MACHINE GUARDING MANUAL FOR THE TIMBER INDUSTRY

Contents

1.0: Introduction:

The timber industry plays a significant role in the economic stability of Australia yet, increasingly, both domestic and global influences are compelling organisations working in the industry to look outside the square when it comes to the development of their future business plans.

Environmental and legislative compliance regulations, high energy and labour costs and competition from imports and big retailers forcing business to lower prices, are among a myriad of issues business in the timber industry must respond to daily to survive and remain viable.

For operations such as Joinery and Hardware shops, Frame & Truss plants, Sawmills, Building suppliers and Logging companies, keeping profitable in an increasingly challenging and competitive environment requires these businesses to not only constantly explore new opportunities to increase revenue but to also regularly and closely scrutinise expenditure in all aspects of their enterprise.

Workplace safety is not immune from such scrutiny. Indeed, as the benefits are not easily recognisable on a financial balance sheet, investment in workplace safety often tends to be one of the first and major causalities when a business decides to investigate areas where it can reduce its expenditure. This may not necessarily be via a conscious decision to cut safety resources, but can be a result of a business placing the spotlight on maintaining viability through becoming leaner, more productive and efficient and as a result, losing focus on safety.

Unfortunately it often takes a serious workplace incident or a visit from the workplace regulator to remind a business that safety must always be an integral part of a company's business philosophy and should be view as an investment in the business, not a cost.

2.0: Scope:

This manual has been developed by Timber Trade Industrial Association (TTIA) for its members to be used as guidance material in achieving Work, Health and Safety (WHS) legislative compliance and best practice in relation to machine guarding.

This manual will focus on varying types of machine guarding including permanent and removable fixed, adjustable, self-adjustable, presence sensing (pressure mat, light curtains etc) and interlocked guarding and its appropriateness for a certain application.

3.0: Terminology:

3.1 Adjustable Guarding - Allows for a machine to process a variety of materials whilst still protecting the unused portion of the machine part requiring guarding.

3.2 Best Practice - A technique that, through research and repeated application, has reliably delivered a desired result**.**

3.3 Confined Space - An enclosed or partially enclosed space that:

- is not designed or intended primarily to be occupied by a person, and
- is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space, and
- is or is likely to be a risk to health and safety from:
    1) an atmosphere that does not have a safe oxygen level, or
    2) contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion, or
    3) harmful concentrations of any airborne contaminants, or
    4) engulfment,

but does not include a mine shaft or the workings of a mine.

3.4 Consultation - The action or process of formally discussing business concerns, activities or plans with relevant stakeholders

3.5 Duty of Care - A legal obligation imposed on an individual or group requiring a standard of care while performing acts that may cause harm to others.

3.6 Due Diligence - A specific duty imposed on officers of a PCBU to exercise due diligence to ensure they meet their work, health and safety obligations

3.7 Fixed Guarding - Permanent or removable attachment that forms part of the casing of the machine or guarding that requires the use of a tool to remove (Grinder, screw driver, spanner etc).

3.8 FOPS- Falling Objects Protection Structure. Protects plant operators from falling objects

3.9 Hierarchy Of Controls - A specific order in which hazards should be addressed and controlled, ranging from the most effective option to the lease effective option.

3.10 Interlocked Guarding - Interlocked guarding is electrical in nature and is designed to either shut the machine down when the guarding is removed or preventing the guarding from being removed whilst the machine is in operation. Newer types of saws and moulders may have interlocked hood guards separating workers from cutting components.

3.11 Officer - An officer is a person who makes decisions, or participates in making decisions, that affect the whole, or a substantial part, of a business or undertaking and has the capacity to significantly affect the financial standing of the business or undertaking. If a person is responsible only for implementing those decisions, they are not considered an officer.

Partners of a partnership are not officers but are PCBUs. An officer of a PCBU must exercise due diligence to ensure that the PCBU complies with their duties under the WHS legislation.
You are considered to be an officer if you are:

- an officer within the meaning of section 9 of the Corporations Act, other than a partner in a partnership
- an officer of the Crown, and
- an officer of a public authority

3.12 PCBU - A PCBU conducts a business or undertaking alone or with others. The business or undertaking can operate for profit or not-for-profit. The definition of a PCBU focuses on the work arrangements and the relationships to carry out the work. In addition to employers, a PCBU can be a corporation, an association, a partnership or sole trader.

3.13 Plant - Plant is term used for any device required to perform a task such as heavy machinery, a saw, pen or paper.

3.14 Presence Sensing Guarding - This type of guarding is designed to allow certain areas of equipment to remain free of physical guarding where regular access is required, but will, when activated, prevent the machine from running until the guard is re-armed, which usually requires the worker to leave the area and re-set the guard. This type of guarding is designed to stop a machine before a worker can access machine parts.

3.15 Proactive - To act prior to the occurrence of an event

3.16 Reactive - To act after the occurrence of an event

3.17 Reasonably Practicable - Reasonably practicable means doing what is reasonably able to be done to ensure the health and safety of workers and others.

When determining what is reasonably practicable, you should take into account:

- the likelihood of the hazard or risk occurring
- the degree of harm from the hazard or risk
- knowledge about ways of eliminating or minimising the hazard or risk
- the availability and suitability of ways to eliminate or minimise the risk
- after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

3.18 Risk Assessment - Risk assessment is the analysis or evaluation the risk associated with a hazard. Risk assessment can assist in determining the degree of risk associated with the hazard which can determine required control measures and allowed timeframe to implement control measures.

3.19 Risk Management - Identifying, where required assessing, controlling, monitoring and reviewing hazards, risks and control measures.

3.20 Risk Matrix - A tool used to determine the severity of a hazard and comprises part of the risk assessment process.

3.21 ROPS - Roll Over Protection Structure used to protect mobile plant operators in a plant roll over situation.

3.22 Self Adjusting Guarding - Common on saws, this type of guarding will automatically adjust by being moved away from the point of operation by the material being processed.

3.23 Serious Incident - A serious injury or illness is one that requires a person to have:

- medical treatment within 48 hours of exposure to a substance
- immediate treatment as an in-patient in a hospital, or
- immediate treatment for a serious injury or illness such as a serious head injury, a serious burn or a spinal injury and a number of other injuries listed in the model WHS Act.

3.24 Stakeholder - An individual or group who may be affected by the actions of a business.

3.25 WHS - Work, Health and Safety. Replaced Occupational Health and Safety (OHS) in 2011.

3.26 Worker - A worker is anyone who carries out work for a PCBU, such as:

- an employee
- a contractor or sub-contractor
- an employee of a contractor or sub-contractor
- an employee of a labour hire company
- an apprentice or trainee
- a student gaining work experience
- an outworker
- a volunteer

3.27 Workplace Regulator - A state government appointed entity established to provide WHS information and enforce WHS legislation in the workplace (e.g. Safe Work NSW, Worksafe Vic etc).

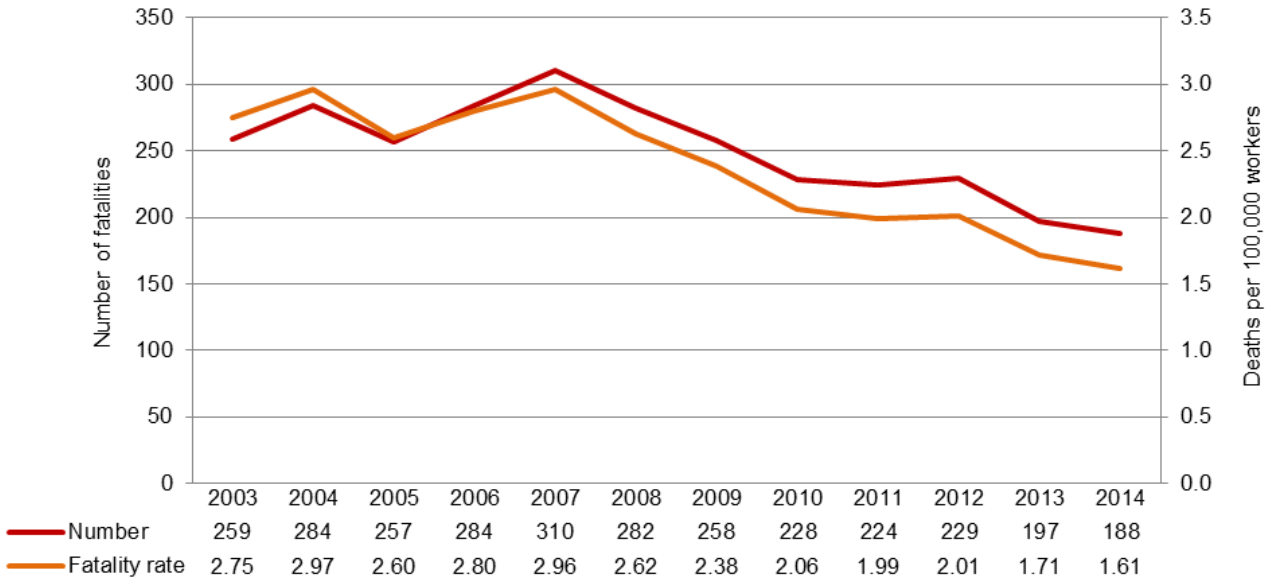
4.0: Statistics:

Each year in the timber industry, there are in excess of 1,000 serious injury claims made in Australia. In 2014, 188 workers lost their lives in workplace incidents. The total cost of workplace injuries to Australian business exceeds $60B per year, or, $164m per day.

