore covers all employers and employees. It also covers designers, manufacturers, importers, suppliers and installers of plant equipment and substances.

The *Occupational Health and Safety Act 2004* and the *Occupational Health and Safety Regulations 2007* are both Occupational Health and Safety law and provide for significant penalties for anybody who interferes with or misuses things provided for health and safety.

WORKSAFE AUTHORITY

The WorkSafe Authority is responsible for administering the Act.



Functions of the WorkSafe Authority:

To make recommendations to the Minister with respect to:

- the operation and administration of the Act and Regulations
- to monitor and enforce compliance with the Act and Regulations
- to foster a co-operative, consultative relationship between employers and their employees in relation to the health, safety and welfare of those employees
- to promote public awareness and discussion of occupational health, safety and welfare issues and an understanding and acceptance of the principles of health and safety protection
- to monitor the operation of measures taken and arrangements put in place to ensure occupational health, safety and welfare
- to initiate and encourage research to identify efficient and effective strategies for improving occupational health, safety and welfare.

WHO IS COVERED BY THE ACT?

The Act imposes a duty of care on employers, employees, self-employed persons, manufacturers, designers, importers, suppliers and installers.

It requires all people participating in the workplace to take care that all reasonably practicable steps are taken to make sure that their workplace activities take into consideration the health and safety of themselves and others.

Employees of the Commonwealth Government and employees working under Federal health and safety awards are not covered by the Act.

WHAT IS A WORKPLACE?

A workplace is defined as a place, whether or not in a building or structure, where employees or self-employed persons work. It includes a car, truck, ship, boat, airplane and any other vehicle.

Section 26 of the Act states:

(1) A person who (whether as an owner or otherwise) has, to any extent, the management or control of a workplace must ensure so far as reasonably practicable that the workplace and the means of entering and leaving it are safe and without risks to health.

DUTY OF CARE

The Duty of Care is a legal responsibility. Duty of Care is central to the legislation requiring all workplace participants to take practicable steps to ensure health and safety measures are met.

No longer can the Government Inspector be held responsible for failures to comply with the Act and regulations that occur in industry.

All parties that have any influence on workplace health and safety now have a duty of care: employers, self-employed persons, designers, manufacturers, importers, suppliers, installers, persons in control of workplaces, and not least, employees.

RESPONSIBILITIES UNDER DUTY OF CARE

Duties of employers to employees

Employers must do all they can to make the worksite and all those who are working there safe. The employer is also required to consult with employees on all matters with regard to any changes to Occupational Health and Safety.

Section 21 of the Act states:

(1) An employer must, so far as reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health.

(2) *Without limiting subsection (1), an employer contravenes that subsection if the employer fails to do any of the following-*

- (a)** *provide or maintain plant or systems of work that are, so far as reasonably practicable, safe without risks to health;*
- (b)** *make arrangements for ensuring, so far as reasonably practicable, safety and the absence of risks to health in connection with the use, handling, storage or transport of plant or substances;*
- (c)** *maintain, so far as reasonably practicable, each workplace under the employer's management and control in a condition that is safe and without risks to health;*
- (d)** *provide, so far as reasonably practicable, adequate facilities for the welfare of employees at any workplace under the management control of the employer;*
- (e)** *provide such information, instruction, training or supervision to employees of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health.*

Duties of employers to other persons

Section 23 of the Act states:

- (1)** *An employer must ensure, so far as reasonably practicable, that persons other than employees of the employer are not exposed to risks to their health or safety arising from the conduct of the undertaking of the employer.*

Visitors to a workplace must be made aware of the health and safety procedures and must comply with those procedures. Visitors who fail to comply with the site procedures must be escorted from the workplace immediately.

Unless permission is obtained from management, and strict supervision is maintained, children are generally not allowed on a worksite.

Duties of self-employed persons

Section 24 of the Act states:

- (1)** *A self-employed person must ensure, so far as reasonably practicable, that persons are not exposed to risks to their health or safety arising from the conduct of the self-employed person.*

Duties of employees

Section 25 of the Act states:

(1) While at work, an employee must-

(a) take reasonable care for his or her own safety; and

(b) take reasonable care for the health and safety of persons who may be affected by the employee's acts or omissions at a workplace; and

(c) co-operate with his or her employer with respect to any action taken by the employer to comply with a requirement imposed by or under this Act or the regulations.

(1) While at work, an employee must not intentionally or recklessly interfere with or misuse anything provided at the workplace in the interests of health, safety and welfare.

(2) In determining for the purposes of subsection (1)(a) or (b) whether an employee failed to take reasonable care, regard must be had to what the employee knew about the relevant circumstances.

ENVIRONMENTAL LEGISLATION

Workplaces are subject to environmental legislation and must be strictly adhered to by everyone within the workplace. A breach of environmental legislation could result in disciplinary action, which may include penalties such as dismissal or personal fines.

Notification of change of circumstances

Whilst it is a requirement of legislation to inform the WorkSafe Authority of any change in circumstances (i.e. change of address) with regard to High Risk licences, it is also a requirement of industry that you inform your employer of any change of status for any other applicable licences you hold.

Duties of designers, manufacturers, importers, suppliers and installers

Equipment must be designed and manufactured in such a way that the user is not put at undue risk. The person using the equipment must be provided with an operators manual.

Duties of designers of plant

Section 27 of the Act states:

(1) A person who designs plant who knows, or ought reasonably to know, that the plant is to be used at a workplace must-

(a) ensure, so far as reasonably practicable, that is designed to be safe and without risks to health if it is used for a purpose for which it was designed



Duties of designers of buildings or structures

Section 28 of the Act states:

- (1) A person who designs a building or structure or part of a building or structure who knows, or ought reasonably to know, that the building or structure or the part of the building or structure is to be used as a workplace must ensure, so far as reasonably practicable, that it is designed to be safe without risks to the health of persons using it as a workplace for a purpose for which it was designed.*

Duties of manufacturers of plant or substances

Section 29 of the Act states:

- (1) A person who manufactures plant or a substance who knows, or ought reasonably to know, that the plant or substance is to be used at a workplace must-*
- (a) ensure, so far as reasonably practicable, that it is manufactured to be safe and without risks to health for a purpose for which it was manufactured ...*

Duties of suppliers of plant or substances

Section 30 of the Act states:

- (1) A person who supplies plant or a substance who knows, or ought reasonably to know, that the plant or substance is to be used at a workplace (whether by the person to whom it is supplied or anyone else) must-*
- (a) ensure, so far as reasonably practicable, that it is safe and without risks to health if it is used for a purpose for which it was designed, manufactured or supplied ...*

Duties of persons installing, erecting or commissioning plant

Section 31 of the Act states:

- (1) A person who installs, erects or commissions plant who knows, or ought reasonably to know, that the plant is to be used at a workplace must ensure, so far as reasonably practicable, that nothing about the way in which the plant is installed, erected or commissioned makes its use unsafe or a risk to health.*

Record books

Section 22 of the Act states:

- (2) An employer must, so far as reasonably practicable-*
- (a) keep information and records relating to the health and safety of employees of the employer; and*



(b) employ or engage persons who are suitably qualified in relation to occupational health and safety to provide advice to the employer concerning the health and safety of employees of the employer.

DIRECTION TO CEASE WORK

If you believe that a task or situation might put you in danger, you can, by advising your supervisor, refuse to do the task without fear of losing your job. You must however, perform alternative work until the issue has been resolved.

Section 74 of the Act states:

(1) If-

(a) an issue concerning health or safety arises at a workplace or from the conduct of the undertaking of an employer; and

(b) the issue concerns work which involves an immediate threat to the health or safety of any person ...

... the employer or the health and safety representative for the designated work group in relation to which the issue has arisen may, after consultation between them, direct that the work is to cease.

(2) During any period for which work has ceased in accordance with such a direction, the employer may assign any employees whose work is affected to suitable alternative work.

HEALTH AND SAFETY REPRESENTATIVES

Health and Safety Representatives are to be elected by a designated work group and will serve a 3 year term. The elected representative will represent the workers of the work group with regard to matters relating to the health and safety of the group.

A safe workplace is more easily achieved when employers and health and safety representatives regularly talk to each other about potential problems, and work together to find solutions. As part of this, the law requires employers to consult with their HSRs on all occupational health and safety matters.

An employer needs to consult with the HSR:

- to identify and assess hazards or risks to health and safety in the workplace
- before making decisions to control risks to health and safety in the workplace
- before changes are implemented that may affect the health and safety of employees
- before policies and procedures are introduced
- before making decisions about facilities for the welfare of employees

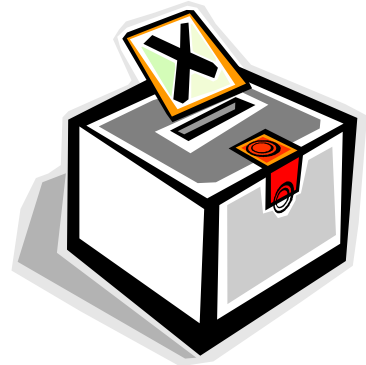
HEALTH AND SAFETY COMMITTEES

Composition of health and safety committee

At least half of the health and safety committee members are to be elected by the workers. Management may appoint the rest of the members.

Section 72 of the Act states:

- (1) An employer must establish a health and safety committee in accordance with this section-*
 - (a) within 3 months after being requested to do so by a health and safety representative; or*
 - (b) if required by the regulations to do so.*
- (2) At least half of the members of a health and safety committee must be employees (and, so far as practicable, health and safety representatives or deputy health and safety representatives) of the employer.*



Functions of health and safety committees

Committees will keep up to date with safety regulations and developments, and will review and make recommendations on safety issues to management. Committee members may at times deal with sensitive information. Members are to respect the confidential nature of such information.

Section 72 of the Act states:

- (3) The functions of a health and safety committee are-*
 - (a) to facilitate co-operation between the employer and the employees in instigating, developing and carrying out measures designed to ensure the health and safety at work of the employees; and*
 - (b) to formulate, review and disseminate (in other languages if appropriate) to the employees the standards, rules and procedures relating to health and safety that are to be carried out or complied with at the workplace; and*
 - (c) such other functions as are prescribed by the regulations or agreed between the employer and the committee.*

Meetings

Section 72 of the Act states:

- (4) A health and safety committee must meet-*
 - (a) at least once every three months; and*
 - (b) at any other time if at least half of its members require a meeting.*

INSPECTORS

Performance of functions or exercise of powers

Inspectors subject to Authority's directions

Section 97 of the Act states:

- (1) An inspector is subject to the Authority's directions in the performance of his or her functions or exercise of his or her powers under this Act or the regulations.*
- (2) A direction under subsection (1) may be of a general nature or may relate to a specified matter or specified class of matter.*



Power to enter

Section 98 of the Act states:

- (1) An inspector may enter a place that the inspector reasonably believes is a workplace at any time during working hours.*
- (2) However, an inspector may enter any place at any time if the inspector reasonably believes that there is an immediate risk to health and safety of a person arising from the conduct of an undertaking at the place.*

General powers of entry

Section 99 of the Act states:

An inspector who enters a place under this Division may do any of the following-

- (a) inspect, examine and make enquiries at the place;*
- (b) inspect and examine any thing (including a document) at the place;*
- (c) bring any equipment or materials to the place that may be required;*
- (d) seize any thing (including a document) at the place that may afford evidence of the commission of an offence against this Act or the regulations;*
- (e) seize any thing at the place for further examination or testing but only if the inspector reasonably believes that the examination or testing is reasonably necessary and cannot be reasonably conducted on site;*
- (f) take photographs or measurements or make sketches or recordings;*
- (g) exercise any other power conferred on the inspector by this Act or the regulations;*
- (h) do any other thing that is reasonably necessary for the purpose of the inspector performing his or her functions or exercising his or her powers under this Act or the regulations.*

Powers to require production of documents etc.

Section 100 of the Act states:

- (1) An inspector who enters a place under this Division may-*
- (a) require a person to produce a document or part of a document located at the place that is in the person's possession or control; and*
 - (b) examine that document or part; and*
 - (c) require a person at the place to answer any questions put by the inspector.*
- (2) A person must not, without reasonable excuse, refuse or fail to comply with a requirement under subsection (1).*

DISCRIMINATION

Discrimination against employees

Employers cannot 'sack' you for making complaints about safety issues, or for giving evidence in a safety investigation.

