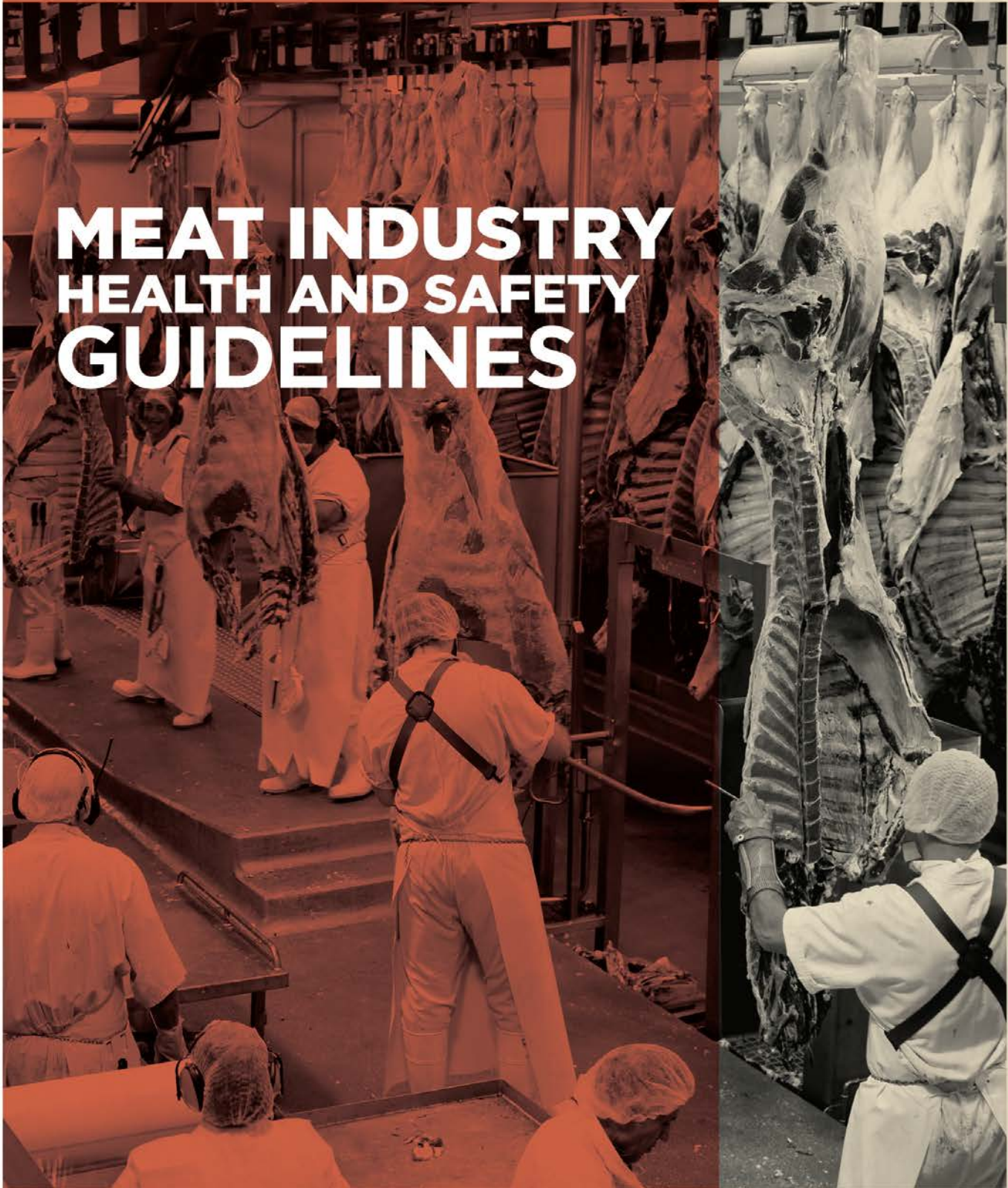


# MEAT INDUSTRY HEALTH AND SAFETY GUIDELINES



*This document represents guidance only in respect of managing workplace health and safety in the meat industry. It is not legal advice and does not replace or amend an individual or collective employment agreement or an employer's health and safety policy. Neither the Meat Industry Association Inc or the Meat Industry Health and Safety Forum and its members, take responsibility for the results or any actions taken on the basis of the information contained in these Guidelines, or for any error or omissions.*

*The Meat Industry Health and Safety Forum acknowledge the support of the New Zealand Industry Training Organisation (NZITO) in writing of these guidelines.*

# SECTION 1: INTRODUCTION

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# SECTION 1: INTRODUCTION

## 1 INTRODUCTION

### 1.1 WELCOME

Welcome to the Meat Industry Health and Safety Guidelines developed by the Meat Industry Health and Safety Forum and approved by the Meat Industry Association of New Zealand Inc.

These guidelines have been developed as a health and safety resource for people working in the meat industry in New Zealand. They are easy to follow and refer to and address many of the challenges we have in the meat industry today. When you go through the resource guide you will note that there are text boxes referring to practical advice, responsibilities and sources of further information.

### 1.2 ABOUT THE NEW ZEALAND MEAT INDUSTRY

The New Zealand meat industry produces 13% of our nation's exports by value – after dairying we are New Zealand's second largest export industry. Employing approximately 24,000 people working in more than 60 processing plants around the country, and earning over \$6 billion in export revenue, we are a major contributor to New Zealand's economy.



The New Zealand meat industry processes approximately 21 million lambs, 4 million sheep and 4 million cattle and calves each year. Approximately 85% of the production is exported to overseas destinations, with 90% of this production being processed into value-added products.

Being such a key contributor to the economy, it is vitally important that we ensure the safety, health and wellbeing of persons working within our industry sector. Historically, the New Zealand meat industry has experienced high injury rates. There has been a recent trend of injury rates decreasing and industry is keen to ensure that injury rates continue to drop. Injury and other harm create undue pain and suffering on our workforce and a burden on the industry as a whole.