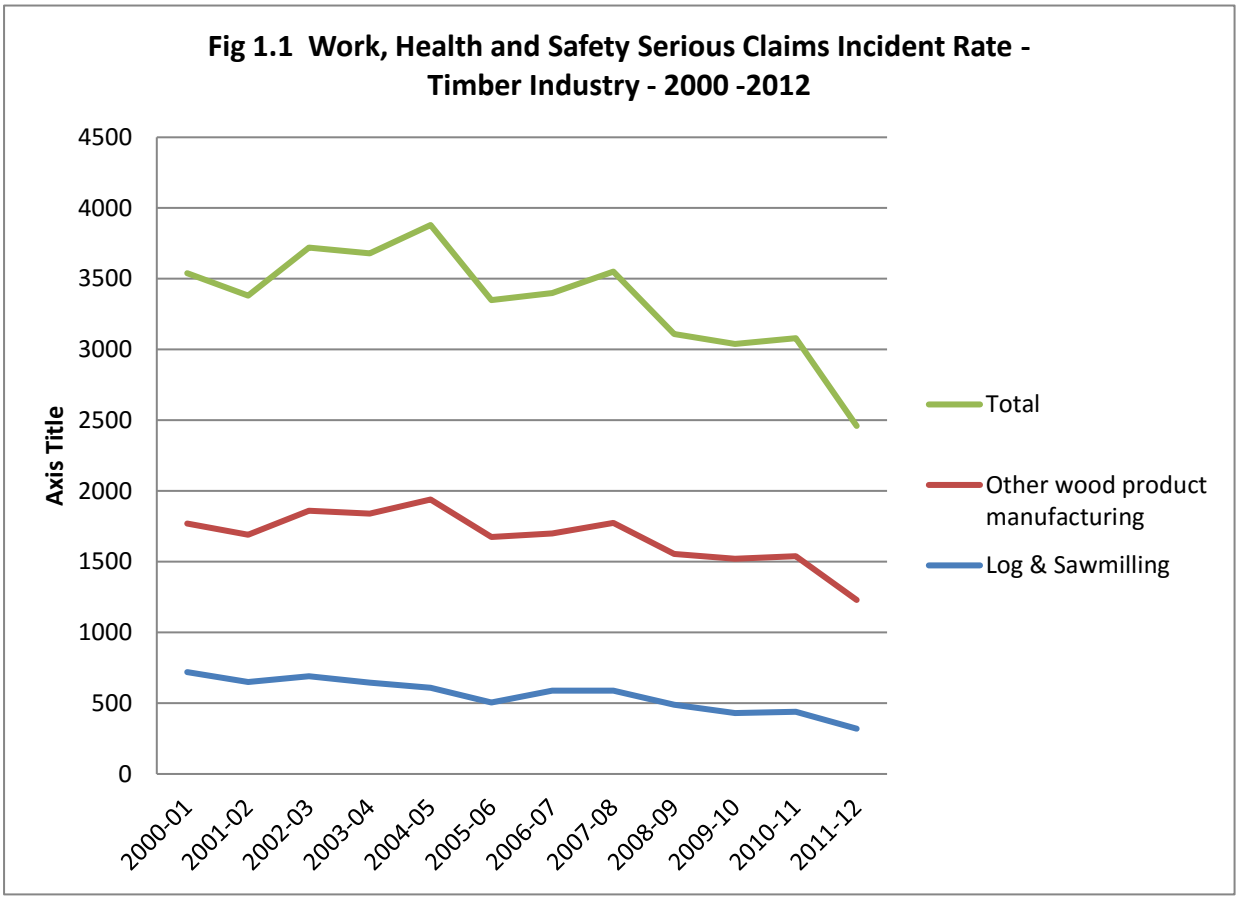
The below graphs provide a brief summary of Australian workplace injuries and fatalities and costs.

The preceding statistics are provided courtesy of SafeWork Australia.

Fig 1.0 Workers Fatalities- All Industries - 2003-14

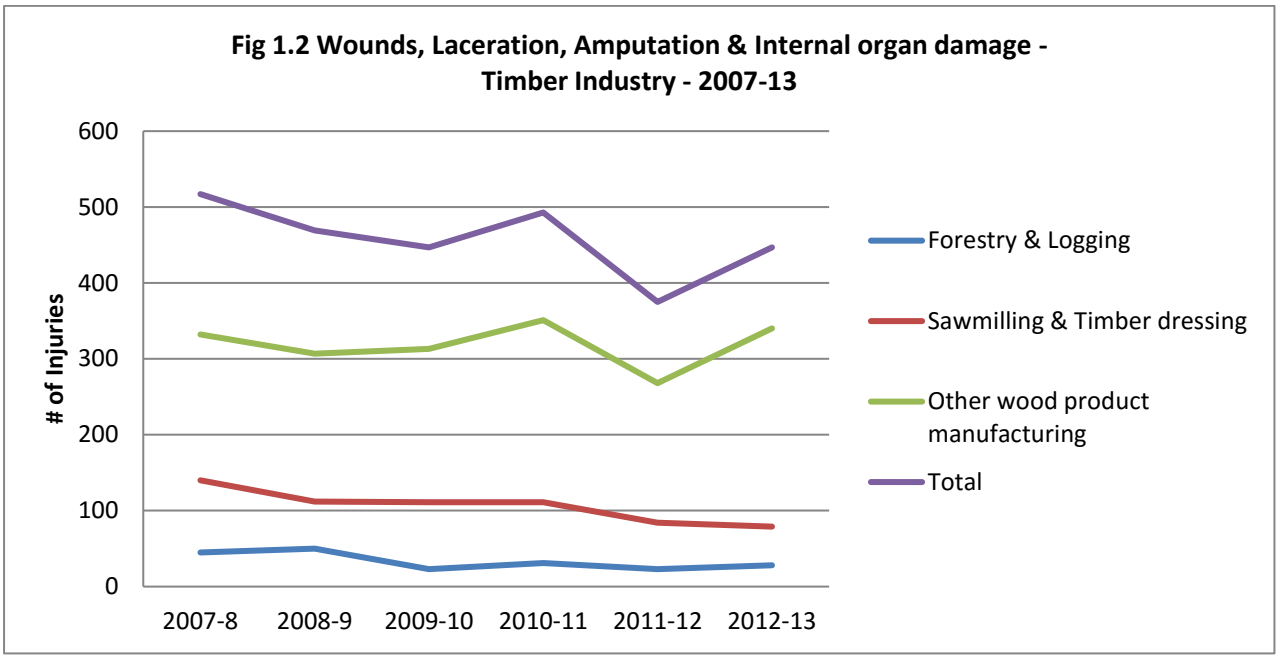


From 2003- 2014, 3,000 workers, in all industries, have lost their lives in work related incidents. The above graph shows a fatality rate of 1.61 fatalities per 100,000 workers, which is the lowest recorded rate since the commencement of the series.



Year	00-01	01-02	02-03	03-04	04-05	06-06	06-07	07-08	08-09	09-10	10-11	11-12
Log & Sawmill	720	650	690	645	610	505	590	590	490	440	430	320
Other Wood	1050	1040	1170	1195	1330	1170	1110	1185	1065	1090	1100	910
Total	1770	1690	1860	1840	1940	1675	1700	1775	1555	1520	1540	1230

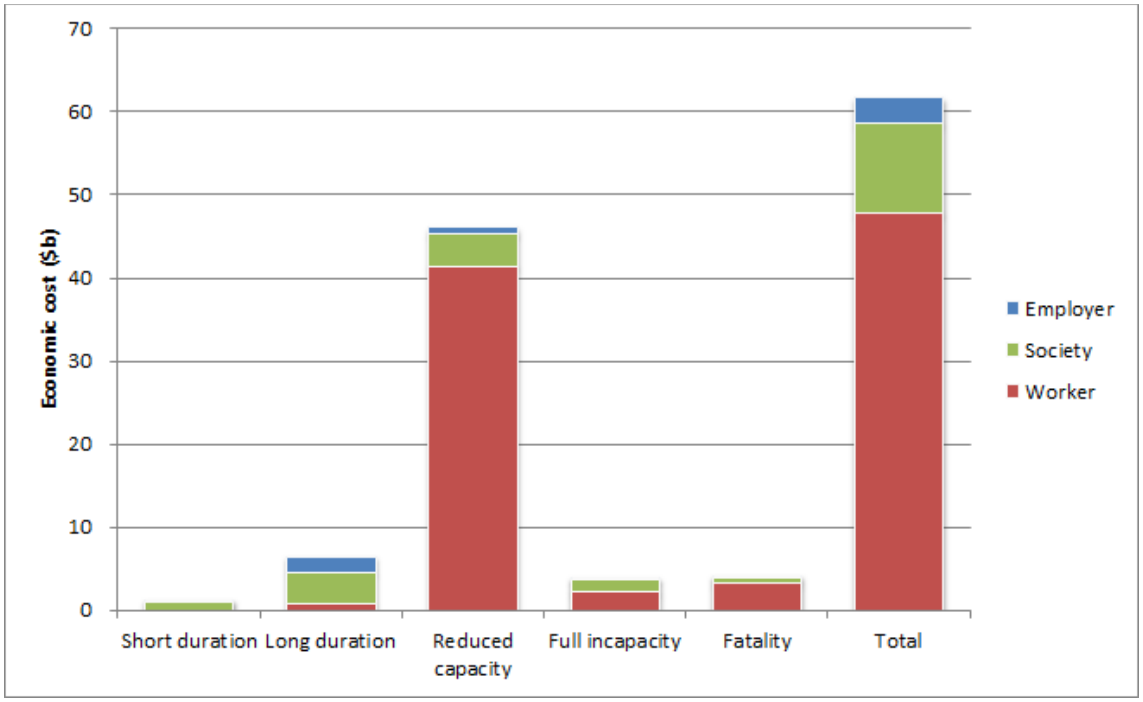
Fig 1.1 shows the serious claim incident rate by timber industry in the years 2000-2012. Since 2000, overall incident rates have decreased by slightly over 30%, with the greatest decrease coming from the logging & sawmilling sector of the timber industry, which saw a decrease of 55%. Other wood product manufacturing saw a decrease in the years 2000 - 2014 of just 13%.