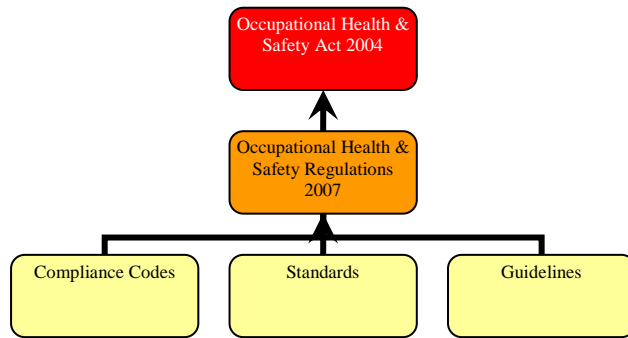
Prohibition on discrimination

Section 76 of the Act states:

- (3) The employer or prospective employer is guilty of an indictable offence if the employer or prospective employer engaged in that conduct because the employee or prospective employee (as the case may be)-*
- (a) is or has been a health and safety representative or a member of a health and safety committee; or*
 - (b) exercises or has exercised a power as a health and safety representative or as a member of a health and safety committee; or*
 - (c) assists or has assisted, or gives or has given any information to, an inspector, an authorised representative of a registered employee organisation, a health and safety representative or a member of a health and safety committee; or*
 - (d) raises or has raised an issue or concern about health or safety to the employer, an inspector, an authorised representative of a registered employee organisation, a health and safety representative, a member of a health and safety committee or an employee of the employer.*

COMPLIANCE CODES

Compliance codes provide practical guidance to those who have duties or obligations under the OHS Act. They aim to provide easy to understand information on how to comply. The codes were developed after extensive consultation with industry, employers, employees, government agencies and the community to provide greater certainty about what constitutes compliance under the OHS Act.



The 'Act' and 'Regulations' are both law passed by parliament, and non compliance can bring about prosecution.

'Regulations' support the 'Act'. They set out the legal requirements that must be observed in the workplace to ensure compliance with the 'Act'.

Codes, Standards and Guidelines, if followed, provide a best practice pathway that will ensure the 'Act' and 'Regulations' are complied with.



Compliance Codes

Section 149 of the Act states:

- (1) For the purpose of providing practical guidance to persons who have duties or obligations under this Act or regulations, the Minister may make an order approving a compliance code.
- (2) A compliance code may apply, adopt or incorporate any matter contained in a document formulated, issued or published by a person or body whether-
 - (a) with or without modification; or
 - (b) as in force at a particular time or from time to time.
- (3) The minister may make an order approving the variation of a compliance code or revoking the approval of a compliance code.
- (4) An order approving a compliance code, or a variation or revocation order, takes effect when notice of it is published in the Government Gazette or on such later date as is specified in the order.
- (5) As soon as practicable after making an order approving a compliance code, or a variation or revocation order, the Minister must ensure that notice of the making of the order is published in the Government Gazette and a newspaper circulating generally throughout the State.

(6) *The Minister must ensure that a copy of-*

(a) *each compliance code that is currently approved; and*

(b) *each document applied, adopted or incorporated (to any extent) by a compliance code-*

is available for inspection by members of the public without charge at the office of the Authority during normal business hours.

Section 150 of the Act states:

A failure to comply with a compliance code does not give rise to any civil or criminal liability.

NOTIFICATION OF ACCIDENTS

WorkSafe Authority must be notified with regard to any serious/dangerous incident, accident, injury or fatality.

Duty to notify of incidents

Section 38 of the Act states:

(1) *An employer or self-employed person must notify the Authority immediately after becoming aware that an incident has occurred at a workplace under the management and control of the employer or self-employed person.*

(2) *However, an employer or self-employed person is not required to notify the Authority if the employer or self-employed person is the only person injured or otherwise harmed, or exposed to risk, as described in section 37 by the incident.*

(3) *Within 48 hours after being required to notify the Authority, the employer or self-employed person must also give the Authority a written record of the incident, in the form approved in writing by the Authority.*

(4) *The employer or self-employed person must keep a copy of the record for at least 5 years and make a copy of the record available for inspection by-*

(a) *an inspector; or*

(b) *a person, or representative of a person, injured in the incident or whose health or safety was exposed to immediate risk by the incident; or*

(c) *a representative of a person whose death was caused by the incident; or*

(d) *in the case only of an employer-*

(i) *if any of the employees of the employer are members of a designated work group, health and safety representative for the designated work group; or*

(ii) *the members of each health and safety committee (if any) established by the employer.*

Duty to preserve incident sites

Section 39 of the Act states:

- (1) An employer or self-employed person who is required to notify the Authority of an incident that has occurred at a workplace must ensure that the site where it occurred is not disturbed until-*
- (a) an inspector arrives at the site; or*
 - (b) such other time as an inspector directs when the Authority is notified of the incident.*
- (2) Despite subsection (1), a site may be disturbed for the purpose of-*
- (a) protecting the health or safety of a person; or*
 - (b) aiding an injured person involved in an incident; or*
 - (c) taking essential action to make the site safe or to prevent a further occurrence of an incident.*
-

COLOUR CODING

INTRODUCTION

Australian Standard AS 1319-1994 sets out the requirements for the design and use of safety signs in occupational environments, whilst AS 2342-1992 calls for well designed and rigorously tested graphics/symbols that have reasonably self-evident meaning. Through the adoption of these standards, a comprehensive range of safety signage has been developed that not only provides clear visual messages, but breaks down language/literacy barriers.

WHY DO WE NEED SAFETY SIGNS?

The purpose of safety signage is to indicate:

- Prohibited actions
- Inform
- Mandatory requirements
- Warn

The use of safety signage that has a particular shape and is based on a standardized set of symbols and colours gives a ready warning of danger, can help reduce accidents, and provides a uniform approach from one work site to the next.

Safety signage is to be obeyed by **ANYONE** who is on the worksite at **ALL** times, and carries the same authority as if the instruction had been given by a supervisor.

Signage does not reduce the need for proper accident prevention measures!

VISIBILITY, POSITIONING AND CARE OF SIGNS

Safety signage should be positioned as close as possible to identified hazards to draw attention to objects and situations that may affect your health or safety.

Care should be taken when multiple signs are being installed in close proximity, as too much information may result in little being absorbed.

When signage is to be installed on a wall of similar colour, it is advisable to paint that section of the wall with a contrasting backing colour.

Signage should be positioned to ensure un-obscured and maximum visibility.

Where there is not adequate natural or artificial lighting, additional lighting must be installed and properly maintained.

If the signage becomes damaged or unreadable, you have an obligation to report the problem to your supervisor.

WHAT ARE THE DIFFERENT TYPES OF SIGNS?

Mandatory Signs (White and Blue)

Indicate an instruction that **MUST** be complied with
This class of signage includes (but not exclusively) information on Personal Protective Equipment (PPE) requirements.



Prohibitory Signs (Red circle with a slash)

Indicate an action that is **NOT PERMITTED**



Warning Signs (Yellow and Black)

Indicate a hazard that **IS NOT** likely to threaten life



Danger Signs (Red, Black and White)

Indicate a hazard that **IS** likely to threaten life and **NEVER** use symbols/pictures



First Aid and Safety/Emergency Signs (Green and White)

Indicate the LOCATION or DIRECTION of emergency related facilities



Fire Related Signs (Red and White)

Indicate the position of fire fighting resources and alarm call points



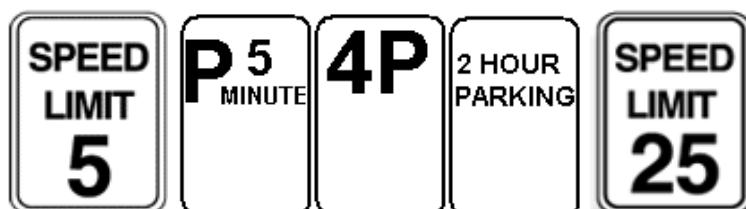
Hazchem Signs

Identify the presence of dangerous goods



Limitation or Restriction Signs

These place a numerical or other defined regulation on an activity, or use of a facility



Composite/Hybrid Signs

Whilst a specific colour combination and picture will generally satisfy safety signage requirements, many signs also include a written clarification of the warning to avoid the possibility of the picture being misinterpreted

Pipe Markers

The contents of pipes is determined by what colour the pipe is painted (see chart below)

FIRE		RED
WATER (DRINKABLE)		BLUE
WATER (PROCESS)		GREEN
AIR		LIGHT BLUE
OILS		BROWN
GASES		YELLOW OCHRE (Sand)
ACID/ALKALIS		VIOLET
STEAM		SILVER-GREY
ELECTRICAL		ORANGE
MISCELLANEOUS		BLACK
COMMUNICATIONS		WHITE
HAZARDOUS SERVICES		YELLOW/BLACK

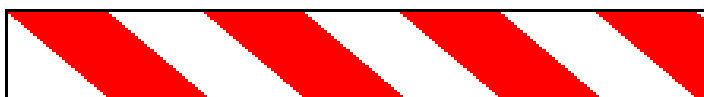
Contents may also be labeled with relevant coloured stickers with the contents wording printed in white.



Identifies the contents of pipes, ducts and conduit. The labeling is usually in the form of a painted or self-adhesive label

Hazard/Barrier Tape

For the temporary identification of safety hazards and restricted areas



All temporary barriers should have information signage attached and be clearly visible.

Colour codes:

Yellow and Black - Caution: proceed with caution

Red and White - Danger: no access

NOTE - Hazard/Barrier tape should be supported with flashing lights if being used at night or in poorly lit areas.

Demarcation Tape

Is used to permanently define the borders of designated areas, such as:



- Safe areas** - Path/walkways, emergency meeting points etc.
- Clearance areas** - Where movement of machinery occurs without warning.
- Clear access areas** - To ensure unhindered access to exits and equipment.
- Set-down areas** - Where equipment and supplies may be safely put down.

Note - painted lines may be used in favour of tape and carries the same authority!

TAGGING

ISOLATION – COMMON REQUIREMENTS

- a) Isolation is required in all cases where work is to be carried out on Plant/Equipment and where personnel may be exposed to risk.
- b) Isolation is required in cases of the removal of guards, protective shields or dismantling of Plant/Equipment components where the restoration of the energy source may pose a risk to personnel who are actually carrying out work on the Plant/Equipment.
- c) Tags/locks must be affixed close to the Isolation Point and in a manner such that the tag/lock can be clearly seen by a person approaching the point to which it is affixed. If other Work Instructions require additional actions at these points (e.g. Locks to be fitted), they must be complied with.
- d) All persons placing isolation tags/locks must be duly authorised and competent
- e) Personnel responsible for affixing any tag/lock shall ensure that all details required on the tag/lock are fully completed
- f) All information on tags/locks should be clear. If not, then the person who placed the tag/lock should be contacted and asked to clarify the information.

Before undertaking maintenance work on any Plant/Equipment, you must first follow the Standard Operating Procedures (SOPs) for that site with regard to the isolation procedures for the Plant or Equipment.

PERSONAL DANGER TAGS

“Personal Danger” Tag means a tag with the specific wording “Danger” that is black, red and white in colour.

This tag ‘out-ranks’ **ALL** other tags.

A “Personal Danger” Tag shall only be used where there is any risk of injury to the person affixing the Tag if the Plant to which the tag is affixed is operated or energised.

Each person working on Plant, including assistants, shall affix their “Personal Danger” Tag to the Isolation Point

Plant shall not be operated or energised unless all “Personal Danger” Tags have been removed

Personnel affixing a “Personal Danger” Tag shall ensure that all details required on the tag are filled out. The usual details required are:

- Name
- Company name (in the case of a contractor)
- Date
- Time
- Reason for isolation
- Signature



Should the work associated with the placement of a “Personal Danger” Tag not be completed before the end of the shift, that person shall remove their “Personal Danger” Tag and attach an “Out Of Service” Tag recording any dangers or limitations.

A “Personal Danger” Tag shall ONLY be removed by the person who affixed the tag. Should that person be unavailable to remove the tag, a Designated Person shall be responsible for the following:

- a) Obtaining the agreement of the person who affixed the tag that the tag can be removed.
- b) In the event that the person who affixed the tag cannot be contacted after every reasonable effort has been made, the Designated Person will direct that the “Personal Danger” Tag may be removed only after an inspection of the plant/equipment and associated system is carried out to ensure that:
 - The reason for affixing the “Danger” Tag has been addressed; and
 - All required tasks completed such that the Plant/Equipment can be operated safely; or
 - An “Out Of Service” Tag is attached recording all dangers and limitations.