### 1.3 INJURY TRENDS

There are some clear trends that we can identify within our industry when we look back over time. These include the most common type of injuries:

1. Soft tissue injury - i.e. contusion, sprain or strain.
2. Laceration or puncture wounds.
3. Gradual onset injury - these are injuries (or Muscular Skeletal Disorders) that occur over time and are often linked to roles that require extensive force and repetition.

# SECTION 1: INTRODUCTION

We can also identify trends in the part of the body where the majority of injuries occur:

1. Shoulder.
2. Hand and wrist.
3. Back and spine.

If we want to improve our injury rates and ultimately ensure the safety and wellbeing of our workers, we need to focus our efforts and look at what hazards we are faced with and then put in place robust controls to reduce the likelihood of injury.

We need to acknowledge that the meat industry today does have inherent hazards - hazards we are unable to eliminate at this point in time, for example the use of knives and cutting equipment and the livestock themselves.

However, many of the injuries that occur within the New Zealand meat industry follow a common pattern. Let's quickly look at some examples:

- Using a blunt knife - excess need for force to cut product; combine this with repetition of job task results in increased muscle loading leading to Musculoskeletal Disorders (MSDs) such as Tendonitis.
- Not wearing correct Personal Protective Equipment (PPE) may result in a run through cut with knife and hand, or a finger laceration.
- Incorrectly operating a band saw - poor technique or distraction may result in finger or hand laceration.

We also note that a large number of injury claims within our industry are attributed to 'unclear cause'. This suggests that those involved may not be investigating or documenting injuries in sufficient detail to establish the root cause. To improve things in the future, we need to be honest and open enough to look at the past. This guideline will give you the information and tools to assist you and your company to make positive steps in managing workplace health and safety issues, with the ultimate goal to ensure the safety of all persons working in the New Zealand meat industry.



We all have a role to play in improving workplace health and safety in our industry.

Be aware that these Guidelines cannot contain all the answers to every hazard or danger in each workplace and cannot identify all the practicable steps that can be taken. It is up to each employer to determine what actions are needed to keep their workplace safe. Note that specialist areas such as boiler-rooms, water-treatment and effluent treatment plants are not specifically covered in these Guidelines.

We trust you find these Guidelines useful and that they will assist you to proactively manage health and safety at your workplace.

# SECTION 1: INTRODUCTION

## 1.4 A KEY TO USING THIS GUIDE

The following symbols appear throughout these guidelines to help users quickly locate the information they need.



### **PRACTICAL ADVICE:**

Provides practical advice on safe work practice and controlling common hazards.



### **HAZARDS:**

Identifies common hazards associated with work activities – there may be additional hazards in your workplace that also need to be controlled.



### **EMPLOYER'S RESPONSIBILITIES:**

Provides a guide to the legal responsibilities of employers.



### **EMPLOYEE'S RESPONSIBILITIES:**

Provides a guide to the legal responsibilities of employees.

# SECTION 1: INTRODUCTION



## **THE LAW:**

Provides reference to the specific legal requirements for the work activities.



## **FURTHER INFORMATION:**

Provides a list of additional resources with further information on the work activity



# SECTION 2: MANAGING HEALTH & SAFETY

## 2 MANAGING HEALTH & SAFETY

There are lots of good reasons for good management of health and safety in your workplace. A healthy and safe workplace is better to work in and more productive. Both employers and workers benefit.

Think about the losses that can be caused by workplace injuries or illnesses:

- Loss of productivity.
- Loss of workers.
- Loss of income for worker's family.
- Cost of extra overtime to make up lost time.
- Loss due to the employment of unfamiliar temporary staff.
- Fines and legal and investigation costs.
- Loss of goodwill.
- A downturn in staff morale.
- Pain and suffering.

**GOOD  
MANAGEMENT WILL  
MAKE HEALTH AND  
SAFETY A PRIORITY!**

By having a good health and safety management system you can reduce or eliminate these losses.

The law also requires us to manage health and safety in our workplaces.



### THE LAW:

#### Legal Requirements:

This section covers the requirements of:

- ***Health and Safety in Employment Act 1992*** – consolidated version of the Act available from [www.legislation.govt.nz](http://www.legislation.govt.nz)
- ***Health and Safety in Employment Regulations 1995*** – available from [www.legislation.govt.nz](http://www.legislation.govt.nz)

#### Useful resources:

- ***A Guide to the Health and Safety in Employment Act*** – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- ***Health and Safety in Employment Fact Sheets*** available from [www.osh.govt.nz](http://www.osh.govt.nz)

# SECTION 2: MANAGING HEALTH & SAFETY

## 2.1 HEALTH & SAFETY MANAGEMENT SYSTEMS (HSMS)

A Health and Safety Management System (HSMS) refers to a planned, documented and verifiable method of managing workplace hazards and the risks associated with them.

In New Zealand and Australia, we generally base Health and Safety Management Systems on these two standards:

- AS/NZS4804:2001 which essentially tells us what we 'should have' in a health and safety management system; and
- AS/NZS4801:2001 which tells us what we 'must have' and is the basis for most audit tools in Australasia.

Many meat processing companies in New Zealand are in either the ACC - Accredited Employer Programme (AEP) or the Workplace Safety Management Practices (WSMP) programme. Both of these safety-incentive programs are based on the standards above.

The company you work for will have developed a system for managing health and safety that suits your workplace. This will vary depending on the size and complexity of the business but needs to be robust enough to manage the risks posed by the operation.

Later in this guide we will talk about various hazards within the New Zealand meat Industry that we have yet to eliminate; this makes it even more important that we apply good solid controls to prevent harm, illness or loss.