	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Forest & Log	45	50	23	31	23	38
Sawmill & Dressing	140	112	111	111	84	79
Other	332	307	313	351	268	340
Total	517	469	447	493	375	447

The above graph details the injuries that are most likely to occur due to poor guarding practices. Sawmilling and Dressing has recorded a 44% decrease in relevant injuries, whilst Forest and Logging has had a 15% decrease and Other Wood product Manufacturing sectors actually recorded a 2.5% increase in injuries over the recorded period.

Fig 1.3 Distribution of total costs ($b) by economic agent and severity, Australia, 2012–13



The above graph presents the distribution of total economic costs by Employer, Worker and Society and severity category. The columns represent short and long term injuries, reduced capacity injuries, total incapacity, fatality and overall total.

5.0: What is Machine Guarding?:

Machine guarding is a safety measure, usually placed in the isolation / engineering category of the Hierarchy of Controls, on plant that serves the purpose of segregating moving parts or flying objects from personnel working on or near that plant. Guarding is also used to protect equipment from impact from such things as moving plant or product.

Machine guarding is often the first and sometimes only line of defence to protect personnel from incidents or injury.

Guarding can be used to protect personnel from the following hazards:

- Spinning components
- Noise
- Heat / Cold
- Falling product / plant / personnel
- Fall from heights
- Compressed air
- Flying objects
- Nip points
- Chemicals / Asbestos
- Lasers
- Crush points
- Confined space
- Electricity
- Dust

Moving machine parts and the product being manufactured in that machine can cause serious injury or worse if the machine guarding is not present or is inadequate for the task.

Injuries such as chemical exposure, open wounds, electrocution, falls from height of both personnel and product, burns, amputation and death are common place when poorly guarded plant is used and as a result the financial cost to Australian business is in the billions of dollars annually.

6.0: Choosing the Right Guarding:

Unfortunately each machine poses different hazards and therefore there is no "one size fits all" solution to guarding issues.

6.1 Factors to Consider

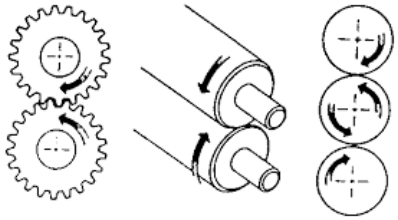
Depending on its application, machine guarding can take a variety of forms and it is common in work areas to find more than one form of guarding used in any process. Factors to be considered when selecting the appropriate type guarding should include:

- type of hazard requiring guarding (crush, heat, falling product, dust etc)
- product being manufactured
- speed of machine and / or product (high or low speed machine etc)
- access requirements
- proximity to personnel / mobile plant
- visibility requirements
- environmental conditions
- manufacturer recommendations
- strength requirements (resistance to impact etc)
- legal requirements

6.2 Examples of Hazards

6.2.1 Drawing in Hazards

A drawing in hazard is one that will drag a body part towards a nip point if contacted. This type of hazard can typically be found on conveyors, chains and sprockets, pulleys and in-running rollers such as the in-feed drive rollers on a glue spreader or a typical chain / sprocket set up.

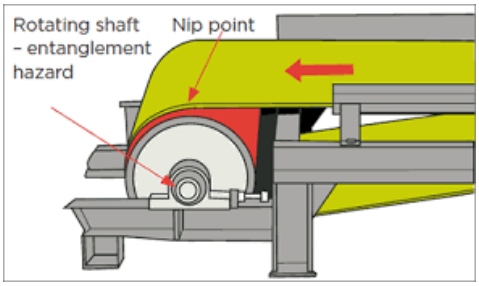


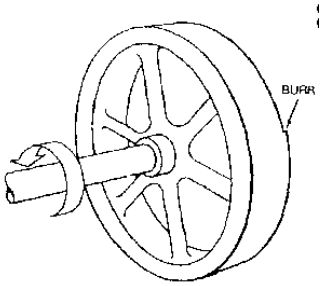
The above diagrams indicate common drawing in hazards

6.2.2 Entanglement Hazards

Entanglement involves an item such as hair, clothing, jewellery and gloves becoming caught in a moving part of a machine.

Some examples of entanglement hazards include a rotating shaft such as an axle on a pulley, a tangentially moving part such as a drive belt and pulley



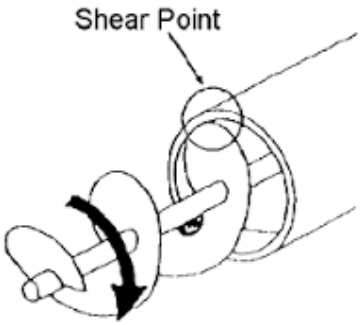


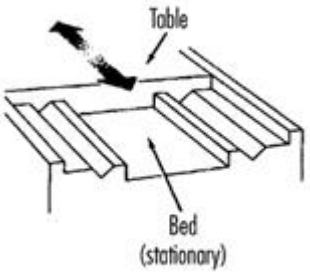
Common entanglement hazards include spinning shafts on conveyors and a burr on a fly wheel

6.2.3 Shearing Hazards

A shearing hazard involves one piece of plant moving closely to a stationary or opposite moving piece.

Parts of the human body can be exposed to shearing hazards where there are two machine parts such as the table of a panel saw and its bed or a screw and its casing.





Examples of shearing hazards include a dust auger and its cover and a moving table over a stationary bed such as a Panel Saw.

6.2.4 Cutting Hazards

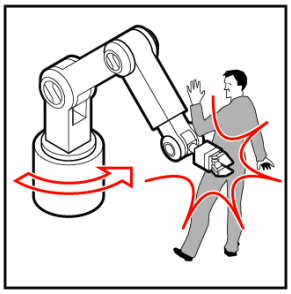
Cutting hazards are among the most prevalent hazards in the timber industry and therefore, represent one of the greatest hazards in the workplace.

The high volume use of timber related plant such as docking saws, chainsaws, lathes and drills mean the exposure to this type of hazard is extremely high resulting in a high degree of risk associated with the use of this type of plant such as laceration, amputation and puncture wounds. Even the use of simple hand tools such as Stanley knives present a significant hazard if used incorrectly.

Common cutting hazards are found in a multitude of tools used in the timber industry including rip and docking saws

6.2.5 Impact Hazards

Impact hazards are those that will hit an individual without penetrating the body. Typical examples of impact hazards in the timber industry include overhead cranes, contact with mobile plant, the booms on logging Harvesters and Feller Bunchers and automated equipment such as robots.

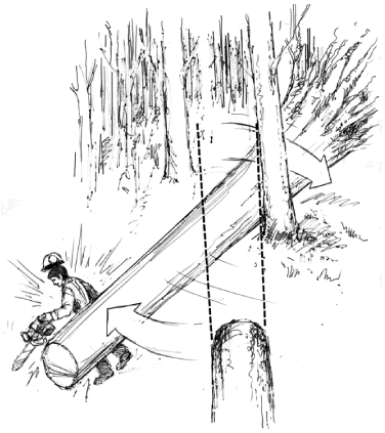


Automated robots and the booms of mobile plant present impact hazards if not adequately controlled.

6.2.6 Crush Hazards

Crush hazards differ from impact hazards in that, although the equipment may be the same, crush hazards involve a person becoming trapped between two objects whereas impact hazards involve a person being struck by a moving object.

Examples of crush hazards include a chainsaw operator being crushed between a falling tree and the ground, a Beam saw operator being pinned between the timber being ejected from the plant and a wall or stored product.

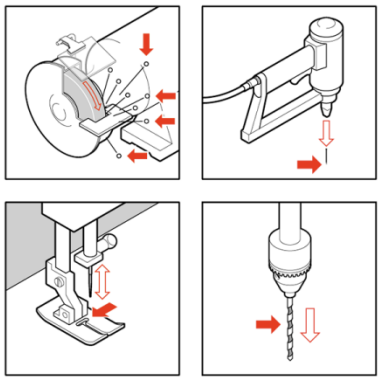


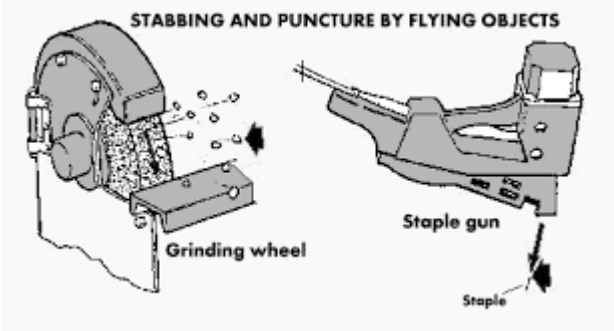
Crush hazards can be found both in the bush during logging processes as well as in the factory when working in confined areas such as Beam Saws.

6.2.7 Stabbing Hazards

Stabbing or puncturing hazards are those hazards which have the ability to penetrate the body through either flying objects or rapidly moving machine parts.

The use of a nail gun is the standout example of a stabbing hazard typically found in the timber industry.





Common stabbing hazards are found in tolls such as nail guns, drills and grinders.

6.2.8 Friction Hazards

Friction hazards are present when a surface is moving at high speed. Plant such as Grinders, Linishers and Sanders are examples of machines where friction hazards are present. Injuries consistent with contact with these hazards are generally friction burns and abrasions.