NOTE: Never use an “Out Of Service” Tag as an alternative to a “Personal Danger” Tag.

When personnel are still working on the plant, they **MUST** have a “Personal Danger” Tag affixed!

ISOLATION TAGS

An Isolation Tag indicates that the equipment is in a state that prevents the flow of energy.

An Isolation Tag may also be utilised in Fluid or Gas Systems where a valve is to remain in the open position to ensure that the system remains evacuated or open to atmosphere.

An “Isolation” Tag **shall not** be used in any circumstance as a substitute for a “Personal Danger” Tag, BUT must be used in conjunction with a Personal Danger Tag. That is, each person carrying out work on Plant/Equipment to which an “Isolation” Tag is affixed must also affix their “Personal Danger” Tag before working on such Plant/Equipment.

An “Isolation” Tag shall only be removed after the necessary work has been carried out AND all other associated tags have been removed.

ACTIV TAGS - (06)9795 7003
ISOLATION TAG
Equipment Isolation Tag
DO NOT OPERATE

DATE: _____
NAME: _____ (PLEASE PRINT)
Title: _____
Reason: _____
Department: _____
Signature: _____
Work Permit No.: _____
Details of Equipment Isolated: _____

In the event that such nominee cannot be contacted after every reasonable effort has been made, a Designated Person will direct that the “Isolation” Tag be removed only after an inspection of the plant and associated system is carried out to ensure that:

- a) All associated tags have been removed in accordance with the Removal Procedure for each type of tag; AND
- b) The reason for affixing the “Isolation” Tag has been addressed; AND
- c) All required tasks have been completed such that the plant can be operated safely.

Contractors must use the same isolation procedures as those of permanent employees for that site.

OUT OF SERVICE TAGS

An “Out Of Service” Tag is a tag with the specific wording “Out Of Service” and is yellow and black in colour.

An “Out of Service” Tag shall be used where:

- a) The work to be carried out requires only a visual inspection and there is no danger to personnel who are actually carrying out the visual inspection on the plant/equipment to which the tag is affixed.
- b) Where Plant/Equipment has been taken out of service.

Examples are:

- Withdrawal from service due to a fault.
- Withdrawal from service awaiting repair or spares.
- Withdrawal from service due to operational reasons.

The reason for withdrawal from service will usually imply that personal injury or equipment damage may result from operating the equipment.

Removal of an “Out Of Service” Tag shall only occur after an inspection of the plant/equipment and associated system has been performed by a suitably qualified person and the necessary work has been carried out.



FLUID AND GAS SYSTEMS ISOLATION

Fluid and Gas systems are isolated in a similar way to electrical systems. Remembering that:

- Pressure in the isolated section must be relieved and maintained at atmospheric pressure before work is commenced and during the period of work.

- Where fluids or gasses present in the isolated section constitute a hazard, the Isolated section of the system shall be cleaned and purged in accordance with Corporate OHS Procedure For Cleaning and Purging.
- Mechanical and/ or electrical isolation is required on all electrical/mechanical equipment that will have a direct result on the equipment being isolated.
- Any work carried out in Confined Spaces shall comply with the provisions of Corporate OHS Procedure for Work in Confined Spaces.
- Additional Work Instructions issued by the asset owner or the agency in control of the asset shall be complied with.

ISOLATION PERMITS

The main functions of a permit system are to ensure that activities on site can be controlled and assists in providing instruction for workers/ contractors in order to carry out tasks in a safe manner.

In cases where significant voltages are involved you may need to obtain an isolation permit. The actual isolation will need to be carried out by a duly authorised Electrician.

Isolation permits may also need to be obtained in situation where production or other parts of the worksite or machinery may be affected.

ISOLATION POINTS

An “Isolation Point” is a position where there is a physical Break in the circuit or system that prevents the flow of energy. Isolation Tags should be attached at this point.

When isolation devices are not fitted to the equipment, the relevant power isolation switch/fuse/breaker inside the substation should be isolated by an authorised Electrician and tagged by all members of the work group.

LOCKOUTS / LOCKS

“Lockout” means the use of a locking device that locks an isolation switch in the isolated position, preventing the device from being used.

HOTWORK PERMITS

‘Hot work’ is any work procedure that uses:

- Welding equipment
- Grinding equipment
- Oxy/Acetylene equipment
- Naked flames



Unless work is to be carried out in a **designated hot work area**, permits are required when work is to be conducted in or around:

- Fuel
- Flammable or explosive substances
- Containers with fuel residues or vapours
- Confined spaces
- Underground
- Proximity to people, buildings or equipment

In addition to a Hot Work Permit, a 'responsible person' must be appointed to observe and ensure all requirements of the permit are followed.

TESTING & TAGGING OF PORTABLE ELECTRICAL EQUIPMENT

All portable electrical equipment must be physically tested and tagged. The frequency of the testing and tagging depends on the usage and conditions the equipment will be subjected to. Test frequencies vary from 6 monthly to every 5 years. As an added precaution you should visually check all items prior to use. Remember to check the attached 'test-tag' to see if the item has passed its test date.

If any portable electrical device has an out of date test tag, you should tag out the equipment and remove it from use. A suitably qualified tradesperson will need to re-test the equipment and re-tag it before being put back into use. Further guidance can be obtained from Australian Standard **AS3760- 2003** *In service safety inspection and testing of electrical equipment*.



< TEST TAG >	
FOR YOUR SAFETY CHECK TEST DATES	
TAG NO.: 0000001	
COMPLETE WHERE APPLICABLE	
TESTED BY	
LICENCE No.	PLANT/ITEM No.
1234	
TEST DATE	NEXT TEST DUE
/ /	/ /

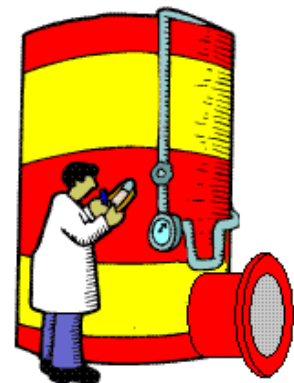
CONFINED SPACE PERMITS

A confined space is defined as an enclosed or partially enclosed space that:

- Is not primarily designed as a place of work;
- Is at atmospheric pressure while persons are in it;
- May have an atmosphere with potentially harmful contaminants and/or low levels of oxygen or stored substances that may engulf the worker;
- May have restricted means of entry and/or exit.

Examples of confined spaces are:

- Storage tanks, process vessels, boilers, pressure vessels and silos
- Open-topped spaces such as pits
- Pipes, sewers, shafts and ducts
- Ball mills, sag mills



Before entering a confined space, you must have a 'confined space permit' and have completed an approved confined space training course. Further guidance can be obtained from Australian Standard **AS2865-2001** *Safe working in a confined space*.

EXCAVATION PERMITS

These are required on some sites when extraction is to occur anywhere other than the main work area.

LAND/VEGETATION PERMIT

These are required on some sites before any disturbance of land or vegetation can occur.



MOBILE EQUIPMENT

When working on mobile equipment, you should attach a personal danger tag, and isolate / disconnect the battery.

WORKING AT HEIGHTS

When working at heights, permits may need to be obtained depending on site requirements. Consult your supervisor.

MANAGING HAZARDS

INTRODUCTION

Risk assessment is defined as the evaluation of the **probability** and **consequences** of injury or illness arising from exposure to an identified hazard.

Probability refers to the actual chance/likelihood of injury occurring

Consequences refers to the severity of injury

In cases where an **unacceptable level of risk** is identified, it is highly likely that an incident will occur. In these situations, work should not continue until the hazard has been reduced or eliminated. The most effective way to do this is to make use of what's known as the **Hierarchy of Control**.

HIERARCHY OF CONTROL

1. **Elimination** (get rid of it)
2. **Substitution** (change it or do it differently)
3. **Isolation** (isolate the hazard from the person)
4. **Engineering Procedures** (make something new, ie guarding)
5. **Administrative Procedures** (instructions, SOPs & signs)
6. **Personal Protective Equipment PPE** (gloves or safety glasses)

IDENTIFYING & ASSESSING HAZARDS/RISKS

Risk Control is achieved by identifying workplace hazards and taking an active approach to minimise or eliminate them.

Hazards are identified and assessed through:

Workplace Inspections

In order to manage work hazards, all persons must inspect their work areas and equipment prior to commencing work. If hazards are identified they should be reported immediately to the area supervisor. Additionally, the area or machinery should be isolated/barricaded until the hazard is rectified.



Job Safety Analysis (JSA) or Risk Assessment Sheets

Some tasks will bring about a certain level of danger; this danger should be identified before commencing the task. The process of identifying 'job' hazards is usually simplified with the aid of a Job Safety Analysis form. Ask your supervisor for one of these forms, they should be readily available. The form is designed to prompt you through the analysis process.

Past records

Reviewing past accident and first aid records, significant incident and hazard reports is a good way to identify future potential problems.

Consultation

Personnel who have worked at the site for many years usually have a wealth of experience and knowledge that can help identify workplace hazards. Additionally, they may also be able to provide information on how that particular hazard has been managed in the past.

Material Safety Data Sheets (MSDS)

Material Safety Data Sheets (MSDS) must be kept at the worksite. These sheets provide the following valuable information on hazardous substances:

- Chemical identification
- Hazardous ingredients
- Physical data
- Fire and explosion data
- Health hazard data
- Reactivity data
- Spill or leak procedures
- Special protection equipment
- Handling and storage precaution

DEALING WITH HAZARDS

HAZARDOUS SUBSTANCES

In addition to MSDS you should be fully aware of:

- Who is authorised to access the substance
- The safe use of the substance
- How to safely dispose of the substance

DUST

Dust is a continual hazard issue on many sites. Dust may enter the body by:

- Inhalation (breathing in)
- Absorption (soaking in through the skin)
- Ingestion (eaten)

Prolonged inhalation of quartz dust (silica dioxide) can cause Silicosis of the lungs, essentially, scarring of the lungs.

One of the most dangerous dusts to contend with is Lead dust. Many sites have strict rules where Lead is handled, and includes rules on personal washing through to where and how workers can remove Lead dirtied clothes.

Symptoms of Lead poisoning include:

- Headaches
- Brain Dysfunction
- Thinning of Bones

Dust is best controlled through preventative practices. Water jets and mist screens are effective means of suppressing dust. Where ever there is a dust risk you **MUST** wear appropriate Personal Protective Equipment (PPE).

GUARDS

The main reasons for providing guards on plant and machinery are to prevent people from coming into contact with dangerous parts of machinery and to prevent pieces or machinery and product which are ejected from the plant coming into contact with people.

There are many parts of plant and machinery which are inherently dangerous and examples of various types are:

- Revolving shafts, couplings and bars e.g. drill bits.
- In-running nips e.g. gear wheels, belts and pulleys.
- Revolving cutting tools e.g. circular saws.
- Reciprocating tools and dies e.g. power presses.
- Reciprocating knives and saws e.g. guillotines.
- Nips between moving and fixed parts e.g. metal planer reversing stops, crushing mills.
- Projections on moving parts e.g. key heads
- Revolving open arm pulleys and other discontinuous rotating parts e.g. fan blades
- Revolving mixer arms in casings e.g. dough mixers
- Abrasive wheels e.g. manufactured wheels
- Revolving high speed cages in casings e.g. spin dryers
- Revolving works e.g. mincers
- Moving balance weights and dead weights e.g. hydraulic accumulators

Machine guarding is designed to prevent access to dangerous parts of machinery and to prevent components from being ejected from the machine.

Guarding can be achieved in many ways and includes using fixed barriers such as mesh over pulleys or plating over grinding wheels.

Two handed controls which require an operator to use both hands to activate a machine ensures that both hands are occupied and cannot come into contact with the machine.

Sliding guards allow a machine to operate when closed but isolate the power source when open, preventing the operator from coming into contact with moving or dangerous machinery.

Electronic safety devices such as photoelectric cells provide a system where the machine cannot be operate if the light beams are interrupted. Trip wires (also known as trip lanyards or pullwires) are another device to manage machine hazards. These are only to be used as emergency stops. NEVER use a trip wire as a general isolation device.

Guards must not be removed by unauthorised personnel. Authorisation to remove guards, the erection of barriers and signage and the isolation of the equipment are all required steps when removing guards.