### FURTHER INFORMATION:

- ***AS/NZS4804:2001 Occupational health and safety management systems*** – General guidelines on principles, systems and supporting techniques.
- ***AS/NZS4801:2001 Occupational health and safety management systems*** – Specification with guidance for use.
- ***ACC Accredited Employer Programme*** – details available from [www.acc.co.nz](http://www.acc.co.nz)
- ***ACC Workplace Safety Management Programme*** – details available from [www.acc.co.nz](http://www.acc.co.nz)

# SECTION 2: MANAGING HEALTH & SAFETY

## 2.2 THE HEALTH AND SAFETY IN EMPLOYMENT ACT 1992 (HSE ACT)

The purpose of the HSE Act is to make work activities and places where work is carried out safe and healthy for everyone.

The HSE Act covers everyone that is at, in or in the vicinity of, any place of work, including employers, employees, contractors, visitors and the general public.

### 2.2.1 PRIMARY RESPONSIBILITIES OF EMPLOYERS

The HSE Act places the primary responsibility for health and safety at work on employers.



#### EMPLOYER'S KEY LEGAL RESPONSIBILITIES:

##### Employers are required to:

Take **all practicable steps** to ensure the safety of employees while at work including:

- The provision and maintenance of a safe work environment.
- The provision and maintenance of work facilities for employees' safety and health.
- Ensuring that plant used by employees is safe.
- Not exposing employees to hazards in or near the workplace.
- Development of emergency procedures.
- Identification of all hazards in the workplace then assessment and control significant hazards to ensure workers are not exposed to them.
- The provision of information, appropriate training and supervision.
- Involving employees in the development of health and safety procedures.
- Recording and investigating accidents and notifying the Ministry of Business, Innovation & Employment (MBIE) of any serious harm injuries.

Note: Take **all practicable steps** means that you are expected to take all actions that are reasonable and practical. (See S2A of the HSE Act for a full definition of "all practicable steps").

# SECTION 2: MANAGING HEALTH & SAFETY

## 2.2.2 RESPONSIBILITIES OF EMPLOYEES

The HSE Act clearly states that employees also have responsibilities for health and safety at work.



### EMPLOYEE'S RESPONSIBILITIES:

#### Employees need to:

Take all practicable steps to ensure:

- You remain safe at work, for example by using the correct protective clothing and equipment, and by following the correct procedures.
  - That any action or inaction (something you don't do) does not cause harm to any other person.
- 
- Note that under the HSE Act you are able to refuse to do work that you believe is likely to cause you serious harm.

## 2.2.3 EMPLOYEE PARTICIPATION

Employee participation is an important part of developing and implementing health and safety practices in the workplace. Everyone needs to work cooperatively and in good faith to establish an effective health and safety system. Good faith requires being open and honest, and understanding that all involved have a legitimate interest in a safe and healthy workplace.

An effective health and safety participation system will cover:

- Identification of hazards.
- Assessment and control of significant hazards.
- Provision of information.

People who carry out work in an area or on a particular machine are in a good position to identify actual or potential hazards that arise in the course of that work and suggest ways those hazards could be managed.



### EMPLOYER'S RESPONSIBILITIES:

#### Employers need to:

- Provide reasonable opportunities for your workers to participate effectively in processes for improving health and safety at work.
- Work with your workers to develop an employee participation system that suits your workplace.

# SECTION 2: MANAGING HEALTH & SAFETY



## THE LAW:

### Legal Requirements (Part 2A of HSE Act):

- All employers must provide reasonable opportunities for their workers to participate effectively in on going processes for improving health and safety in the work place. What is viewed as 'reasonable' will depend on the nature of the particular workplace e.g. the number of employees, the likely sources of harm and the nature of the work.
- If a health and safety representative makes a recommendation about workplace health and safety the employer must adopt the proposal or set out the reasons why it has chosen not to.
- An employee participation system is required if the employer has 30 or more workers, or if there are less than 30 workers but one or more people (or the union representing them) requests a system.
- Employers and workers (or their union representatives) are free to develop and agree on a participation system that suits their requirements; however it must take into account Part 1 and 2 of Schedule 1A of the HSE Act. The participants are under an obligation to co-operate in good faith to agree, develop and implement such a system.
- If they cannot agree on a system within six months then the default system described in Part 3 of Schedule 1 A of the HSE Act will apply. This will involve holding an election in the workplace to select Health and Safety Representative/s to be members of a health and safety committee.
- The HSE Act also sets out matters which the system can include such as changing the number of days paid leave an employer must provide to allow health and safety representatives to undertake training.
- An employer is required to provide health and safety representatives 2 days paid leave each year to attend government approved health and safety training.

The Health and Safety Representative receives training so he or she can:

- Play a key role in hazard identification.
- Foster positive health and safety management practices.
- Consult with supervisors or safety officers on health and safety issues.
- Promote the interests of employees regarding health and safety.

Note: Employment Agreements can be used to establish legally binding commitments to health and safety by both the employer and the worker.



# SECTION 2: MANAGING HEALTH & SAFETY

## 2.2.4 RESPONSIBILITIES TO CONTRACTORS AND SUBCONTRACTORS

An employer not only has duties to their employees, but also to contractors and subcontractors.

When an employer hires a contractor or subcontractor at a workplace or site, it must take all practicable steps to ensure that contractor and their workers are not harmed while at work, either by a hazard that arises in the workplace or by any action or inaction of an employee. The employer is required to monitor the health and safety performance of the contractor and subcontractor. If an employer notices a hazard or unsafe practices or conditions it must bring this to the attention of the contractor.

As contractor duties are largely dictated by contract, it is wise to deal with health and safety issues within the relevant contractual documentation. An organisation that engages contractors cannot contract out of their statutory duties. However, it can manage health and safety risk via contractual mechanisms.

Depending on the nature of the services it would be prudent for the contract to deal with:

- compliance with the HSE Act;
- the health and safety policy that the contractors and subcontractors must comply with while providing the services and the potential consequences if they do not;
- health and safety training;
- the development of regular health and safety reports and attendance at health and safety meetings; and
- the procedure to use when a health and safety incident occurs, including reporting and investigation responsibilities.