Friction hazards are frequently found on high speed, rotating plant such as belt linishers and the wheels of a bench grinder

6.2.9 Heat / Cold Hazards

Heat / cold hazards generally arise due to excessive temperatures caused by weather (metal exposure to direct sunlight) or as a cause of the contents of a piece of plant (Hot water, steam transfer pipe). Direct exposure to extreme temperatures, working in extreme temperatures for example, is also a hazard that may cause injuries such as Hypothermia, Sun burn and heat stroke.

Steam leaking from a worn flange gasket (Left) and damaged lagging protecting a hot water pipe (Right) on a press present exposure to heat hazards

6.2.10 Dust Hazards

Airborne contaminants such as vapours, gases and especially dust are major hazards within the timber industry. Not only do they present exposure hazards (inhalation, absorption etc), they also present hazards such as explosion and fire.

Long term exposure to wood dust may lead to health issues such as Asthma, Bronchitis, Throat problems and Dermatitis.

Excessive saw dust build-up indicates poor dust containment practices and increased risk of exposure not only during processing but also during housekeeping

6.2.11 Fall Hazards

Fall risks are generally present in workplaces where personnel are required to work on an unprotected elevated area or where product is stored at height such as in racking.

When considering product storage strategies, consideration must be given to the potential impact on site personnel should that product fall from its storage area.

Personnel working at height must consider the risks associated with the practice and control those risks as much as reasonably practicable.

If product is to be stored near a work area, consideration must be given to reducing the risk of that product falling, including installing mesh guarding (Left). Mezzanines must have hand rails installed, part of which may be removable to allow forklift access (Right).

7.0: Machine Guarding:

When one thinks of guarding requirements in the timber industry one usually thinks firstly of guarding machinery.

By nature and necessity the timber industry comprises of equipment that, if the working parts are contacted by humans whilst they are operating, are likely to lead to severe injury or, if all goes wrong, possibly worse.

Machine guarding in the timber industry has to be effective in both cost and application as well as practical, and, due to the wide range of equipment used in a variety of configurations, sometimes a creative approach is required to adequately guard a machine and keep people safe from injury.

7.1: Fixed Guarding:

This is the most common and preferable type of guarding in use in the timber industry due to its simplicity of installation, low manufacturing costs, low maintenance requirements and effectiveness.

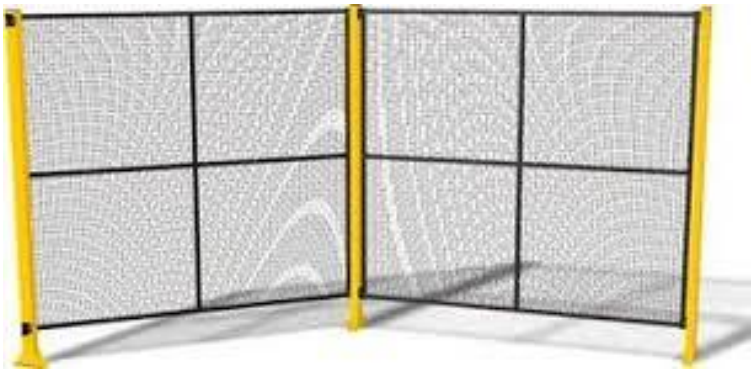


FIG.1 An example of fenced fixed guarding. This type of guarding can be used as perimeter guarding, depending on the application requirements

There are generally 2 types of fixed guarding, permanent fixed guarding and removable fixed guarding. Generally access requirements will determine if the guarding will be permanent or removable fixed guarding. If regular access is required for maintenance, cleaning or repair purposes, then removable fixed guarding is usually installed whereas if no access is required the permanent fixed guarding is used. Depending on the type of material being processed, this guarding can be made from a variety of materials such as sheet metal, timber, wire mesh or plastic. It can be constructed to suit a variety of applications, can be designed and manufactured in-house as opposed to outsourcing the manufacturing of the guard, will provide maximum protection on the condition that the materials used are of such strength to contain any object being ejected from the plant and is suitable for high production facilities. Fixed guarding cannot be electrically bridged out, as is the case with some types of interlocked guarding, and, apart from ongoing visual inspections, does not requiring regular testing.

FIG.2. The tunnel guard (Removable) and bottom housing (Permanent) on this Docking saw are examples of close proximity fixed guarding

Some of the drawbacks with using fixed guarding include possible interference with visibility, operations limitations and fixed guarding is not practicable for areas where regular access is required, such as for use on machinery where adjustments and daily maintenance may require the removal of the guarding.

In certain circumstances, fixed guarding may be required to perform the dual roles of not only preventing personnel access to the moving components of a machine but to also be of such construction that it will contain machine parts or product being ejected from the machine due to a failure of the equipment. Fixed guarding is also effective at protecting equipment from impact, for example bollards placed in front of racking in areas used by mobile plant.

Fixed guarding can be constructed as a perimeter guard for equipment that may be automated (FIG.1) or in close proximity to the area requiring guarding if the machine is not automated (FIG.2).

7.2: Adjustable Guarding:

Adjustable guarding is useful on equipment where a variety of sizes of timber require processing. This type of guarding is often seen on Panel saws (FIG. 3) in the form of a hood guard, and can be adjusted to accommodate a variety of timber thicknesses.

FIG.3. The hood guard on this Panel saw is an example of adjustable guarding. This guarding requires adjustment by the operator

The operator can easily adjust this type of guarding to the required height and can be manufactured to suit a variety of applications. The drawbacks with adjustable guarding include possible interference with visibility, does not prevent hand contact with moving parts when the plant is being used, can be expensive to repair and may require frequent maintenance. Quite often when this type of guarding is damaged it can either be left damaged of just moved out of the way altogether.

The major issue with the use of adjustable guarding is the dependence on the machine operator to set the guard at the correct height when in use. The operator may neglect to adjust the guard to the correct height, particularly if it is only to be used for a short time, if a variety of thicknesses are to be cut or if the operator is in a hurry. Ideally machine guarding, as with anything in workplace safety, should be designed to remove if possible, or if not, minimise the human element as much as reasonably practicable and it is for this reason that, while in some areas the use of adjustable guarding is the only alternative, other types of guarding should be considered prior to deciding that adjustable guarding is the only option available.

7.3: Self Adjusting Guarding:

This type of guarding automatically adjusts as the machine is operated. These are most often seen on plant such as circular saws (FIG.4). They can also be installed on pedestal drills as well as a number of other machines.

As the operator moves the timber into the machine area, or as the machine contacts the timber, the guard will self retract, exposing the blade, drill bit or other tool. In the case of a power saw, it is the bottom blade guard that will automatically retract when it hits the piece of timber being cut.

FIG.4. The bottom blade guard of this circular saw is an example of self adjustable guarding

These guards may be constructed of metal, plastic, or another material suitable for the application. The function of this type of guarding is to place a barrier between the machine operator and the danger area of the plant being used. The guarding will protect the operator from part of the cutting or drilling component whilst retracting to expose only enough of the danger area to allow it to perform its task.

The benefits of this type of guarding is that it will automatically adjust itself to allow for maximum guarding no matter the thickness of the timber being worked, as long as the timber is within the safe working limits of the equipment.

These guards are also sturdy in construction and replacement guards are usually readily available and easily installed.

Some issues with this type of guarding is that, depending on its construction, it may not provide maximum protection for the plant operator, it can inhibit visibility and may require ongoing maintenance as it is a movable part and therefore is more susceptible to damage or failure than fixed guarding.

7.4: Interlocked Guarding:

Interlocked guarding is the type of guarding that is electrically interlocked so as to prevent the guard from being opened whilst the plant is operational.

FIG.5. An electrically interlocked gate. This gate can only be opened whilst the machine is shut down.

This type of guarding is common on most newer type of equipment such as spindle moulders, high volume docking saws etc.

The interlock may be mechanical, electrical, hydraulic, pneumatic or a combination of these in nature and is ideal for situations where regular access is required for maintenance or cleaning purposes.

Advantages of interlocked guarding is that it allows for regular access and will provide maximum protection (interlock should be designed to go into a *fail to safe mode* in the event of failure). Disadvantages include requirements of regular maintenance / inspections and the possibility of interlocked to be overridden / bridged out to allow machine to operate while guarding is disarmed.

7.5: Presence Sensing Guarding

Presence sensing guards are designed to cause the plant to stop operation and enter a safe mode when a person or object enters the area being guarded. This type of guarding usually used in areas where regular access is required (e.g. machine adjustments, cleaning etc).

The two main types of presence sensing guards are:

1. Photoelectric
2. Pressure sensing

7.5.1 Photoelectric

Photoelectric guards use a beam or a curtain of light to detect the approach of a person or object towards the area being guarded. When the beam or curtain is cut, the machine will automatically shut down into a safe mode.

Such a device must be positioned far enough away from the hazardous area so as to allow sufficient time for the machine to shut down before it can be accessed.

FIG.6. Photoelectric guarding will automatically shut down a machine when the curtain is broken

7.5.2 Pressure Sensing

Pressure sensing devices, such as a pressure mat, contain sensors which, when exposed to a certain weight, activate and shut down the plant it is guarding.

For this device to be effective, it needs to be wide enough to account for a person's stride and needs to be designed and place in such a way that it effectively guards

The benefits of presence sensing guards are their simplicity of use, ease of access for operator and they do not require ongoing adjustments.

The disadvantages of use include requirement for ongoing testing, purchase and installation cost and inability to protect against machine failure.

FIG.7. Pressure sensing mats will isolate plant when stood on.