Your machine must be inspected before you start your shift to ensure that all guards are in place.

If you find defective guards, safety devices or machinery it should be isolated and reported immediately to your supervisor so any corrections can be made before the machinery is used. NEVER be tempted to use a defective machine, especially if it is missing a guard!

You should always remember that the *Workplace Health and Safety Act 1995* provides for significant penalties for anybody who interferes with or misuses things provided for health and safety.

ELEVATING WORK PLATFORMS

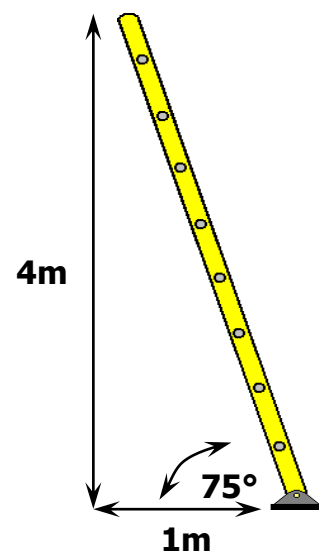
Generally, there is no need for any nationally recognised operators' certificate unless the platform is boom operated and reaches beyond 11 metres.

HOWEVER, the *Workplace Health and Safety Act 1995* mandates a requirement for all employees to be adequately trained in the correct operation of any equipment before they use it.

Furthermore, as the worker will be working at height, there is a need to use a suitable fall arresting harness. Lastly, there is also the requirement for the operator to be duly authorised to use such platforms.

LADDERS

- Extension ladders must overlap each section by a minimum of 3 rungs.
- Never stand any higher than the third rung from the top.
- Always have at least 3 points of contact when going up or down a ladder.
- NEVER use a metal ladder near electricity.
- Ladder should protrude at least 1 metre above the step-off point.
- Tie off the top of the ladder.
- Must be footed/secured at the bottom.
- Use a safety belt if working from the ladder.



Ladders should be positioned out from a wall at approx. 75 degrees, or, in other words, the base should be 1 metre out from the wall for every 4 metres of ladder height (i.e. approx. $\frac{1}{4}$ of the height of the ladder out from the structure).

Temporary barriers should be erected directly below areas where people are working at height. Remember to reposition any temporary barriers you have set up as you move work platforms/scaffolding/ladders etc.

Never walk under a suspended load or ladder, no matter what!

COMPRESSED AIR

The incorrect use of compressed air in the workplace is the cause of many accidents.

The most common injuries are:

- Rupture of internal organs
- Damage to Eardrums and Eyes
- Air bubbles in the blood stream (air embolism)

Compressed air is NOT to be used to blow dust etc from your clothes/overalls.

The other main cause of compressed air accidents is from unsecured air lines and their associated connectors. All air line connectors must be firmly secured by a safety clip or, on hoses with an internal diameter of 25mm or greater, by chains.

ELECTRICAL HAZARDS

Electrical hazards are far too common. Ensure your work site has:

- No broken globes, sockets, switches
- No frayed, exposed or defective conductors/leads
- Power tools in good condition
- Power tools and leads regularly inspected and tagged
- No work near exposed live electrical equipment
- Welding leads and handpieces in good condition
- No strained leads
- No cable-trip hazards
- Switches/circuits correctly and clearly identified
- Lock-out procedures/danger tags available
- Earth leakage systems fitted to circuits
- Start/stop switches that are clearly identified
- Switchboards that are adequately secured
- Appropriate fire fighting equipment near electrical hazards

WELDING SAFETY

Electric welding and gas cutting/welding tasks must only be performed by suitably qualified and authorised personnel. The following is a check-list of welding hazards:

- Gas bottles securely fixed to trolley
- Welding fumes well ventilated
- Fire extinguisher near work area
- Only flint guns used to light torch
- Vision screens used for electric welding

- LPG bottles within 10 year stamp
- Hand piece in good condition
- PPE provided and worn
- Hot Work Permit system used
- Work environment free of combustible materials
- Flash-back arresters are fitted

MANUAL HANDLING/LIFTING

The majority (approx. 99%) of manual handling injuries involve sprains and strains, with injuries to the back comprising around 65% of all manual handling injuries cases. More than 40% of manual handling injuries, for men and women, are associated with non-powered hand tools and appliances.

The most common cause of back injuries is from manual handling; which accounts for 69% of all back injuries.

The reason is that manual handling requires human force to lift, carry, push/pull, restrain or hold a load and it is performed almost everywhere including shops, hospitals, local council areas, constructions sites, factories, farms, warehouses and offices.

Most back injuries tend to develop over time as a result of an accumulation of small accidents rather than one major accident. They can be prevented by effective risk management measures and their impact reduced by effective rehabilitation programs. When lifting, safe manual handling practice requires you to:

- Ask for assistance
- Keep **YOUR** straight back (or maintain your natural curve)
- Bend your knees and lift with your leg muscles
- Keep your arms/load close to your body

HOUSEKEEPING

Poor housekeeping of the work environment can quickly lead to the creation of hazards.

The saying '**Everything has a place, and everything in its place**' is good advice. Below is a basic check list of those issues that if not addressed, can create hazards.

Aisles and trafficable areas:

- Unobstructed
- Have adequate lighting
- Clean and tidy
- Free from excess oil and grease

Tools/machinery:

- Adequately guarded
- Warnings or instructions displayed
- Emergency stops appropriately placed and clearly identifiable
- Operated safely and correctly



Workspaces:

- Tools in designated place
- Duckboards or floor mats provided
- Material stored in racks/bins
- Shelves free of rubbish
- Floors around stacks and racks clear
- Drums checked
- Pallets in good repair
- Heavier items stored at a convenient level
- No danger of falling objects
- No sharp edges
- Safe means of accessing high shelves
- Racks clear of lights/sprinklers
- Free from slip/trip hazards
- Floor openings covered

REPORTING SYSTEMS

HAZARD/DEFECT REPORTING

All worksites should have a defect reporting system. The system will vary from one site to another, but it is crucial that:

- Defects are reported promptly
- Defective equipment is removed from service via an 'Out of Service' tag
- All required paperwork is filled out with urgency
- Supervisors are aware of the issue

INCIDENT INVESTIGATION/REPORTING

There are many reasons incidents will be investigated but the main one is to prevent a recurrence.

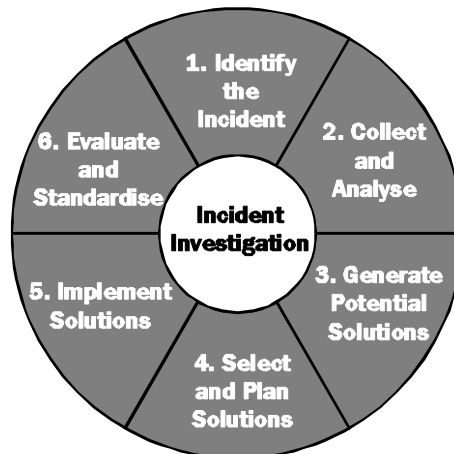
An incident investigation which is carried out well will prevent not only the same type of incident happening again but also potentially many other types of incidents. An accident investigation is also done to determine the causes of the incident. A manager or supervisor will carry out an investigation to help fulfil his or her legal obligations.

Organisations such as Workplace Standards and the police also do incident investigations but their investigations are intended to find someone responsible. In-house investigations are different.

Here we are trying to determine all the factors which contributed to an incident and ways to prevent them being a problem in the future.

What should we investigate? All incidents where there has been an injury, illness, property damage, environmental problem or near miss must be investigated.

A process for incident investigation is as follows:



CAUTION:

Immediate action must be taken to make the area safe, isolate it and preserve any evidence

Step 1. Identify the incident

What was the unplanned or uncontrolled event? Try to identify the actual event rather than the outcome of the event such as injury or property damage.

Step 2. Collect and analyse the data

Obtain all the facts, evidence and information to analyse and determine the root cause of the incident.

Step 3. Generate potential solutions

Come up with a list of ideas for controlling the most likely root causes identified.

Step 4. Select and plan solutions

Identify the best solution(s) from this list based on criteria such as cost, practicality, simplicity and percentage risk reduction.

Step 5. Implement solutions

Implement to solution(s) as per the plan.

Step 6. Evaluate and standardise

Ensure the solution has been successful and lock it in.

SIGNIFICANT INCIDENT REPORTS

Legislative requirements

The *Occupational Health and Safety Act 2004* has requirements for the immediate reporting of serious incidents (s38) and for the non-interference with the site of a serious incident (s39).

PERSONAL & PROTECTIVE EQUIPMENT (PPE)

INTRODUCTION

Personal Protective Equipment (PPE) is worn to protect us against the hazards in the workplace which cannot be eliminated, whilst protective equipment are those resources that are not worn, but physically keep you away from danger.



Wearing personal protective equipment does not mean that we ignore potentially dangerous or harmful conditions, but serves as a shield against the hazards which cannot be eliminated in the workplace.

Personal protective equipment should be the last line of defense, not the first! - (Refer to Hierarchy of Control p.26)

All people who are at a work site, regardless if they are employees, contractors or visitors must be responsible for, and use appropriate personal protective equipment.

Personal protective equipment should comply with the Australian Standards and there is an extensive series of Australian Standards which covers PPE.

HEAD PROTECTION - SAFETY HELMETS

All safety helmets should conform to the requirements of *AS1801 - Industrial Safety Helmets* and be maintained in accordance with *AS1800 - The Selection, Care and Use of Industrial Safety Helmets*



A safety helmet is worn on a construction site where:

- There is a possibility that a person may be struck on the head by a falling object.
- A person may strike their head against a fixed or protruding object.
- Accidental head contact may be made with electrical hazards.

Every person should wear a safety helmet:

- Where there is a risk of a head injury.
- If required to do so by an employer and/or the person in control of the workplace.

Accessories

No accessory should be fitted to safety helmets unless specifically designed for the application. Furthermore, care should be taken to ensure that the accessories do not diminish the protection of the head wear.

Cleaning of Equipment

Safety Helmets should be cleaned regularly to ensure continued helmet hygiene. Warm soapy water is an acceptable cleaning method. Harsh chemicals or abrasive cleaners should not be used.

Inspection of Headwear

Headwear should be regularly inspected by the user for dents, cracks or chips, and if it sustains a solid impact, it should be replaced immediately. Unauthorised alterations to the helmet/hat are discouraged and it must be kept in good condition. Helmets that show any of the above or other excessive wear and tear should be immediately withdrawn from use and replaced with a new helmet. The old helmet should be destroyed to eliminate the risk of another person using the helmet.

NOTE:

The inside harness and straps of a helmet can be replaced without the need to replace the helmet shell. Any helmet that needs the harness replaced should be removed from use until complete. Helmets should be replaced in accordance with *AS 1800:1981 - The selection, care and use of safety helmets*.

Working Life of Helmets

Section 3.4 of Australian Standard AS/NZ 1800:1998 covers the "Working Life" of helmets.

The Australian Standard specifies a **3 year replacement date**.

Each helmet, when manufactured, has a year and month of manufacture stamped onto the inside of the shell near the peak for easy reading. The stamped arrow will point to the month of manufacture, and additionally overlays the year of manufacture. For example, if the arrow points to 9 and the number the arrow overlays is 04, then the helmet was manufactured in September 2004 (see picture).



If the helmet has been used regularly, it should be replaced after **3 years** from the **date of issue**. **Note:** that the date of issue may not be the same as the date of manufacture.

The harness should be replaced after **2 years only** and the headband should be replaced as required.

Unsafe Practices

The following practices shall not be undertaken as these practices seriously reduce the safe working life of the helmet.

1. Helmets are not to be stored in places where they are exposed to excessive heat or sun, i.e. the rear window of motor vehicles or placed in front of windows.
2. Using cleaning products that are not recommended by the manufacturer which may damage the helmet, i.e. petroleum products, abrasive cleaning agents.
3. Using helmets for purposes other than what they are designed for, i.e. as seats.

SUN HATS

Sun hats must be worn by employees who are exposed to UV Rays or strong sunlight. The type of hat worn will depend on the work being carried out and what other PPE is required to be worn with the hat, i.e. ear muffs.