Case law has established that there will usually be a positive duty on an organisation to monitor the health and safety of contractors and subcontractors, so it is important to not only actively manage employee health and safety but also that of contractors.

Contractors and subcontractors need to be made aware of hazards in your workplace before they start work as well as practices and procedures designed to prevent harm.

A register of accidents and serious harm must be maintained for self-employed contractors. An accident or serious harm involving a contractor or subcontractor must also be notified and reported to MBIE.



### A PRINCIPAL'S KEY LEGAL RESPONSIBILITIES:

A principal is required to:

- Take **all practicable steps** to ensure that no contractor or subcontractor or employee of a contractor or subcontractor is harmed while doing any work that they were engaged to do.

# SECTION 2: MANAGING HEALTH & SAFETY



## FURTHER INFORMATION:

- *A principal's guide to contracting to meet the Health and Safety in Employment Act 1992* – available from [www.business.govt.nz](http://www.business.govt.nz)
- *Health and safety in contracting situations* – available from [www.business.govt.nz](http://www.business.govt.nz)

### 2.2.5 RESPONSIBILITIES TO THE PUBLIC

A person who controls a place of work is responsible for taking all practicable steps to ensure people in the vicinity of the workplace are not exposed to harm regardless of the purpose for which they are in the vicinity.

However the extent of the duty that is owed to visitors is determined by the activity for which the visitor is present. Where visitors are present with the express or implied consent of the controller and who have paid to be there or are customers or potential customer the controller must take all practical steps to ensure they are not exposed to harm.

In respect of other visitors who do not fall within the above categories but have authorisation to be there by the occupier of the site, or have advised the controller that they have a statutory authority to be there, the controller must warn people of known significant out-of-the-ordinary hazards arising from the work that is being carried out. This duty extends to taking practicable steps to ensure that people do not enter a hazardous place of work unintentionally.

It would be prudent to warn the general public who enter the workplace site about site hazards and physically restrict their access to certain areas posing higher risk of potential harm.

It is prudent to warn the general public who enter the workplace site about site hazards and physically restrict their access to certain areas posing higher risk of potential harm.

### 2.2.6 PROVISION OF INFORMATION, TRAINING AND SUPERVISION

People must be provided information about emergency procedures and hazards that are present or may arise in the workplace and how these can be minimised. People must also be trained and/or supervised to the appropriate level to ensure they can carry out all work safely. Employers must be satisfied that workers are properly trained before they are allowed to work unsupervised.

# SECTION 2: MANAGING HEALTH & SAFETY



## EMPLOYER'S RESPONSIBILITIES:

### Access to information:

- Ensure all employees are provided access to easily understandable information about:
  - what to do in an emergency relevant to their role in the workplace;
  - all identified hazards that the employee may be exposed to or create while undertaking their particular role and the steps to be taken to minimise harm arising from them;
  - where all necessary safety equipment, material and clothing is kept.
- Ensure all health and safety representatives have ready access to sufficient information to enable them to perform their functions effectively.

### Supervision and training:

Take all practicable steps to ensure that every employee:

- has, or is supervised by a person who has sufficient knowledge and experience of relevant similar workplaces, work, equipment or substances to ensure that the employee is not likely to cause harm to themselves or others in the workplace; and
- is adequately trained in the safe use of all types of plant, objects, substances and protective clothing and equipment that they are or may be required to work with.



## EMPLOYEE'S RESPONSIBILITIES:

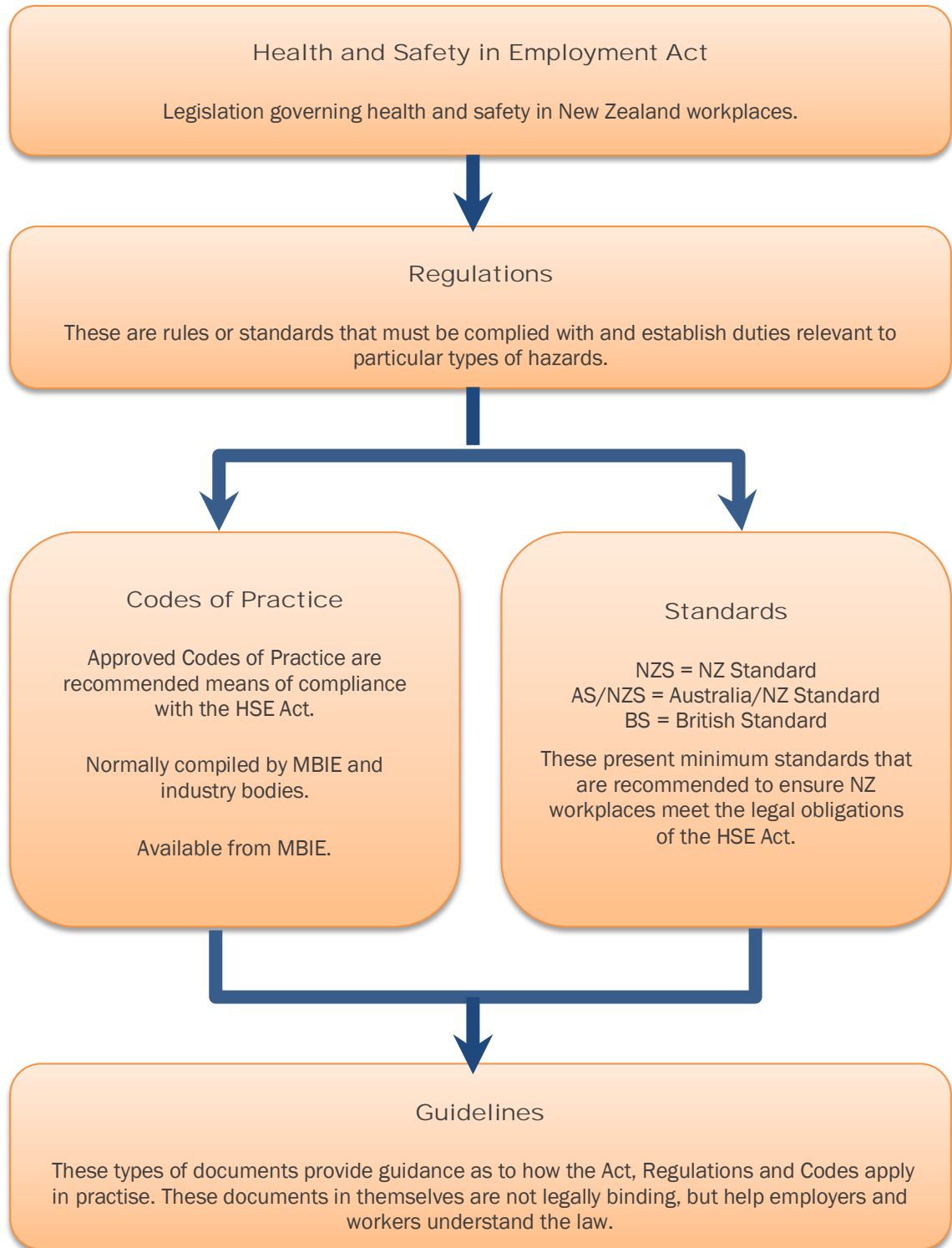
### Employees need to:

- Tell your employer if you can't find or access health and safety information, especially in respect of emergency procedures and hazard management.
- STOP work and inform your supervisor if you are asked to do a job that you have not been trained for, or you do not feel safe doing.

# SECTION 2: MANAGING HEALTH & SAFETY

## 2.3 REGULATIONS AND CODES OF PRACTICE

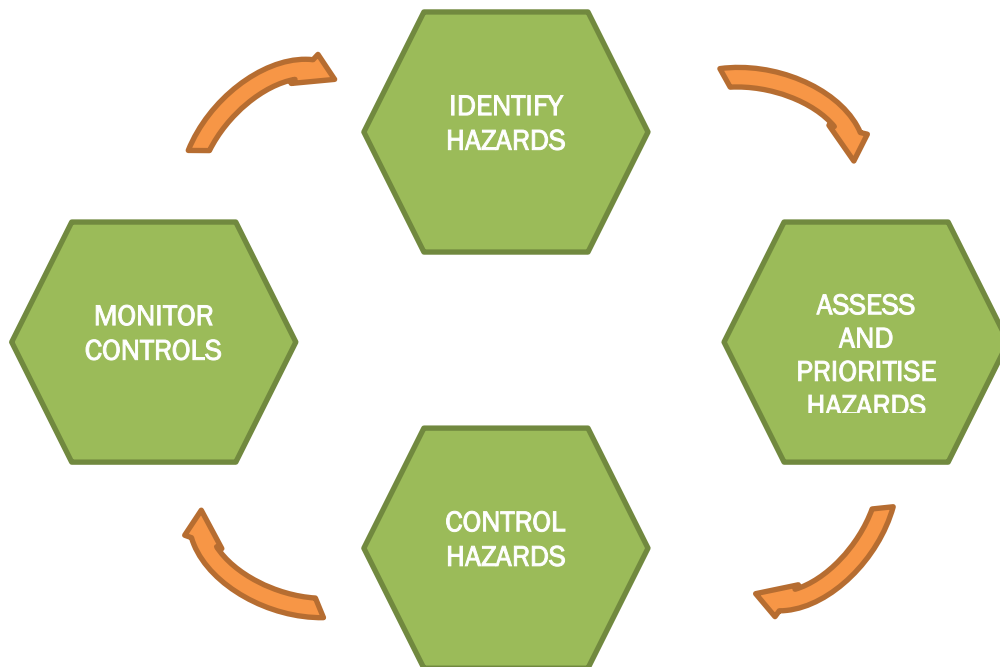
This shows the hierarchy of documentation produced to ensure minimum health and safety standards are met in workplaces.



# SECTION 2: MANAGING HEALTH & SAFETY

## 2.4 HAZARD MANAGEMENT

Hazard management involves the four steps shown here:



### STEP 1 – IDENTIFY HAZARDS

Employers must have effective methods in place for systematic identification of existing and new hazards to employees at work and making sure all workers are aware of them.



#### THE LAW:

**HSE Act 1992 Sections 7 – 10** requires employers to have in place effective methods for systematically identifying existing and new hazards and regularly assessing each hazard and whether it is significant.

**Note also that the HSE Act 1992 (amendment 2002) defines a hazard as:**

hazard—

(a) means an activity, arrangement, circumstance, event, occurrence, phenomenon, process, situation, or substance (whether arising or caused within or outside a place of work) that is an actual or potential cause or source of harm; and

(b) includes—



## SECTION 2: MANAGING HEALTH & SAFETY

- (i) a situation where a person's behaviour may be an actual or potential cause or source of harm to the person or another person; and
- (ii) without limitation, a situation described in subparagraph (i) resulting from physical or mental fatigue, drugs, alcohol, traumatic shock, or another temporary condition that affects a person's behaviour.

There are many methods of hazard identification. Some of the more common methods include:

- Physical inspections.
- Task analysis.
- Process analysis.
- Analysis of accident investigation.

It is strongly recommended that every workplace has a written list of all hazards. The list is normally called a hazard register. The hazard register should be:

- Kept in the workplace.
- Reviewed regularly as part of the health and safety system.
- Shown to all new workers or other people involved in the workplace for the first time if the hazards are not covered in other induction material.

Hazard identification must be an on-going process, but hazards don't have to be identified only at set times! Everyone should be looking out for hazards at all times and making sure that employers, supervisors, Health and Safety Representatives and other workers are made aware of them.