7.6: Other Types of Guarding

7.6.1 - Emergency Stop Devices

An emergency stop device is the last line of defence in machine safety and therefore needs to be maintained in good working order so there can be certainty of operation when and /or if required.

Some of the most common types of emergency stop devices in the timber industry are of the button and lanyard variety:

FIG.8. Emergency Stop Button. The button must be coloured red and if a background is present it must be coloured yellow.

Emergency stop devices should be situated in an area that is easily accessible and in an area where personnel would be expected to interact with the equipment (e.g. a work station). It should be easily activated, wired into their own safety circuit with the plant so it remains isolated from electrical or electronic circuit malfunction and should not automatically reset to working mode when activated. It must override all other functions in all operation modes of the plant

These devices must be tested on a regular basis to ensure they remain in good working order.

These emergency stop devices not only protect the worker but are also effective in preventing damage to equipment by allowing rapid shut down should a machine a malfunction occur.

7.6.2 Line Marking

While line marking, through its inability to physically prevent an incident, must be considered at the lower end of the guarding hierarchy, it is still a useful tool when highlighting zones which may have been previously identified as either a safe zone (consider designated walkways) or hazardous zone (consider designated exclusion areas).

FIG.9. Line marking and bollards used to indicated a designated walkway

This type of guarding is usually accompanied by a safety procedure to inform workers of the meaning and requirements regarding painted areas and hence generally requires training and ongoing enforcement of the procedure.

When considering line marking, thought must be given to the type of material used to perform the marking. For example, installing a pedestrian crossing across a high traffic area will require the use of a highly durable, wear resistant material consistent with the properties of products such as road marking paint. An ongoing requirement for reapplication of the line markings due to the use of inappropriate or unsuitable material often results in the markings being neglected to the point where it becomes too much of a problem to continually re-mark the area and as such re-application is either delayed or forgotten about altogether.

It is often recommended this type of guarding be used in conjunction with another, more physical type of barrier such as the installation of bollards along a walkway (See FIG.6).

7.6.3 Two Handed Operation

This type of machine safeguard is common on single stroke devices such as punches and pop up saws and in general should only be considered as a control measure after other controls such as fixed, interlocked or photoelectric guarding have been ruled out as a practical guarding solutions.

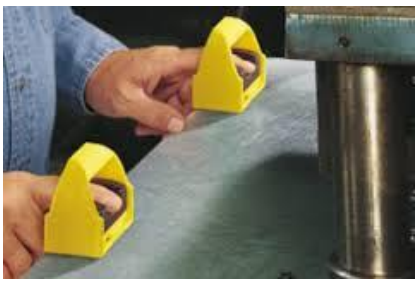


FIG.10. Two handed operation featuring button shrouds

This type of guarding will only protect the machine operator and will not guard other people from contact with the moving part.

Two handed controls should be placed far enough apart so they have to be operated using two hands, should be covered to prevent accidental operation (See FIG.10), need to be activated at the same time and must be designed so as to need to be pressed during the entire operation of the machine.

7.6.4 Personal Protective Equipment

Personal protective equipment , or PPE, is a form of guarding that, unlike all other types of guarding, is worn by the machine operator. Items such as face shields, gloves, safety boots and overalls, all provide a barrier between the worker and the hazard.

PPE should only be considered as a hazard control measure after all other control actions have been considered and declared impractical.

When selecting PPE to minimise a risk to health and safety, the business or employer must make sure the PPE is:

- suitable for the nature of the work and any hazard associated
- a suitable size and fit and reasonably comfortable for the person to wear
- maintained, repaired or replaced so it continues to minimise the risk to the worker
- used or worn by the worker, so far as is reasonably practicable.

PPE is one of the least effective ways of controlling risks to health and safety and should only be used:

- when there are no other practical control measures available
- as an interim measure until a more effective way of controlling the risk can be used
- to supplement higher level control measures

FIG.11. Example of the types of PPE used in the timber industry

It is the responsibility of the PCBU to supply all required PPE unless provided by another PCBU such as a principle contractor.

It is illegal for a PCBU to charge or levy a worker for the supply of PPE or cause a worker to be charged.

8.0: Chemical Guarding:

The use of chemicals are a major factor in the timber industry.

From Liquid Petroleum Gas (LPG) and Diesel for mobile plant, to CCA (Copper Chrome Arsenic) and other substances required for the treatment of timber, to oils required for lubrication of equipment , and lacquers for finished timber, each chemical contains its own hazards and therefore a range of guarding options must be considered when purchasing chemicals.

8.1 General Storage Requirements

While each storage requirement may vary depending on the chemical, environment, proximity of personnel and mobile plant etc, general requirements include:

- Hazardous substances should be stored in a cool, lockable, enclosed area with adequate ventilation to prevent fume build-up.
- Store incompatible substances (e.g. corrosives with flammables) separately to avoid risk of mixture
- Ensure labelling is easily read and relevant to chemical.
- Ensure all chemical containers, including those used for decanting, are adequately labelled. At a minimum, the labelling should contain the name of the product and the risk and safety phrases.
- Limit access to chemicals only to authorised personnel.
- Store flammables, explosive or toxic substances away from sources of spark, heat or flame.
- Regularly check containers for damage or leaks.
- Ensure correct and appropriate procedures are in place for adequate storage, transport and use of chemicals. Also ensure adequate training is provided in those procedures.
- Ensure appropriate emergency measures are in place including appropriate fire fighting equipment, spill kits and evacuation procedures.
- Ensure chemical storage areas are as far away from risk of mobile plant impact as much as reasonably practicable. If a storage facility does need to be near a traffic area (e.g. Diesel fuel tank), adequate impact protection must be installed.

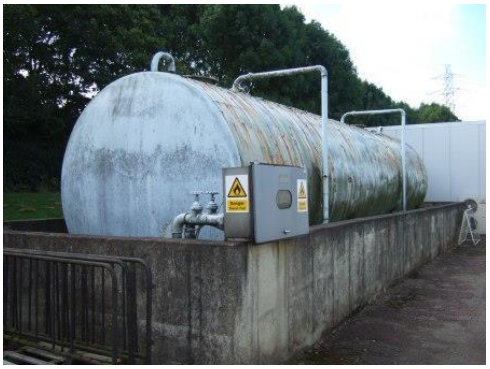


FIG.12. The bunding on this fuel tank not only prevents an uncontrolled spill but also acts a barrier between mobile plant and the tank

9.0: Powered Mobile Plant Guarding:

The use of powered mobile plant is crucial to the ongoing viability of businesses in the timber industry.

From the use of forklifts in almost all aspects of the industry, to heavy duty logging equipment, efficient and safe use of mobile plant plays a vital part in the day to day operations of businesses employed in the industry.

Due to the heavy and varied use of mobile plant, the operator is constantly exposed to a range of risks associated with the use of the plant including:

- Plant roll over
- Objects striking plant
- Operator being ejected from plant
- Plant contacting persons
- Mechanical failure

Other risk factors include noise, dust, fall risk (while entering or exiting), vibration and ergonomics.

The person with management or control of powered mobile plant at a workplace must ensure:

- that a suitable combination of operator protective devices are provided, maintained and used
- that no person other than the operator rides on the plant unless they are provided with the same level of protection as the operator
- that the plant does not collide with pedestrians or other powered mobile plant
- that where there is a risk of collision, that the plant has a warning device to warn other persons of the risk.

9.1 Roll Over Protection Structure (ROPS)

ROPS is a protective canopy designed to protect the plant operator in 360 - degree roll over situation.

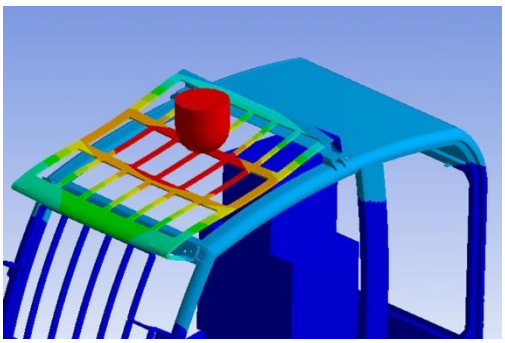
This type of structure is commonly found installed on logging equipment such as Harvesters and Skidders and is designed to absorb the energy created by the impact of a roll over and thus protects the operator in the event of a roll over. Forklifts are also fitted with a ROPS.

9.2 Falling Object Protection Structure (FOPS)

FOPS are designed to protect an operator against being struck by falling objects such as tree branches and other types of timber.

FOPS is normally designed as a cage like structure around the operators cabin that prevents objects from penetrating the cabin and striking the operator.

FIG.13 Example of an Excavator fitted with a ROPS canopy

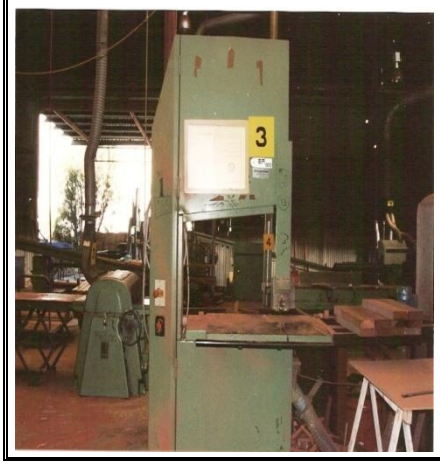


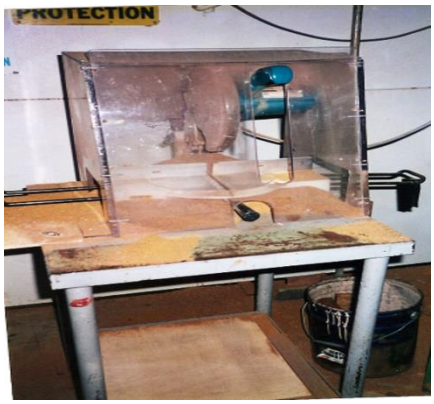
`FIG.14. Example of a FOPS detailing the impact protection properties of the structure

10.0: Examples of Best Practice Guarding:

The timber industry uses a wide variety of plant in a wide variety of configurations.