FOOT PROTECTION

Safety footwear must be worn at all times. Regularly check the soles for excessive wear, and if the footwear is of a lace-up style that the laces are securely tied. It is advisable to check with your employer if there are any restrictions on the style of safety footwear allowed at your worksite. For instance, elastic sided boots may not provide enough ankle support, and may allow fluids to enter the footwear. Some of the design features you will need to consider are:

- Heat resistance
- Oil & acid resistance
- Slip resistance
- Steel midsole
- Cushioning



Note: If the steel cap (protection cap) becomes exposed in any way, the safety footwear should be replaced as soon as possible.

EYE PROTECTION

Eye injuries are a major cause of lost working days in Australia, particularly in the manufacturing industry.

Occupational eye injuries are most likely to result from work that generates flying particles, dust or radiation. Tasks with the highest risk of eye injuries are grinding, welding and hammering. Other high risk activities include cutting, drilling, spraying, smelting, sanding, chipping or chiselling.



While protective equipment – e.g. safety glasses, goggles and face screens - may be a standard safety requirement at many workplaces, protective eye equipment should always be the last step in eye protection. Australian Standard AS 1336:1997 specifies safety glasses, goggles, face shields and face screens for a wide range of work conditions.

A common problem in workplaces is over reliance on eye protection rather than eliminating or controlling eye injury hazards. Most safety glasses are designed to protect the operator from particles coming from in front of the face, rather than from the side or rear. Many workers are often injured by particles entering their safety glasses through air vents or gaps. In these instances goggles and/or a face shield are needed.

Sun/Glare Hazards (Ultra Violet Radiation)

NEVER be tempted to wear sunglasses on a work site, they do not generally offer protection against impact or provide an adequate barrier to dust and particles entering your eyes. On a worksite, if sun and glare are a problem, then use tinted safety glasses.

Lasers

Many worksites use lasers to perform measuring and levelling functions, and whilst a 'blink-reflex' is usually enough to protect the eyes, NEVER purposely look directly into the beam of this equipment.

In particular, pay attention if you are using any sort of optical magnifying device in the vicinity of laser beams (dumpy level, binocular, magnifying glass etc) as this will significantly increase the risk of eye damage.



HEARING PROTECTION

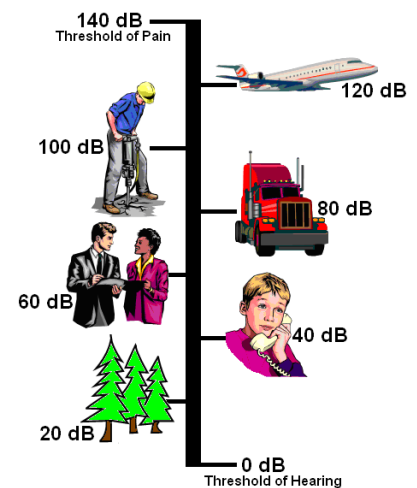
Noise is unwanted sound and is measured using the decibel scale. Decibels units are written as dB.

Australian Standard 1269 - *Occupational Noise Management* states that the maximum daily noise dose should be no more than 85 dB for eight hours a day. Permanent hearing damage is likely to occur if this daily dose is repeatedly exceeded. If daily dosage is likely to exceed then hearing protection must be worn!

It is the responsibility of your employer to provide the correct personal hearing protectors.

Personal hearing protectors (earmuffs and earplugs) should be used as a temporary measure or as a last resort. Every effort should be made to reduce the noise at the source.

Your hearing protectors should feel comfortable. If not, there should be a choice of protectors available. This will allow you to wear them whenever you are exposed to noise.



Early warning signs of hearing loss include:

- Ringing in the ears after a noisy activity.
- Having difficulty understanding what people say.
- Needing to turn the volume up to hear the radio or television when others appear to hear adequately.
- Failing to hear background noises such as a ringing telephone or doorbell.

EAR MUFFS

Earmuffs enclose the ear shell and are sealed to the head by soft cushions. A tensioning (head) band provides the necessary sealing force, and connects the cups. The cushions need to be regularly inspected, cleaned and replaced.

Earmuffs are available with head, neck, and chin bands, and are also available in helmet mounted versions.

Advantages:

- Quick and easy to put on and remove.
- No interference with auditory canal problems (inflammation, allergy).
- Practical in dirty environments.
- Good high frequency attenuation.



Disadvantages:

- Inconvenient load on, and pressure to the head
- Uncomfortable at higher temperatures
- Loss of "directional hearing"
- Limited compatibility with other personal protection equipment
- Limited low frequency attenuation

EARPLUGS

Earplugs are worn in the auditory ear canal or cover its entrance, to seal against noise. These can be provided with an interconnecting cord or headband and are disposable or reusable.

Earplugs and Earmuffs are rated for different noise levels.

Earplugs can be divided into three main groups:

Disposable

Pre-shaped

Custom moulded

Disposable earplugs

Made of polymer foam material and are compressed into a thin roll before insertion into the ear canal. After insertion the foam will return to its original dimension and so seal the ear canal.

These are intended for single use only. Correct (deep) insertion is essential for adequate noise insulation.

Pre-shaped earplugs

Inserted directly into, or covering the entrance of the auditory canal. These can be reused several times and are washable. Correct (deep) insertion is essential for adequate noise insulation.

Advantages of disposable and pre-shaped earplugs:

- Fits most users
- No load on, or pressure to the head
- Comfortable in warm environment
- No interference with other personal protection equipment
- Directional hearing is not affected

Disadvantages:

- Level of protection is dependent on accurate fitting - good training is needed
- Slowly come loose - regular re-fitting is needed
- Discomfort in the ear canal
- Limited choice in attenuation levels

Correct fitting of disposable earplugs

- STEP 1 - With clean hands, roll (don't squeeze) the ear plug between your thumb and first 2 fingers until the diameter of the plug is as small as possible.
- STEP 2 - Reach over your head with the opposite hand (to the ear you are inserting the plug) and pull the top of your ear to open the ear canal.
- STEP 3 - While you are holding the ear open, quickly push the rolled end of the plug into your ear, leaving enough of the ear plug outside the ear to allow removal.

Removing ear plugs: Twisting the plug gently will break the seal before removing

Custom moulded earplugs

Made-to-measure to the individual's auditory ear canal. The plug provides the sealing, while an additional acoustic filter determines the actual attenuation required.



Advantages:

- Long term wearing comfort.
- Easy to fit.
- Range of filter materials available.
- Ventilation of the ear canal provided by the acoustical filter.
- Practical in dirty environments.

Disadvantages:

- Need to be custom fitted/ordered
- Cost

HAND PROTECTION

Each year in Australia there are in excess of 50,000 work related hand injuries. However, many of these could be prevented through the wearing of correctly selected and fitted gloves. Use of a barrier cream in conjunction with suitable gloves is recommended.

Types of Hazards

The types of hazards that may be encountered in the work place include:

- Biological
- Chemicals/Acids/Alkali/Oils
- Heat Protection
- Cold Protection
- Radiation
- Electricity
- Physical Protection - cut, abrasion, puncture

Glove Materials

The following is a list of those materials you might expect to see used in the manufacture of safety gloves, and some typical uses:

Mesh -	Cut and puncture resistant
Cotton -	Abrasion
Leather -	(Suede, pig, cow, goat etc.) - heat, abrasion, cold
Kevlar -	Cut, heat
Asbestos -	(Health hazard, not recommended) - heat
Silicate -	Heat
Nitrile rubber -	(Synthetic) - acids, solvents, oils
Neoprene -	Acids, solvents, oils
PVC -	Acids, solvents, oils
Latex -	Biological
Lead/Leather -	Radiation
Rubber -	Acids, solvents, oils, electricity

Cuff Styles

There are a variety of cuff styles to choose from - namely:



Glove Selection (gathered/elasticised)

There are many factors and hazards that will determine the correct glove selection. The following physical attributes should be given consideration:

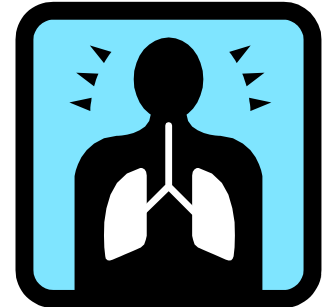
- * Materials being handled
- * Work environment
- * Length of glove
- * Design of glove
- * Glove material

RESPIRATORY PROTECTION

Respiratory protection is required to safe guard against lung damage caused by harmful dusts, mist, fumes or smoke. Several factors need to be considered when selecting a suitable respirator for a particular situation. It is important to make sure that the respiratory protection devices comply with Australian Standard **AS 1716 Respiratory Protective Devices**.

Selection of respirators will be influenced by the following factors:

- Class of contaminant
- Task or activity
- Correct fit/seal on the face
- Environment
- Duration of activity
- Hindrance to sight and hearing



To protect effectively, a respirator must be worn whenever the person is exposed to a contaminant.

It is important that you determine what that you will be dealing with before you choose a suitable respirator. The time a respirator will protect the user will depend on the type and the concentration of the contaminant.

In general terms, we wear a respirator to protect against:

- Dust particles
- Harmful gases and fumes

Disposable Respirators (Dust Masks)

Disposable particulate respirators can be used in dusty environments such as mill areas or crushing ore. The respirator may not be used more than once. Additionally, you must discard the respirator if there is visible dirt or dust on the inside of the mask. The respirator should be disposed of in a manner so it cannot be reused.

Cartridge Respirators

Cartridge respirators are a specialised piece of Personal Protective Equipment and require the installation of the correct cartridge to match the respiratory hazard encountered. Options include

- Toxic fumes/gases (acids, ammonia, cyanide etc)
- Fibrous materials (asbestos, fibreglass etc.)
- Particulates (dusts)
- Chemicals (pesticides etc.)



Respirators should be inspected prior to each use; making sure that all detachable pieces are securely attached, and the straps and body of the mask are in good condition. You should never share your respirator with anyone.

Fitting Respirators

It is important to recognise that facial hair (such as beards, moustaches, sideburns, stubble) does not allow respirators to operate effectively because of the poor seal the hair creates. Personnel should not work in respiratory hazardous locations if they have such hair.

You may find that the employer has a condition of employment banning facial hair due to the need for effective respiratory protection on site. It is also important that when fitting any respirator that it does not limit your hearing or vision.

CLOTHING

Disposable Overalls

Where tasks may expose the worker to excessively dirty situations, dangerous materials, or cause contact with grease and oil, then disposable overalls may be used. These overalls come in a range of styles and are manufactured from several types of materials. They are secured via a 'zip' and usually have an elasticized hood.

High Visibility Clothing

In most cases, the wearing of High Visibility ('Hi-Vis') clothing is mandatory throughout entire worksites. There are also specific requirements if you will be wearing the clothing during daylight hours, or during night time/underground.

Australian Standard *AS 4602-1999 High Visibility Safety Garments* states that high visibility vests must be categorised as daytime use only (Class D), night time use only (Class N) or both day and night time use (Class D/N).

LANYARDS / HARNESES

The ability of the human body to survive a free fall with the minimum chance of serious injury will depend on the:

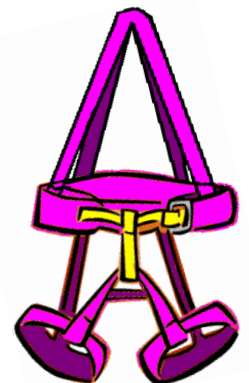
- Distance of the fall
- Size of the person
- Decelerating forces on the body

A free fall is defined as "*an unrestrained fall either vertical or down a steep slope*".

If the level of deceleration during free fall can be controlled then the likely hood of serious or fatal injuries being sustained are significantly reduced.

The design and performance parameters of Industrial fall-arrest systems is specified in Australian Standard **AS 1891.1** The Standard demands that all persons likely to experience free fall during the performance of there duties are required to wear a **full harness** and be attached to an **anchorage point** or **static line** by a **lanyard** or an **inertia reel system**.

Lanyards should have a minimum tensile rating of 15 kN (approx 1500kg) and be as short as possible, so as to minimise fall distances. In **ALL** instances the lanyard **SHOULD NOT** exceed 2 metres in length, and the use of a harness is mandatory where there is a risk of falling 2.4 metres (or more)!



PROTECTIVE EQUIPMENT

BARRICADES

Barricades are used to indicate restricted access into areas which contain holes, excavations, openings, or areas in which a danger from falling objects is present.

Anyone who creates a hole, opening, or is working at height is responsible for erecting a barricade.

DO NOT enter a barricaded area without authorisation and knowledge of the area.

Barricades can be erected either to warn, or protect.