### Significant Hazards

Priority must be given to the identification and control of significant hazards. A significant hazard means a hazard that is an actual or potential cause or source of:

#### **A: SERIOUS HARM**

The definition of serious harm is as follows:

- Any of the following conditions that amounts to or results in permanent loss of bodily function, or temporary severe loss of bodily function: respiratory disease, noise-induced hearing loss, neurological disease, cancer, dermatological disease, communicable disease, musculoskeletal disease, illness caused by exposure to infected material, decompression sickness, poisoning, vision impairment, chemical or hot-metal burn of eye, penetrating wound of eye, bone fracture, laceration, crushing.
- Amputation of a body part.
- Burns requiring referral to a specialist registered medical practitioner or specialist outpatient clinic.
- Loss of consciousness from a lack of oxygen.

## SECTION 2: MANAGING HEALTH & SAFETY

- Loss of consciousness, or acute illness requiring treatment by a registered medical practitioner, from absorption, inhalation or ingestion of any substance.
- Any harm that causes the person harmed to be hospitalised for a period of 48 hours or more commencing within 7 days of the harm's occurrence.

### **B: HARM, THE SEVERITY OF WHICH DEPENDS ON HOW OFTEN OR HOW LONG A PERSON IS EXPOSED TO THE HAZARD**

- This harm must be “more than trivial” and includes such things as noise-induced hearing loss (industrial deafness).

### **C: HARM THAT USUALLY CANNOT BE DETECTED UNTIL A SIGNIFICANT TIME AFTER EXPOSURE**

- This includes diseases caused by exposure to hazardous substances, such as asbestosis, neurotoxicity, emphysema, and other occupational diseases.

### **STEP 2: ASSESS AND PRIORITISE HAZARDS**

Hazards need to be assessed to determine whether or not they are significant. They can then be prioritised and addressed in order of importance.

There are many methods for assessing hazards. An example is the diagram below, which shows things to consider when assessing the risk. To ensure compliance with an employer's general duty to involve employees in health and safety matters, employers should consult workers when doing this risk assessment. Many companies set up a health and safety committee to actively involve workers in the risk assessment process.

Likelihood of hazard being present	+	Time exposed to hazard	+	Result of accident	=	Overall RISK
Almost certain		All the time		Death		High
Likely to happen		Daily		Major long-term illness or disability		Reasonably high
Is a realistic chance it may happen		Weekly		Injuries or illness that needs medical attention		Moderate
Unlikely		Yearly		Minor cuts, infections, bruises		Low
Almost impossible		Never		No injuries		Very low

**DEAL WITH HIGHEST-RISK HAZARDS FIRST!**

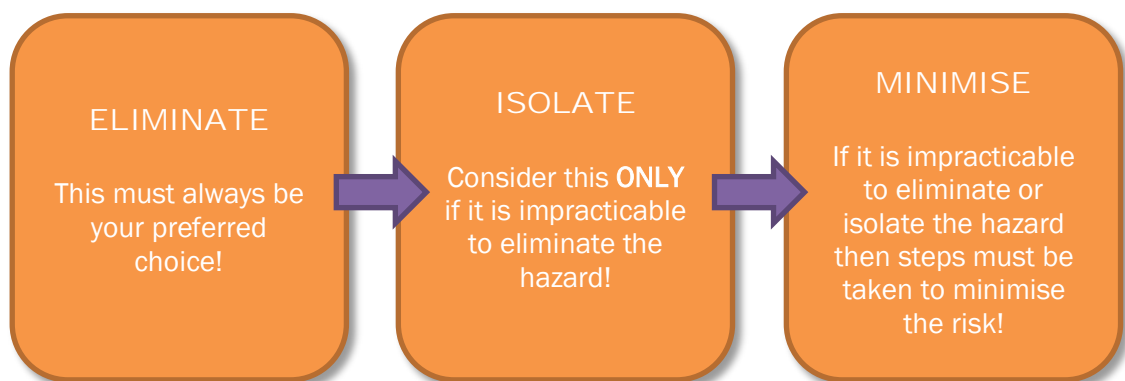
# SECTION 2: MANAGING HEALTH & SAFETY

It must always be remembered that the aim of any method used to assess hazards is to enable hazards to be prioritised. Regardless of their score, all significant hazards must be included in the hazard management system.

Further, we need to have regard for the potential of catastrophic risk leading to multiple fatalities, such as those that could arise from vehicle accident, fires, and toxic gas release. While the HSE Act requires procedures for emergencies that may arise in the workplace (see Section on Emergency Management), it must not be overlooked that hazard management must have provisions in place, where practicable, to prevent these emergencies from happening in the first place.

## STEP 3: CONTROL HAZARDS

Once significant hazards have been identified and prioritised, it is necessary to eliminate, isolate or minimise them.



### Eliminate

This means to remove a hazard completely. You must always do this if it is practicable to do so!

Examples include:

- Remove the hazardous machinery or upgrade it to a completely safe model.
- Replace a hazardous substance with a safe, non-toxic alternative.
- Stop making a hazardous product.
- Stop carrying out a particular hazardous task.

### Isolate

This means to separate the hazard from workers. This should only be considered if it is impracticable to eliminate the hazard.

Examples include:

- Cover the noisy machinery with a soundproof enclosure.
- Enclose the hazardous part of the machinery by use of guards and interlocks.

# SECTION 2: MANAGING HEALTH & SAFETY

## Minimise

This means to reduce the risk to workers and is the last choice. This action must be taken if it is impracticable to eliminate or isolate the hazard.

Actions include:

- Put procedures in place that takes account of the hazard.
- Provide appropriate protective clothing and insist that people wear it.
- Minimise and control the use of hazardous substances.
- Monitor exposure to the hazard, ensuring unsafe levels are not exceeded.
- Conduct specific training that covers the hazards.