The types of plant outlined below represent machines typically used in the timber industry. Hazards associated with each plant are detailed as well as control options. In addition to the controls outlined below, other control options relevant to each plant includes training, supervision, information, PPE and preventative maintenance

PLANT	HAZARDS	CONTROLS
10.1 Large Bandsaw 	➢ Electricity ➢ Laceration ➢ Entanglement ➢ Crush ➢ Dust ➢ Flying Objects ➢ Plant failure ➢ Noise	➢ Top and bottom wheels are guarded to prevent access. ➢ Mesh guarding fitted around blade / band to prevent access by operators. ➢ Distance of guarding is an arms length from the blade / band. ➢ In-feed and out-feed openings can be adjustable to suit the thickness of timber cut. ➢ Safety procedure is fitted. ➢ Motor drive belt / chain is guarded. ➢ Lockable isolation switch is fitted. ➢ Roller drives are guarded. ➢ Operator is a distance from the saw. ➢ Emergency stop switch is fitted. ➢ Dust extraction is fitted.
10.2 Small Bandsaw 	➢ Laceration ➢ Crush ➢ Entanglement ➢ Dust ➢ Electricity ➢ Flying Objects ➢ Noise	➢ Top and bottom wheels are guarded to prevent access. ➢ Adjustable box tunnel guard is fitted around the blade / band. Additional Perspex adjustable guarding is fitted. ➢ Motor drive belt is guarded. ➢ Emergency stop switch is fitted. ➢ Safety procedure is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted

PLANT	HAZARDS	CONTROLS
10.3 Rip Saw 	➢ Laceration ➢ Crush ➢ Entanglement ➢ Dust ➢ Electricity ➢ Flying Objects ➢ Noise	➢ Top adjustable hood is fitted which completely covers the blade and adjust up and down when timber is ripped. ➢ Riving knife is fitted at the back of the blade. ➢ Base of blade is guarded. ➢ Motor drive belt is guarded. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.4 Slide Compound Saw 	➢ Laceration ➢ Electricity ➢ Dust ➢ Flying objects ➢ Noise	➢ Perspex adjustable guard is fitted around the blade which totally guards the blade in its upper housed position and adjusts out of the way when the timber is cut. ➢ Spring is fitted to bring the saw to its upper housed position. ➢ Lockable isolation switch is fitted to prevent unauthorised use. ➢ Dust extraction is fitted.
10.5 Drop Saw 	➢ Laceration ➢ Electricity ➢ Dust ➢ Flying objects ➢ Noise	➢ Perspex adjustable guard is fitted around the blade which totally guards the blade in its upper housed position and adjusts out of the way when the timber is cut. ➢ Perspex or mesh box guarding can be fitted over the saw for extra guarding. ➢ Spring is fitted to bring the saw to its upper housed position. ➢ Lockable isolation switch is fitted to prevent unauthorised use. ➢ Dust extraction is fitted.

PLANT	HAZARDS	CONTROLS
10.6 Pneumatic Docking Saw 	➢ Laceration ➢ Electricity ➢ Dust ➢ Flying objects ➢ Noise	➢ Blade is totally guarded in its lower housed position by fixed guarding and locked access doors. ➢ Tool to open access door is positioned a distance from the saw so that its run down time will be completed when the access door is opened. ➢ 2 handed operation so operator cannot contact the blade. ➢ Orange tunnel guard is fitted on the bench to prevent another employee contacting the blade. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.7 Pull Docking Saw  	➢ Laceration ➢ Electricity ➢ Dust ➢ Flying objects ➢ Noise	➢ Saw blade is completely guarded in its housed position to prevent contact with the blade. ➢ Mesh duck bill guard is fitted to guard the saw in its cutting position. ➢ Retraction device (weight, spring or coil) is fitted to pull the saw back to its housed position after use. ➢ Front of blade is 25mm behind the fence in its housed position. ➢ Front of blade stops 100mm before the end of the bench. ➢ Emergency stop switch is fitted. ➢ Safety procedure is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted. ➢ Saw blade is completely guarded in its housed position to prevent contact with the blade. ➢ Adjustable guard fitted to guard the blade in its housed and cutting position.

PLANT	HAZARDS	CONTROLS
10.8 Thicknessor / Planer 	➢ Laceration ➢ Electricity ➢ Dust ➢ Flying objects ➢ Noise	➢ Head and knives are guarded to prevent contact. Guarding is bolted to prevent easy access during its run down time. ➢ Perspex extension guard is fitted at the in-feed to prevent access to head / knives. ➢ Anti – kickback fingers ➢ Drive belt is guarded. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.9 Jointer 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Head and knives are guarded by a kidney adjustable guard to prevent contact. ➢ Head and knives are guarded at the back of the fence and the underside of the bed. ➢ Push stick or jig is fitted to push timber through the machine. ➢ Warning signs are fitted. ➢ Drive belt is guarded. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.10 Wall / Panel Saw 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Fixed guarding fitted around the blade. ➢ Adjustable guard fitted at the front of the blade. This guard slides back once it hits the board to allow the blade to cut and then slides back over the blade once the cut is completed. ➢ Riving knife is fitted. ➢ Emergency stop switch is fitted. ➢ Warning signs are fitted. ➢ Lockable isolation switch is fitted

PLANT	HAZARDS	CONTROLS
10.11 Panel Saw 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Top adjustable hood is fitted which is adjusted to suit the thickness of board / timber put through the saw. ➢ Riving knife is fitted at the back of the blade. ➢ Base of blade is guarded. ➢ Push stick is fitted and used when ripping short timber or removing off-cuts from around the blade. ➢ Motor drive belt is guarded. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.12 Beam Saw 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise ➢ Manual handling	➢ Pressure bar is fitted at the in-feed of the saw which stops the saw if some ones hand is under. ➢ Beam guarding is fitted at the in-feed of the saw which directs the blade back to its housed position if the beam is broken. ➢ Interlock guarding is fitted around the blade in its housed position which does not allow the blade to be accessed until it has stopped. ➢ Back of beam saw is guarded by fence guarding to prevent access. ➢ Emergency stop switches are fitted. ➢ Vacuum table is fitted at the front to facilitate ➢ Lockable isolation switch is fitted.

PLANT	HAZARDS	CONTROLS
10.13 Multi Saw 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Interlock hood is fitted to guard the rollers, heads and knives. This hood does not open until heads have stopped. ➢ Hood is also a noise enclosure to reduce noise levels. ➢ Heads / knives are guarded inside hood. ➢ Adjustments are made from outside the hood. ➢ Emergency stop switches are fitted. ➢ Motor drive belts are guarded. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.14 6 Headed Moulder 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Fixed guarding is fitted over the top and bottom head. ➢ Mesh guarding is fitted around side heads. ➢ Motor drive belts are guarded. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.15 Vertical Spindle Moulder 	➢ Laceration ➢ Entanglement ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Head / knives are guarded by fixed guarding and the feed roller. ➢ Base of the machine is guarded. ➢ Head lock foot pedal is fitted. ➢ Brake foot pedal is fitted. ➢ Emergency stop switch is fitted. ➢ Motor drive belts are guarded. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.

PLANT	HAZARDS	CONTROLS
10.16 Opticut Docking Saw 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Fixed guarding is fitted around the blade to guard it in its housed and cutting position. ➢ Hood is interlocked so the blade will not come out of its housed position if the hood is open. ➢ Tunnel guard is fitted at the out-feed of the saw to prevent access to the blade. ➢ Emergency stop switch is fitted. ➢ Saw can operate automatically as it docks chalk marks on the timber ➢ Adjusting scissor lift table is fitted to facilitate manual handling. ➢ Lockable isolation switch is fitted. ➢ Dust extraction is fitted.
10.17 Chain Morticer 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Mesh bench guarding is fitted to prevent contact with chain. ➢ Emergency stop switch is fitted. Lockable isolation switch is fitted
10.18 Multi - Router 	➢ Laceration ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Tooling is completely enclosed. ➢ Access door is interlocked which stops the tooling and applies the brake if the door is opened. ➢ If Black bumpers hit anyone, the machine automatically stops. ➢ If anyone stands on pressure mat machine stops. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted.

PLANT	HAZARDS	CONTROLS
10.19 Vertical Belt Sander 	➢ Laceration ➢ Entanglement ➢ Electricity ➢ Crush ➢ Dust ➢ Flying objects ➢ Noise	➢ Sanding belts and moving parts are totally enclosed. ➢ Emergency stop bar is fitted at the front of the machine. ➢ Emergency stop switch is fitted. ➢ Lockable isolation switch is fitted.
10.20 Glue Spreader 	➢ Entanglement ➢ Electricity ➢ Crush ➢ Chemicals	➢ Mesh interlocked guarding fitted over rollers. If guarding is lifted, rollers stop. ➢ Emergency stop bar fitted at the in-feed of the machine. ➢ Warning signs fitted. ➢ Emergency stop and lockable isolation switch is fitted. ➢ Training in Safe chemical handling
10.21 Drill / Borer Machine 	➢ Laceration ➢ Electricity ➢ Crush	➢ Perspex guarding fitted around drills to prevent laceration. ➢ Perspex guard over clamp to prevent crush injury.

Appendix I: Health and Safety Duties:

I.I PCBU - A PCBU must, as far as reasonably practicable, ensure the health and safety of workers and other people.