WARNING BARRICADES

Call your attention to a hazard, but offer no physical protection. They consist of barrier tape, stands or posts.

PROTECTIVE BARRICADES

Indicate a hazard and provide physical protection. This type of barricade consists of posts and rails or posts and chains and they create a physical barrier to entry.

Barricades should be erected:

- At 1 - 1.25 metres in height
- At least 2 metres back from the edge of excavations
- Before commencing work and extended as the work site extends
- With flashing lights attached if being used after dark
- With an entrance/opening/gate where practical

In all cases, signage should be erected on each side of the barrier stating the nature of the enclosed hazard.

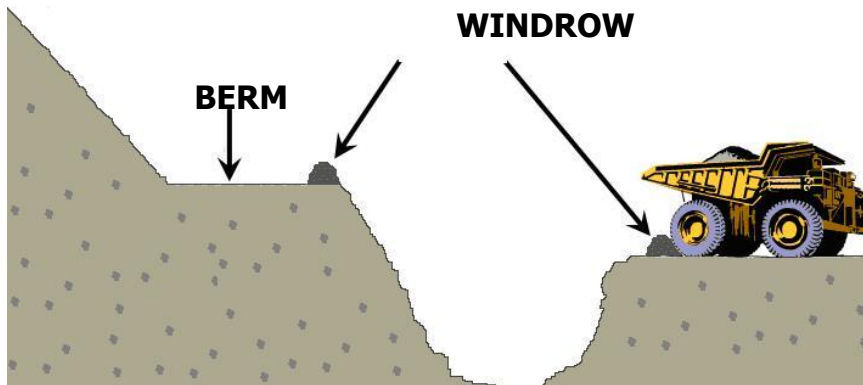
WINDROWS, BERMS and SAFETY GUARDS

WINDROWS

Windrows are a continuous mound of loose material, of appropriate height, placed at the toe or crest of a slope as a barricade to falling objects or to prevent personnel/equipment from falling inadvertently down excavations (can also be referred to as a bund).

BERM

The width of horizontal ground (bench) separating successive batter slopes. The purpose of the berm is to both reduce the overall angle of the pit walls, and to catch any loose material, thus reducing the risk of injury to the workforce at the base of the pit (also called safety berm or safety bench).



Windrows, berms and guard rails should be constructed at all sites where:

- Rear dumping vehicles are used
- Safety of personnel is to be maintained
- Along the edge of open excavations

Windrows should be constructed (as a 'rule of thumb') at a height that is at least half the height of the largest wheel of any vehicle to be driven in that area. If the area will only have pedestrian traffic, then a minimum height of 1 metre is required. Australian Standards apply to a range of guard rails with regard to design, construction, installation and minimum heights.

Reflective devices should be installed along the edges of permanent roadways to define the road edge.

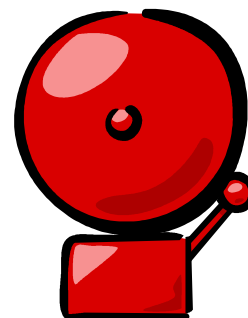
FLASHING / REVOLVING LIGHTS

Flashing and revolving lights are used on vehicles and other moving equipment to alert others who may be in the vicinity of their presence. They make the equipment more visible when in operation. If vehicles have faulty flashing/revolving lights, then DO NOT operate the vehicle and report the problem so that repairs can be made.

AUDIBLE ALARMS (Sirens, Horns and Bells)

Audible alarms are used to:

- Signal faults
- Equipment start/stops
- Passage of overhead cranes
- Reversing vehicles
- Equipment failures
- Blasting and area evacuation



EMERGENCY STOPS

All conveyors and workshop machinery must have emergency stops fitted. Conveyors will have a 'trip-wire' (also known as trip lanyards or pullwires) that runs along its entire length. Pulling this wire in an emergency will stop the conveyor.

NEVER pull the trip wire for any other purpose other than emergency stops!

If the conveyor needs isolating for maintenance work, carry out the proper electrical/tagging isolation procedure in accordance with your work site guidelines.



SHOWERS / EYEWASH STATIONS

Safety showers and eye wash stations are installed throughout the worksite, usually in close proximity to chemical stores and hot or dusty environments. They are used to wash off hazardous materials and in case of fire/burn injury. You should make yourself fully aware of the location of these stations before commencing work. They are only to be used in an emergency!

Stations are tested and cleaned regularly, but if you find a defective station, report it immediately.

Many safety showers are installed outside, be particularly careful that the sun has not heated up the pipe work, as scald injuries may occur.



EMERGENCY PROCEDURES

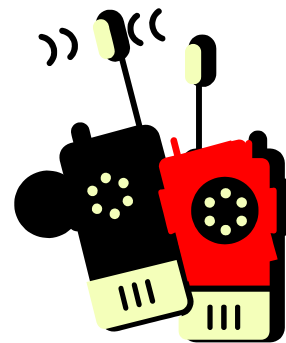
INTRODUCTION

You never know when an emergency situation will arise, but you must be prepared for it! Emergency procedures should be firmly etched into your mind, as the middle of an emergency is not the time to be enquiring what to do. Remember, if you are first on the scene of an accident, you are expected to provide first response care to injured persons until qualified help arrives. So, know what to do - before it happens!

EMERGENCY COMMUNICATION

Regardless of the method used to communicate an emergency there are certain pieces of information that must be reported. These include:

- Your name
- Location of the emergency
- What the emergency is
- Types of damage
- Types of injuries
- Numbers of people involved
- What assistance is required



TWO-WAY RADIO PROCEDURE

Start an emergency radio message with the words:

“EMERGENCY, EMERGENCY, EMERGENCY”

If an emergency has been reported over the radio, no one may use the radio network unless it is in directly related to the emergency.

TELEPHONE PROCEDURE

Start an emergency telephone message with the words:

“THIS IS AN EMERGENCY”

Never hang up (unless you have been instructed to) and stay close to the phone (if safe to do so)! **Make sure you know the emergency phone number!**

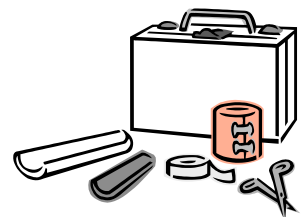


INITIAL RESPONSE FIRST AID

First on Scene

There may come a time that you find yourself in the position of having to provide some basic first aid assistance until qualified first aid or medical assistance can be arranged.

Accidents can be quite traumatic and how you react may affect the outcome. The most important action is to **NOT PANIC**.



As soon as possible, after any accident, you should check for danger and ascertain if the patient is conscious.

You should perform the following actions:

DANGER - **Assess and remove danger.** However, never move the patient unless they are at risk of further danger, or if it is necessary to establish or maintain a clear airway.

RESPONSE - **Assess the level of response/alertness from the casualty.** Ask if they hear you, can tell you their name, squeeze your hand etc. If any casualty is unconscious, you will need to give them priority.
Unconscious casualties run the risk of choking on fluid, mucus or even on their own tongue.
They will need to be turned on their side with their head tilted backwards, with their face turned slightly towards the ground.

Having completed these tasks, you should then promptly seek assistance.

Blood/Bodily Fluids

Blood and Bodily fluids may harbour dangerous infections and diseases. Fluids may not be easily seen on a casualty (underneath, covered by clothing etc.).

As a precaution, Personal Protective Equipment such as PVC/Latex gloves, masks and safety glasses should be used when assisting an injured person.

Furthermore, you should attempt to protect any wounds with waterproof dressings so fluids cannot be easily transferred to others.

Bleeding

Keep the wound above the level of the heart as this will decrease the blood pressure at the point of injury, and will reduce the bleeding.

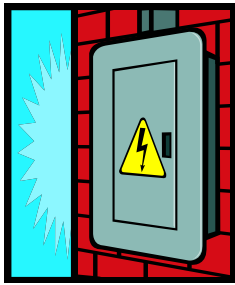
Placing direct pressure to the wound will help reduce/stop blood flow. A patient can apply pressure directly to their own wound, if they are conscious.

Ideally, sterile gauze pads should be used to reduce the chance of infection and help the wound to seal.

NEVER, remove a dressing once applied as this will lead to further bleeding by dislodging the blood clot. Place additional pads on top of the original pad (if necessary) to contain bleeding.

Pressure can still generally be applied if foreign objects are protruding from a wound, but, padding needs to be applied around the sides of the object to push in and seal the wound - objects are never removed, and never apply pressure directly down on top of the foreign object as this will only push the object further into the wound.

Electric Shock/Electrocution



Electricity needs to be isolated before attempting to help a casualty. Ideally (wherever possible), have an authorised electrician isolate the power source.

Assess the situation - Ensure the safety of yourself, the Casualty and others!

In some cases where the electricity cannot be turned off (lower voltages) standing on a dry insulated surface (rubber mat, newspaper etc.) and using NON-METAL object/s to move the casualty from danger may be an option, but never let the desire to help someone else override your own safety.

Never get any closer than 1.5metres to high voltage circuits (over 1000volts). The effects of electric shock are not always visible. Ensure the person who has received a shock is accompanied to hospital and given a thorough check over.

Crush Syndrome

Crush Syndrome typically occurs within 30 minutes of the body becoming pinned under a heavy object. The pinning causes the loss of blood flow to the pinned area, and this causes the break down of skeletal muscle, which in turn, causes the release of toxins into the body (Myoglobin, Potassium, and Phosphorus). Whilst moving a patient should generally be left to properly trained medical personnel, if help is going to take some time to arrive, the patient may need to be moved.

BOMB THREATS

Let caller finish without interruption and keep the caller talking as long as possible using key questions such as:

- Where is it?
 - What type of bomb is it?
 - When will it explode?
 - What does it look like?
 - What will make it explode?
 - Who are you?
 - How can we contact you?
- Do not hang up, even after the caller has hung up!
 - Listen out for background noises (street noises, children, motor, animals etc.) and voice characteristics (accent, stutter, lisp, gender etc.).
 - Contact the site Emergency Number and the Police (using a different telephone line).



DO NOT USE TWO-WAY RADIOS OR MOBILE PHONES
(Radio waves may set off the explosive device)

REPORTING INJURY & INCIDENTS

Section 38 of the Occupational Health and Safety Act 2004 requires that if, at a workplace, a person is killed or suffers serious bodily injury or illness; or a dangerous incident occurs as a result of which a person could have been killed or could have suffered serious bodily injury or illness, then the person having control or management of the workplace must, by the quickest available means, notify an inspector of particulars of the occurrence of the death, injury, illness or incident (Refer to Legislation p.13 - Notification of Accidents).

SECURITY THREATS

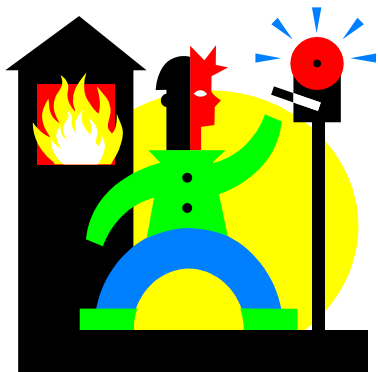
VIOLENT or THREATENING PERSONS

If you encounter violent or threatening persons on the work site never:

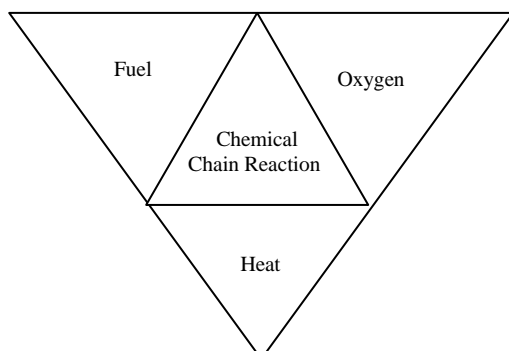
- Argue with them
- Surround or restrain them
- Make sudden or aggressive movements towards them

Report them to site security immediately!

FIRE FIGHTING AND PREVENTION









FIRE TETRAHEDRON



For a fire to burn (combust) it needs four factors, namely heat, oxygen, fuel and their combined chemical chain reaction. Removing one (or more) of these factors will extinguish the fire.

CLASS OF FIRE / TYPE OF EXTINGUISHER

As illustrated in the chart below, you **MUST** match the type of extinguisher to the class of fire. You cannot simply use any extinguisher on any fire! Ensure you are adequately trained in the use of fire extinguishers, and always remember that evacuating yourself from a fire scene is more important than fighting the fire. Raise the fire alarm as soon as possible, and do not try and be a hero!