### EMPLOYER'S RESPONSIBILITIES:

#### Employers are required to:

Take steps to control significant hazards in the following order:

- Take all practicable steps to **eliminate** (remove) the significant hazard.
  - If you can't eliminate the significant hazard then you must take all practicable steps to **isolate** it.
  - If it is not practicable to eliminate or isolate the significant hazard then you must **minimise** the hazard.
  - Remember that if the significant hazard is **isolated** or **minimised** there will always be on-going costs in monitoring the hazard, supervising workers, and maintaining personal protective equipment (PPE) etc.
- As previously stated, employers are also required to provide reasonable opportunity for employees to participate effectively in on-going processes for improvement of health and safety in the workplace.

# SECTION 2: MANAGING HEALTH & SAFETY



## EMPLOYEE'S RESPONSIBILITIES:

- Always wear your PPE and always follow lawful instructions.
- Notify your employer if you notice a hazard or potential hazard, including near misses.
- Also notify your employer if you notice any early symptoms of illness or disease.

## STEP 4: MONITOR CONTROLS

This step has main two parts:

- Continual review; and
- Accident recording and investigation.

### Continual review:

Hazard management is not a once-in-a-lifetime event. We can't simply list the hazards we find, do something about them and then forget about them!



## THE LAW:

### Legal Requirements:

- The HSE Act (S7) requires employers to have in place effective methods for systematically identifying existing and new hazards and **regularly assessing each hazard and whether it is significant**.

We need to repeatedly re-examine the workplace to check things like:

- Do the controls in place for an existing hazard need to change?
- Have standards dropped?
- Are new substances hazardous?
- Have new hazards been introduced with new technology?
- Have some of the previous hazards gone away because old equipment has been replaced?
- Is our training up to standard?
- Are people following our procedures?
- Are our procedures practical?



# SECTION 2: MANAGING HEALTH & SAFETY



## EMPLOYER'S RESPONSIBILITIES:

### Employers need to:

- Have set times to review the hazard management systems you have in place.
- Make sure specific times are scheduled to review existing hazards (in your register) and look for new hazards.
- Put in place a system that allows hazards to be reported and recorded at any time.
- Put in place procedures that ensure hazard identification is undertaken before any new tool, plant or equipment is put into operation.
- Encourage workers to be involved with the identification, control and monitoring of hazards.
- Make sure workers are made aware of the hazards in the workplace and how they can be removed, isolated or minimised.

## Accident recording and investigation

An important part of monitoring is accident investigation. For this reason, employers are required to record all accidents.

Accidents can be investigated using the form shown on page 27. This example can be photocopied but is also available from the local MBIE, or templates can be downloaded from their website [www.dol.govt.nz](http://www.dol.govt.nz).

These forms must be kept in a register in your workplace. This register must be reviewed regularly to ensure the hazards that caused these accidents are being controlled.

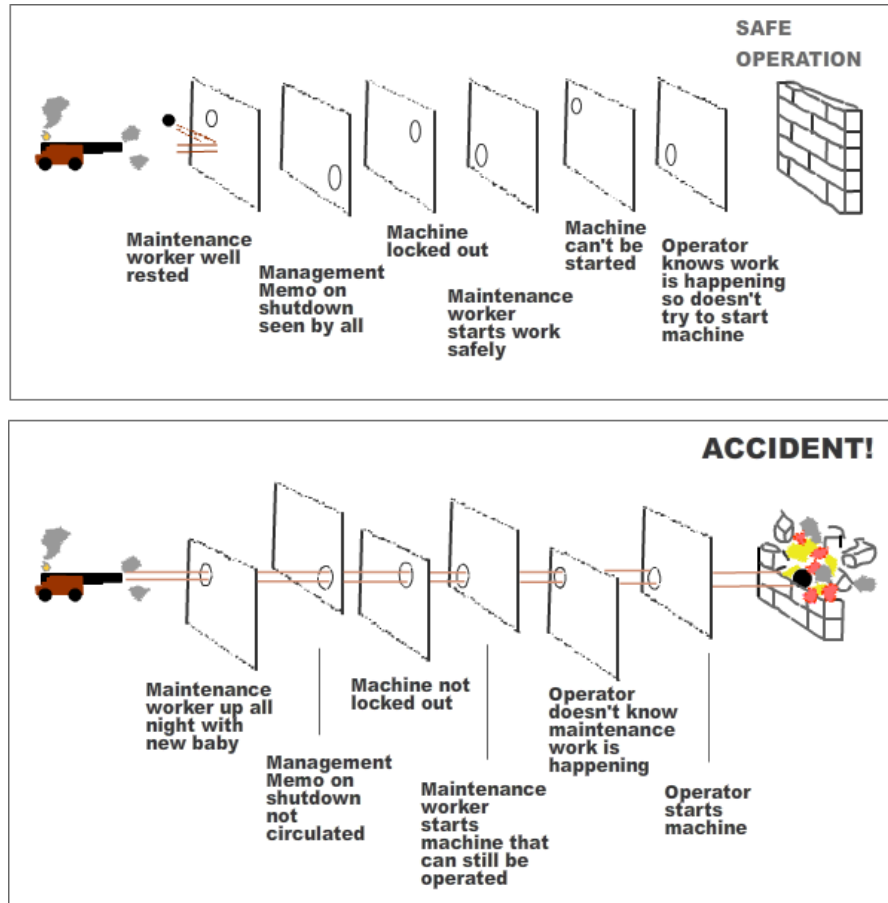
Accidents must be investigated to see if they arose from a significant hazard. It is a good practice to also investigate near misses which could have resulted in an injury. These may be early warnings of a significant hazard.

Start the investigation as soon as possible! This is so events are still fresh in everyone's mind and "evidence" is still available.

When you carry out an investigation it is very important you have "an open mind". Health and Safety Representatives are usually trained in accident investigation techniques so their involvement would be valuable.

## SECTION 2: MANAGING HEALTH & SAFETY

It is important to remember that there is usually more than one cause of an accident. Often it is a “chain of events” that happen in such a way as to give rise to an accident. The drawings below show that if certain things happen at one time they can all contribute to an accident.