These obligations include:

- safe systems of work
- safe use of plant, structures and substances
- adequate facilities for the welfare of workers
- notification and recording of workplace incidents
- adequate information, training, instruction and supervision
- compliance with requirements under the Work Health and Safety Regulation
- effective systems for monitoring the health of workers and workplace conditions
- a safe work environment
- maintain the premises used for accommodation for workers, if required

A PCBU has further obligations if involved in specific kinds of activities like:

- the management and control of workplaces, or fixtures, fittings or plant at workplaces
- the design, manufacture, import or supply of plant, substances or structures
- installation, construction or commissioning of plant or structures.
- PCBUs must also have meaningful and open consultation about work health and safety with workers, health and safety representatives, and health and safety committees.
- As a PCBU you must also consult, cooperate and coordinate with other PCBUs if you share duties.

I.II Primary Duty Of Care

A PCBU has a primary duty of care to ensure workers and others are not exposed to a risk to their health and safety.

A PCBU owns this duty of care when as a PCBU they:

- direct or influence work carried out by a worker
- engage or cause to engage a worker to carry out work (including through sub-contracting)
- have management or control of a workplace

A PCBU must also ensure that the health and safety of others is not put at risk from work done as part of the business

I.III Duties of PCBU – involved in the management of or control of workplaces

The PCBU of the workplace must ensure, so far as is reasonably practicable, that the workplace, the means of entering and exiting the workplace and anything arising from the workplace are without risks to the health and safety of any person.

I.III Duties of PCBU – involved in the management of or control of fixtures, fittings or plant at a workplace.

The PCBU must ensure, so far as is reasonably practicable, that the fixtures, fittings and plant are without risks to the health and safety of any person.

I.IV Duties of PCBU – as a designer, manufacturer, supplier or importer.

A PCBU in relation to plant, substances or structures that are to be used, or could reasonably be expected to be used, as, or at, a workplace must ensure that the design, manufacture, import or supply is without risk to health and safety of persons who may be affected. This includes provision of relevant information.

I.V Duties of PCBU – that installs, constructs or commissions plant or structures.

The PCBU must ensure that the installation, construction or commission is without risk to health and safety of persons who may be affected by these activities. Duties of Officers (of a PCBU) – e.g. director of a company

I.VI Officers

Where a PCBU has a health and safety duty, an officer of the PCBU is required to exercise 'due diligence' to ensure the PCBU meets that duty. Due diligence means taking reasonable steps:

- To gain and update knowledge of WHS matters;
- To understand the nature of the business/undertakings operations and the general hazards and risks involved;
- To ensure the PCBU has appropriate resources for eliminating/minimizing risks, and that these resources are actually used;
- To ensure the PCBU has processes for receiving, reviewing and responding to information about incidents, hazards and risks; and
- To ensure the PCBU implements processes for complying with their duties, such as: - Consultation; - Providing training and instruction; and reporting of notifiable incidents

I.VII Workers

Take reasonable care to ensure acts or omissions do not adversely affect the health and safety of others; Comply with reasonable instructions from the PCBU to assist them in complying with the WHS Act; and Co-operate with policies or procedures relating to health and safety that the workers have been notified of.

I.VIII Self Employed Persons

Ensure their own health and safety (as far as reasonably practicable) while at work. Self-employed persons are also considered to be PCBUs.

I.IX Others e.g. Visitors

Take reasonable care for their own safety; Take reasonable care to ensure their acts or omissions do not adversely affect the health and safety of other persons; and Comply with any reasonable instructions from a PCBU.

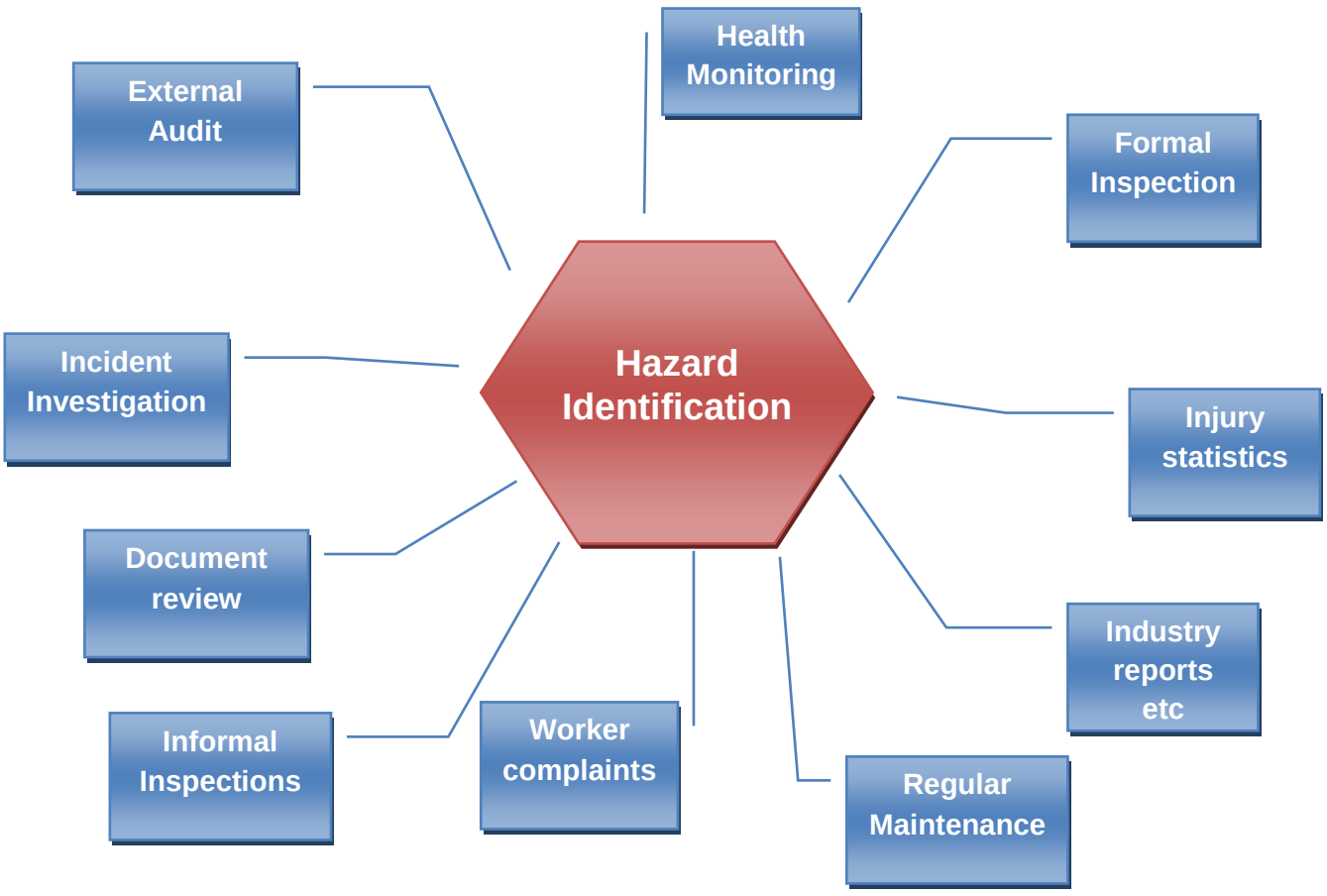
Appendix II: Risk Management:

The risk management process is a legal obligation for all businesses and it forms the foundation for all work, health and safety activities.
WHS legislation requires that all foreseeable workplace hazards be controlled as far as reasonably practicable.
Risk management comprises of 4 components: Hazard identification, risk assessment, risk control and review.

II.I Hazard Identification:

Hazard identification is the process of, through either formal or informal, proactive or reactive practices, pinpointing areas within the business that pose a risk to the health, safety and welfare of workers.

.



II.II Proactive Practices

Proactive hazard identification is the practice of identifying hazards before they have the opportunity to adversely impact the workplace. Ideally, a workplace should have the goal of identifying all hazards and controlling as much as reasonably practicable before it causes injury or illness to personnel.

Examples of proactive identification exercises include:

- Regular hazard identification exercises (Formal & Informal)
- Hazard reports
- Health monitoring (Pre event)
- Worker reports
- Industry alerts, newsletters, reports etc.
- External audits
- Regular maintenance

II.III Reactive Practices

Reactive hazard identification is a hazard identification exercise conducted after an incident has occurred.

Examples of reactive exercises include:

- Incident reports
- Incident investigation
- Regulatory body notices (SafeWork NSW etc)
- Health monitoring (Post event)

II.IV Risk Assessment

Risk assessment is the process where an identified hazard is evaluated to measure the impact it is likely to have on the workplace should it interact with personnel or plant at any time.

While, under harmonised WHS legislation, a risk assessment is not a mandatory part of the risk management process, there are still areas where a risk assessment is required.

A risk assessment is required where:

- there is uncertainty about how a hazard may result in injury or illness
- the work activity involves a number of different hazards and there is a lack of understanding about how the hazards may interact with each other to produce new or greater risks
- changes at the workplace occur that may impact on the effectiveness of control measures.
- for high risk activities such as entry into confined spaces and live electrical work.

A typical risk assessment examines the likelihood of interaction with a hazard and consequences of that interaction. A risk matrix is a useful tool when determining the risk rating of a hazard.

While there are a wide variety of risk matrix available, the following matrix is one of the more popular and user friendly tools used.

Below is a typical Risk Matrix used to determine the likelihood of interaction with the hazard and the consequences of that interaction to find the risk rating to determine risk level.

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

To assist in the accurate assessment of the risk, below is an example of the terminology generally used to accurately classify the hazard being assessed.