Class of Fire		A	B	C	(E)	F
Type of Fire		Wood Paper Plastics	Liquids	Gases	Electrical	Cooking Oils & Fats
	Type of Extinguisher	Extinguisher Suitability				
	Water (all red)	Y	N	N	N	N
	Wet Chemical (oatmeal collar)	Y	N	N	N	Y
	Alcohol Resist Foam	Y	Y	N	N	Y
	AFF Foam (blue collar)	Y	Y	N	N	Y
	Vaporising Liquid (yellow collar)	Y	Y	N	Y	N
	AB(E) Dry Chem.	Y	Y	Y	Y	N
	B(E) Dry Chem. (white collar)	N	Y	Y	Y	Y
	Carbon Dioxide (black collar)	Y	Y	N	Y	Y

EMERGENCY ASSEMBLY (MUSTER) POINTS

Each workplace should develop an evacuation plan in order to promote safe evacuation procedures.

**EMERGENCY
ASSEMBLY
POINT**

There are many emergency situations where a work area/site may need to be evacuated. Some examples are:

- Uncontrolled explosions
- Gas leaks
- Fire
- Bomb Threats
- Flooding
- Structural Damage to buildings

Where it is necessary to evacuate an area you should proceed immediately, in a calm and orderly manner, to the nearest emergency assembly point. **DO NOT** attempt to save equipment, lives are more important!

Emergency assembly points are situated far enough away from buildings and infrastructure to allow a safe buffer between workers and any danger. In the case of having to evacuate an area, you should:

1. Evacuate yourself (and other personnel if safe to do so)
2. Go to the nearest emergency assembly area
3. Account for everyone
4. Report the emergency

NOTE:

If the evacuation is due to an explosion, be aware that there could be toxic dust and gases in the vicinity. Keep low to the ground and minimise the amount of fumes you breathe in by covering your mouth and nose with a cloth, or preferably, a suitable mask.

TRAFFIC & MOBILE EQUIPMENT

INTRODUCTION

Vehicle accidents are a significant contributor to workplace injuries. The following principles should be adopted when operating vehicles and mobile equipment.

- Operate the equipment in a safe manner at all times
- Perform regular equipment operational checks
- Respect the equipment - don't reduce its service life
- Observe all equipment legislation, regulations and site procedures
- Select the correct equipment for the task

AUTHORITY TO OPERATE EQUIPMENT

Employees may not operate any vehicle or piece of mobile equipment unless they are suitably trained/licensed and authorised to do so.

INSPECTIONS, SERVICING AND PRE-START CHECKS

OPERATIONAL CHECKS

Before starting any machinery you must conduct a pre-start check. 'Walk around' tests are mandatory and serve to identify any safety hazards and to ensure the equipment does not have its service life reduced.

Oil / Fuel / Coolant

Ensure all fluids are of the correct type and quantity necessary to operate the vehicle without damaging the engine or other mechanical parts. This is usually done by visually checking dipsticks, sight glasses/plugs and level plugs. Check levels of the:

- Brake fluid
- Clutch fluid
- Fuel filter (for water build-up)
- Windscreen washer
- Engine coolant
- Power steering
- Engine oil
- Battery
- Fuel



Mirrors

Check mirrors for adjustment and damage.

Steering

Check the condition and feel of the steering.

Report any undue vibration or noises to your supervisor.



Brakes

Check the feel of the foot brake by applying gradually increasing pressure. Pedal should not go 'soft' or travel any more than half way to the floor. Check operation of the handbrake. Most small vehicles have cable operated handbrakes and the ratchet mechanism should take approx. seven (7) 'clicks' to hold the vehicle.

Tyres

Inspect tyres for physical damage, like cuts, defective valves and foreign bodies. Depth of tread should be checked (where relevant) and ensure the tyre is properly inflated to the manufacturers' specifications. Check if the tyre/rim is firmly secured, ensuring all fixing lugs and bolts are tight and none of them are missing. Don't forget to include the spare tyre (if applicable).



Lights

Check the following for correct operation:

- Side lights
- Indicators
- Tail lights
- Head lights
- Park lights
- Reverse indicating lights
- Rotating/flashing lights

Operators of vehicles are also responsible for ensuring that the lights are kept clean at all times, and note that NO equipment shall be permitted to operate at night without adequate lighting. Report lighting defects immediately.

Communications

Check all vehicle two-way radios are operational and that antennas and cables are in good condition.

Extinguishers

All vehicles and heavy machinery should have an appropriate extinguisher fitted. Ensure it is in good working order and the test compliance plate indicates a current test date.



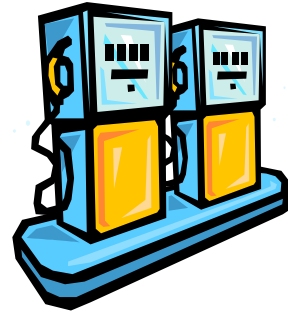
Scrubbers

Scrubbers are a water bath type exhaust conditioner, which serve to filter harmful emissions out of engine exhaust gases. Scrubbers require regular, often daily, filling up to remain operational. Low water level shut down devices may be installed to stop operation before the scrubber becomes ineffective.

Refuelling

When refuelling the following applies:

- Ensure the engine is turned off
- No smoking or naked flames are near the area
- Fuel is not spilt
- Replace filler nozzles correctly
- Turn off mobile phones and 2 way radios
- Ensure an appropriate extinguisher is near by



CRANES/FORKLIFTS

Crane and forklift operators are licensed to do so by State regulatory bodies. However, your work may require you to be on, or around, cranes and forklifts. Commonly, this would involve the use of a 'lift' box or cage.

All lift boxes are classified as lifting devices (just like shackles, slings etc.) and therefore must be certified to Australian standards before they can be used.

Workers may be lifted using a forklift or crane as long as it is in an approved, securely fitted lifting cage.

EMERGENCY VEHICLES

Emergency vehicles always have right of way over all other vehicles **when they are using** their warning lights and/or siren. It is your responsibility to ensure you do not impede their movements.

A red flashing light is generally used on emergency vehicles to alert pedestrians and vehicles of their presence and should only be used in emergencies.

ACCIDENTS

All accidents, incidents and near misses must be reported to your supervisor. In cases that involve death, serious injury or illness, the employer or responsible officer must notify WorkSafe so an inspector may be arranged to investigate.

Vehicles or machinery involved in an accident must not be disturbed until an investigator gives approval to do so. The only exception to this requirement is if it is necessary to move the vehicle to save life or to relieve suffering.

Where accidents involve spilled hazardous substances, trapped persons or are difficult to access, you should request that the emergency response team attends the accident site.

GENERAL PROCEDURES

RESTRICTED AREAS

Some areas of the work site will usually have restricted access. These will commonly include:

- * Underground
- * Pit/Quarry Areas
- * Rehabilitation Areas
- * Stockpiles
- * Explosives magazine
- * Blast Areas
- * Refuelling Areas
- * Production/Processing Areas
- * Construction Sites/Areas
- * Conveyor Systems
- * Administration Offices
- * Workshops
- * Loading Areas
- * Emergency Response Areas

Note: If in doubt about access to certain areas check with your Supervisor.

SEAT BELTS

Seat belts must be worn at all times if fitted to the vehicle and need to be properly adjusted. Report any damaged or faulty seatbelts immediately to your supervisor.

SPEED LIMITS

On site speed restrictions should be strictly obeyed! However, the indicated speeds are the MAXIMUM allowed and are based on optimum operating conditions. Poor operating conditions mean you should reduce the vehicles speed to suit those conditions.

PARKING

When parking vehicles or mobile plant, you should ensure that the area where you intend to park is a designated parking area.

Parking areas should provide good visibility to others who approach the area, thus minimising risks.

Ensure the vehicle has its park brake applied and the transmission selector is set to the appropriate parking position.

Never be in a rush to leave a parked vehicle, you must ensure that the appropriate shutdown procedures have been followed. The vehicles motor should be turned off even if you only intend to park for a short period of time. Troop carriers/mini buses **MUST NOT PARK** closer than 50 metres from heavy mobile equipment when dropping off or picking up personnel.

REDUCED/OBSCURED VISION

Dust, fog, rain and smoke are all hazards that can reduce visibility when operating a vehicle or heavy machinery. If visibility is reduced you should stop the vehicle in a conspicuous location with the hazard lights on. You should only resume driving when sufficient visibility has been restored.

HORN SIGNALS

Heavy machinery generally has a very limited field of vision for the operator. To ensure a safer work environment most sites adopt a horn signal system that advises anyone in the immediate vicinity the intentions of the driver. The usual system is

- **ONE** Blast (wait 10 seconds) - vehicle is about to start
- **TWO** Blasts (wait 10 seconds) - vehicle is moving forward
- **THREE** Blasts (wait 10 seconds) - vehicle is about to reverse

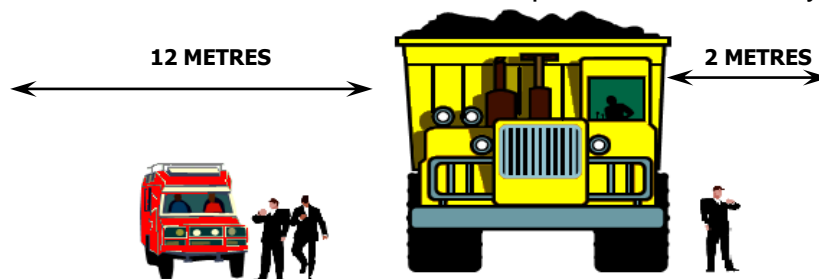
10 seconds must be allowed between giving the warning signal and performing the action

DRIVING ON WET SURFACES

Drive to the conditions. Wet surfaces reduce tyre grip on vehicles and heavy machinery. This reduces the level of control the operator has and significantly increases the risk of accident. In wet/slippery conditions, reduce speed and adopt a smooth driving approach - NO quick or jerky steering movements!

PEDESTRIANS

Whilst all vehicles must give way to pedestrians, it is extremely important to remember that heavy vehicles have a VERY restricted view from the cab. The driver can only give way to those things that can be seen. Therefore, it is good practice for pedestrians and other smaller vehicles to keep well clear of heavy equipment.



It is recommended that due to a lack of vision by the operator (as the diagram above illustrates), pedestrians should never stand closer than 2 meters on the operator's side and no closer than 12 meters on the off-side.

OVERTAKING VEHICLES ON A WORK SITE

ONLY working graders, tracked vehicles or vehicles under tow shall be overtaken, and should only occur within the following guidelines:

The road ahead is clear of oncoming traffic/obstructions

There is sufficient space to complete the manoeuvre

Two-way radio is used to get permission from the vehicle being overtaken

Overtaking speed never exceeds site limit

HAUL TRUCKS MAY NOT BE OVERTAKEN

FOLLOWING VEHICLES

When following mobile equipment a minimum distance of 50 metres must be maintained between the vehicles at all times.

OVERHEAD POWERLINES

Beware of overhead powerlines. 'Flash-over' can occur from high voltage powerlines. That is, electricity can jump across to the vehicle without touching the lines. Minimum clearance when working under high voltage lines is 6 metres. Touching a power line with a vehicle can cause the tyres to explode, sometimes up to 24 hours later!

VEHICLE FIRES

In case of a vehicle fire:

- Stop the vehicle
- Apply the park brake
- Select neutral on the transmission
- Turn off the engine
- Activate the fire suppression system if fitted
- Raise the alarm
- Leave the vehicle (take the fire extinguisher with you)
- Isolate the battery (if possible)
- Stand well clear

TYRE FIRES

In the event of a tyre fire on heavy earthmoving equipment:

- DO NOT ATTEMPT TO EXTINGUISH THE FIRE
- Notify the emergency personnel for that site
- Park vehicle in an isolated area (if possible)
- Personnel must maintain 500 metre clearance from the fire

LIGHT VEHICLE EQUIPMENT

Light vehicles should carry the following equipment:

- Two way radio
- Fire extinguisher
- Flashing light
- First aid kit

GIVE WAY RULES

- Pedestrians have the right of way over all vehicles.
 - Emergency vehicles have right of way over all other vehicles.
 - Explosive vehicles have right of way over all other vehicles (except emergency vehicles in emergency mode).
 - Heavy vehicles have right of way over light vehicles.
 - Loaded vehicles have right of way over unloaded vehicles.
 - Light vehicles must give way to all traffic.
-

HEALTH & HYGIENE

INTRODUCTION

To maintain health and fitness you should always try to monitor your own health, identify situations that could endanger your health, eat well and exercise regularly. The following should all be given due consideration.

ENVIRONMENTAL

Water Supplies

Daily intake should be approx. 2 Litres. However, this may need to be significantly more if you are working in hot conditions or undertaking physically demanding work. Make sure that you only drink from a water supply that is fit for human consumption (potable water). As a general rule, potable water is indicated by blue coloured pipe markers.



HEAT ILLNESS (Hyperthermia)

Incidences of heat illness are not overly common, especially if you drink sufficient fluids, remain out of (or minimise) direct sunlight, do not eat large meals, limit alcohol consumption (alcohol will dehydrate the body) and maintain good ventilation of the area.

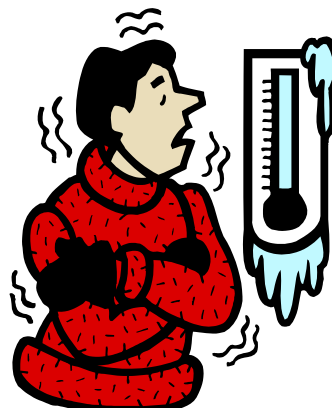
Symptoms of heat illness may include one or more of the following:

- Dizziness
- Weakness
- Fainting
- Muscle spasms
- Intense thirst
- Nausea
- Diarrhoea
- Unconsciousness

Cold Working Conditions (Hypothermia)

Symptoms include:

- Fatigue
- Drowsiness
- Shivering
- Cold bluish skin
- Slurred speech



Hypothermia may be prevented by:

- Eating warm, high calorie food prior to working in cold conditions
- Wearing suitable clothing

Noise

The noise level exposure limit over an eight hour period without hearing protection is 85 dB. As a gauge, that is approximately the noise level of a noisy restaurant, or the average lawn mower.

Effects of excessive noise may include:

- Loss of balance
- Vision/colour perception is reduced
- Ringing in the ears (Tinnitus)

Note: The noise pain threshold is measured at 140 dB (Refer to chart in “Health & Hygiene” p.37).

Change House

Change house facilities must be provided to all employees. Most have a clean and a dirty area.

Change house rules usually consist of:

- No glass items are permitted in the change house.
- Place all dirty laundry into the chute/bins provided.
- No smoking, alcohol or drugs.
- Watch excessive use of aerosols.
- Ensure that all dirty items only ever enter the dirty area.
- No Horseplay or Practical jokes.



Due to reasons of cleanliness and good hygiene, it is generally unacceptable to wear work clothes for no longer than one shift before they will need to be washed.

Dust, Fibres, Gas and Smoke

Dusts, fibres, gases and smoke all have the potential to cause lung damage. Ensure you protect your lungs by always using appropriate protective equipment, such as dust masks and respirators.

Viruses / Flu

Exposing other workers to your germs can ultimately affect the productivity of the work site.

Ensure you have notified your supervisor of your sickness and keep them updated. Ensure that you are fully fit for work before returning to the worksite.



CLEANLINESS

Personal Cleanliness

Washing hands after toileting is usual practice, but you may not have considered the potentially harmful substances that could be transmitted from your body during a toilet visit.

As a precaution, make sure you have washed your hands/skin prior to using the toilet. Additionally, wash your hands prior to smoking and eating.

To reduce the possibility of acquiring ear infections the following is suggested:

- Keep earmuffs clean
- Do not share earmuffs
- Clean hands before inserting ear plugs
- Do not re-use earplugs



SKIN PROTECTION

Dermatitis is an inflammation of the skin which occurs when the skin comes into contact with irritating substances. Symptoms include:

- Blistering
- Redness
- Sores
- Cracked/dry skin

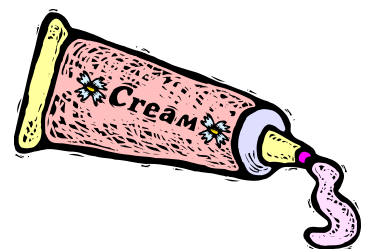
Irritation may be caused by oils, chemicals, bacteria, fungi and viruses. Use of a barrier cream in conjunction with suitable gloves is recommended.

Only apply barrier creams to clean hands and replenish the skins natural oils after using barrier creams with lanolin or other such moisturiser.

One common source of dermatitis is from oils and greases. Do not be tempted to re-use oily/greasy overalls. If working in particularly oily work environments, consider the use of disposable overalls.

UV Protection

Skin damage can occur from Ultra Violet rays. Any employee exposed to UV Radiation should apply a 30+ sunscreen (in accordance with the manufacturer's instructions). Remember to apply to all areas of exposed skin, including the back of your neck!



ALCOHOL AND DRUGS IN THE WORKPLACE

Smoking

Smoke free areas are specified in legislation. The object of the legislation is to prevent workers and the public from being exposed to the harmful effects of tobacco smoke. The following areas must be smoke free:

- Indoor (enclosed) workplaces
- Entrances/exits to buildings (within 3 metres)
- Air intakes for ventilation equipment (within 10 metres)
- Work vehicles
- Any other area designated by an employer



Drugs/Tablets

Testing for the presence of illicit drugs in the blood stream of employees is now regular practice in industry, with any employee found infringing this requirement risking instant dismissal and/or prosecution.

You may be putting yourself and fellow workers at risk through the **legal** use of certain prescription and non-prescription drugs.

Ensure that you are fully aware of the side effects of any medication. Many workers have been injured or even died by ignoring the warnings on their medication labels.

Alcohol

Most work sites have a zero blood alcohol policy. This means you must consider your intake of alcohol prior to your shift. Additionally, you may predispose yourself to heat illnesses due to the dehydrating effects of alcohol.

You may find that you can fall asleep quickly with alcohol in your system, but this sleep, will more often than not, be poor quality sleep and therefore increase your likelihood of fatigue, or worse still - depression!



FOOD

Digestion

Digestion is more effective during the day (or in the case of shift work, during the waking/work hours). Eating a large meal immediately prior to going to bed will not allow for quality sleep or for your 'body-clock' to adjust. As a result you may experience an upset stomach and quite often, diarrhoea.

Ensure that you bring some kind of 'normality' to your digestive system by eating at regular times. This is important during shift work

Food Storage

Food should be stored in sealed containers to prevent the risk of cross contamination. Ensure the food is kept refrigerated/cool.

Rubbish

Rubbish should be immediately placed in a bin. Bins should be emptied and cleaned on a regular basis. You should report unhygienic conditions to your supervisor.



Lunch Rooms

Lunch rooms should be left tidy. Cleaning should occur after every scheduled meal break.

DEPRESSION

Depression can present itself in many forms. Signs of depression include:

- Lowered self-esteem
- Change in sleep patterns
- Changes in appetite or weight
- Less ability to control emotions
- Reduced capacity to experience pleasure
- Reduced pain tolerance
- Changed sex drive
- Poor concentration and memory
- Reduced motivation
- Lowered energy levels

The Effects of depression may be avoided or minimised by:

- Spending time with family and friends
- Limiting Alcohol, Cigarette and Drug intake
- Getting at least 8 hours of quality sleep per day
- Exercising regularly
- Maintaining a healthy diet

HOMELIFE

Shiftwork generally requires individuals to work at times when others are normally sleeping, playing, eating and so on.

Therefore, shiftwork schedules may disrupt 'normal' household routines and activities.

As a result shift workers may find that despite being part of a family they eat alone, sleep when others are out and about, miss out on seeing family and friends, or get stuck with all the housework.

To help minimise the effects of shiftwork within the family, communication is extremely important.

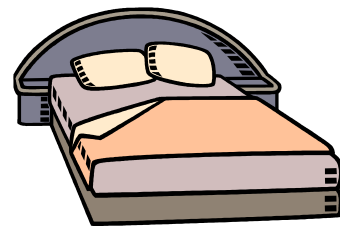
Ensure you:

- Fully inform your family and friends of your roster
- Plan outings on rostered days off
- Plan ahead for holidays and activities
- Share household duties
- Don't ignore your sex life
- Discuss problems promptly

SLEEP

Lack of sleep can result in poor work performance. Ideally you should get at least eight hours sleep each day. However, shift work can make this difficult to achieve. For optimal sleep, ensure you have an environment that is:

- Free of light
- Noise free
- Cool (20° or less)



FATIGUE

There is a complex array of factors that contribute to fatigue. But, fatigue can fundamentally be viewed as a consequence of inadequate sleep and poor diet.

Indicators of fatigue include:

- Irritability
- Lack of Concentration
- Lack of energy
- Poor eye-hand coordination
- Sleepiness or 'nodding' off



To combat fatigue you must ensure that you obtain adequate sleep and try to eat a healthy diet that includes good proteins and carbohydrates such as:

- Lean meat
- Eggs
- Seafood
- Low fat dairy
- Pasta/rice
- Fruit
- Vegetables
- Whole wheat breads and cereals

SAFETY PERFORMANCE MEASURES

INTRODUCTION

Safety is everyone's responsibility, but even with the most rigorous safety procedures and strategies - accidents and injuries occur! As a measure of a worksites overall performance in the safety arena, we can analyze accident data and company budget performance information to help determine and minimize/eliminate future injuries and 'near-misses'.



WHAT ARE THE PERFORMANCE INDICATORS?

INJURY INDICATORS

Perhaps the most obvious measure is to record and analyse all medical interventions on the work site. These can range from minor (band-aid etc.) through to the extreme (loss of life). Recording all medical treatments ensures the employee is properly covered by workers compensation.

FIRST AID TREATMENTS

First Aid treatment is basic medical treatment that is given on site and is provided by a duly qualified (certificate) First Aid officer. At this level of treatment, the employee's ability to perform their work is not significantly impacted by the injury.

MEDICAL TREATMENT INJURY

These require more significant intervention and are treated by a Doctor/Nurse either on or off site.

DISABLING INJURY

A disabling injury is a work-related injury or disease which results in a worker being unable to fully perform their regular job and so either light or alternative duties are performed.

LOST TIME INJURY

A lost time injury may also be known as a Lost Day Injury and involves the loss of a **full day** (or days) of work by the injured employee.

LOST TIME INJURY FREQUENCY RATE (LTIFR)

You may have noticed a lost time injury board outside the main gate of larger worksites. These boards display the number of days it has been since the last lost time injury/accident. Whilst these boards can help illustrate a worksites level of safety, they are only an indication of the current status. Of more use is the Lost Time Injury Frequency Rate (LTIFR) data, as this paints a long term picture of lost time injury rates. The LTIFR is based on the number of lost time injuries per million hours worked.

INJURY FREQUENCY RATES

Injury frequency rates are calculated using lost time and disabling injury data. By analysing this data it is possible to minimise occurrences and control loss.

RECORD INDICATORS

BUDGETS

At first glance, the concept of reviewing budget performance may seem totally unrelated to safety performance. But, many potential safety issues can be identified by taking a close look at budgets.

For Example:

If expenditure has risen for hydraulic oil, is this because there are more vehicles in the fleet, or is it due to failing hydraulic hoses? Either way, more vehicles may require a review of the site traffic movement procedures, whilst failing hoses could cause eye or slip hazards.



HAZARD and NEAR MISS REPORTS

It is a legal requirement under Occupational Health and Safety legislation to report all workplace injuries, hazards and near misses. It is therefore an expectation that any incidents or situations that might have led to injury (near misses), danger to health, and/or damage to property or the environment are reported in writing.

Accidents/incidents, near-misses and hazards are reported and recorded so that:

- **Investigations** (where appropriate) can be performed, and action taken to prevent a recurrence of the incident
- **Trend analyses** of the collected information can be performed, allowing the organisation to focus preventative efforts on areas of most concern
- **Formal records** are kept for the employer and employee, should it be required at a later date as evidence that the event took place
- **Legal requirements** connected with reporting of injury and worker's compensation are adhered to

A standard technique for the investigation of significant incidents and near misses is the ***Incident Cause Analysis Method*** (ICAM). ICAM allows the lessons learned about the root causes and contributory factors in significant incidents and near misses to be shared across the workplace.

Additional activities such as employee OH&S audits and behavioural safety audits help to devise corrective actions and to gauge a 'feel' for how safe the workplace environment is.