Consequences		Likelihood	
Term	Meaning	Term	Meaning
Insignificant	No injury	Rare	May occur in exceptional circumstances
Minor	Minor injury - no lost time	Unlikely	Not likely to occur
Moderate	Lost time injury	Possible	May occur
Major	Serious injury	Likely	Likely to occur
Severe	Death / permanent disability	Almost certain	almost certain to occur

Once the risk level is determined, this will then allow the assessor to implement the appropriate response level when considering control options .The below example indicates a typical response plan relevant to the risk level.

Risk Level	Typical Response
Extreme	Immediate action required. Isolate area immediately and report. develop a mitigation plan. To be monitored by senior management to reduce risk as much as reasonably possible
High	A mitigation plan shall be developed and authorised by area manager or supervisor to reduce the risk to as low as reasonably practical. The effectiveness of risk control strategies shall be monitored and reported to management and relevant committee.
Moderate	A mitigation plan shall be developed. Control strategies are implemented and periodically monitored.
Low	Manage by documented routine processes and procedures, monitor periodically to determine situation changes which may affect the risk

II.V Risk Control and Monitor

When considering risk control options, consultation with relevant stakeholders remains a vital component in determining the most effective way to eliminate or mitigate a hazard.

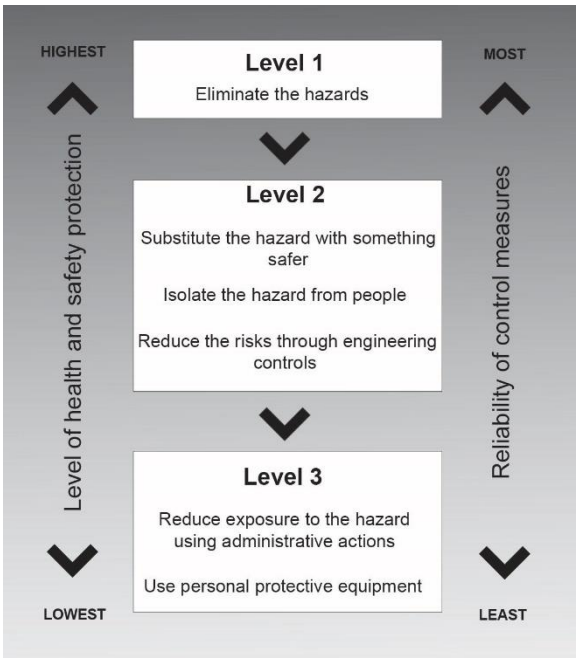
Some hazards are straight forward and easy to fix while others may take considerable planning and investment. For the latter hazard, interim controls are often implemented to

reduce the risk of injury while permanent control options are designed. It is common for more than one control option to be used when mitigating a hazard.

When considering the appropriate control option, the hierarchy of controls should be used to ensure the most effective control option(s) have been chosen.

II.VI Hierarchy of Controls

The Hierarchy of Controls are control options ranked from the most effective option (Elimination) to the least effective (PPE).



When considering the appropriate control option, stakeholders should use the hierarchy of controls to ensure the hazard has been controlled as much as reasonably practicable.

PCBU's must always attempt to eliminate a hazard as it represents the most effective control. If elimination is not reasonably practicable, then a PCBU must work through the hierarchy of controls until the most effective, reasonable control can be implemented.

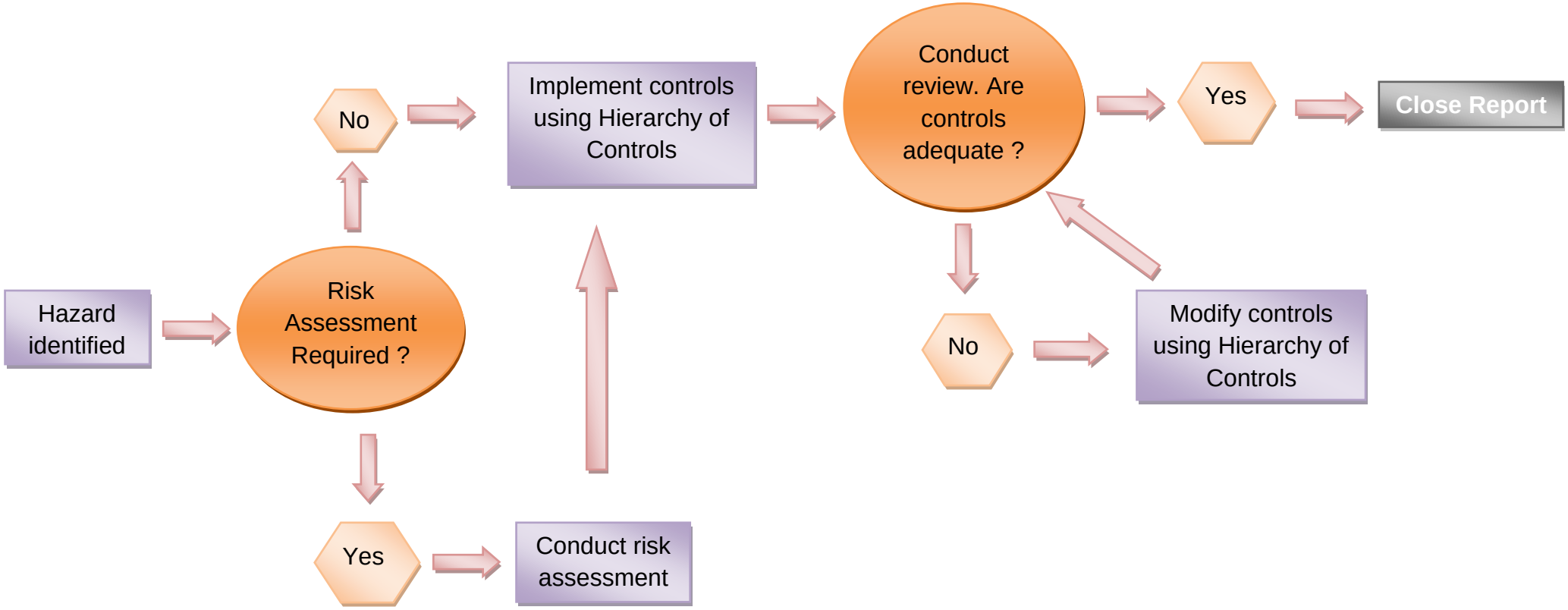
II. VII Review

After implementation, a control action must be reviewed to ensure it has achieved its desired result, has adequately controlled the hazard and has not introduced a new hazard.

If issues are identified with the controls, The stakeholders should again go through the risk management process and consider additional or alternative control actions.

The following flow chart outlines the risk management process.

II.VIII Risk Management Flow Chart



Appendix III: Consultation:

Consultation is a vital component of workplace safety as well as being a legislative requirement.

A PCBU must consult, as far as reasonably practicable, with workers who carry out work for that business or undertaking and who are likely to be affected by decisions made by that PCBU.

Effective consultation leads to:

- greater awareness of business activities, philosophies and goals.
- increased production and attendance due the worker feeling their views are valued
- increased safety awareness and knowledge leading to an increase in hazard reporting and a decrease in workplace incidents and injuries.

A PCBU must consult with workers when:

- identifying hazards and assessing risks arising from the work carried out or to be carried out „
- making decisions about ways to eliminate or minimise those risks
- making decisions about the adequacy of facilities for the welfare of workers
- proposing changes that may affect the health or safety of your workers, and
- making decisions about procedures for consulting with workers; resolving health or safety issues
- monitoring health of your workers
- monitoring the conditions at the workplace
- providing information and training for your workers.

A PCBU must take workers views into account when making decisions regarding workplace health and safety as well as advise workers of outcomes of any consultation in a timely manner.

II. I Method of Consultation

The WHS Act does not require a PCBU to reach agreement with workers regarding the consultation process, but doing so will assist in making the process more effective and will encourage worker participation.

If a consultation agreement has been reached, it must be documented and followed.

When choosing an appropriate consultation mechanism, the following factors must be considered:

- size and structure of the business
- nature of the work that is carried out
- nature and severity of the particular hazard or risk
- nature of the decision or action, including the urgency to make a decision or take action
- availability of the relevant workers and any health and safety representatives

- work arrangements, such as shift work and remote work
- characteristics of the workers, including languages spoken and literacy levels.

III.II Health and Safety Representative

A worker may request to conduct an election of a health and safety representative (HSR) to represent them in WHS matters. In this instance, the PCBU must establish workgroups to facilitate the election.

Where a HSR is elected, they must be consulted in areas of workplace health and safety as to allow them to report back to their workgroup.

It is not compulsory for a HSR to attend a formal training course unless they request it. If requested, the PCBU must allow the HSR to attend such a course.

III.III Health and Safety Committee

A health and safety committee allows workers from multiple workgroups to work together to develop and review workplace policies and procedures.

A person conducting a business or undertaking must establish a health and safety committee within two months after being requested to do so by 5 or more workers, or by a health and safety representative, at the workplace.

Health and safety representatives may choose to be members of the health and safety committee. In total, at least half of the members of the committee must be workers who are not nominated by management.

If you and your workers cannot agree about the health and safety committee in a reasonable time, either party can ask the regulator to appoint an inspector to decide on the make-up of the health and safety committee, or whether it should be established at all.

Health and safety committees must meet at least every 3 months.

III.IV Documentation

While consultation is not required to be documented, it is recommended that records of consultation be maintained so as to provide evidence of consultation and compliance with legislative requirements.

Consultation records should contain the following information:

- name of persons present
- safety issue discussed
- decisions made
- action taken by whom and agree timeframe
- when the action has been completed