“Swiss Cheese” Model of Accident Causation

# SECTION 2: MANAGING HEALTH & SAFETY

## REPORTING SERIOUS HARM ACCIDENTS

Employers are required to report serious harm accidents that happen in the workplace to MBIE as soon as possible, that is, once you are no longer required to tend to the injured person(s) or take action to prevent further injury.

This report can be made by phone 24 hours a day, seven days a week to **0800 20 90 20**.

If you are unsure if the accident should be reported, err on the side of caution and contact your local MBIE office.

After the initial report you have seven days to send the completed accident form to MBIE.

### REMEMBER

DO NOT DISTURB  
THE SCENE.

(Except to save life,  
assist the injured or  
prevent further loss).



### EMPLOYER'S AND A PRINCIPAL'S LEGAL RESPONSIBILITIES WHEN AN ACCIDENT OCCURS:

#### Employers are required to:

- Maintain a register in the form described in the Health and Safety in Employment (Prescribed Matters) Regulations 2003 that records all serious harms or accidents that harmed or might have harmed:
  - any employee at work; and
  - a person in the place or work (which the employer controls).

If an employer is also a Principal under the HSE Act (an organisation that engages contractors) it shall have additional reporting duties. **Principals are required to:**

- Maintain a register in the prescribed form that records all serious harms and accidents that the Principal becomes aware of :
  - that harmed or might have harmed a self-employed contractor while at work; and
  - that resulted from the work of a self-employed contractor and harmed or might of harmed any other person at work.
- Also record in this register every occurrence of serious harm to a self-employed contractor while at work or as a result of any hazard they were exposed to while at work.
- Take all practicable steps to investigate the accident or harm to determine whether it was caused by or arose from a significant hazard.

#### Both Employers and Principles are required to:

- Notify MBIE as soon as possible if a serious harm occurs to a person as a result of

## SECTION 2: MANAGING HEALTH & SAFETY

work activities.

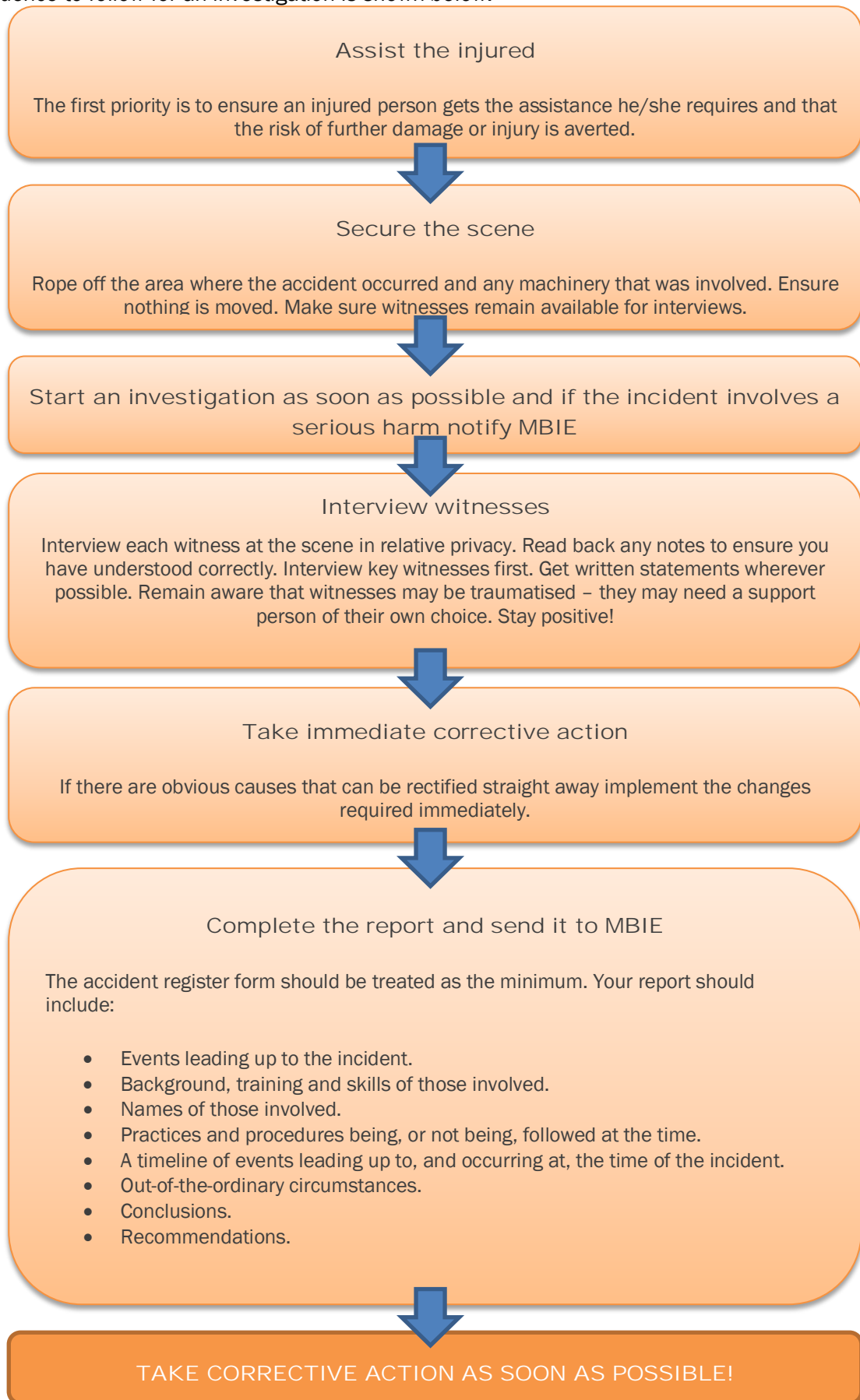
- Make sure the serious harm accident scene is not disturbed until MBIE releases the scene back into your control (except to the extent necessary to assist the injured person, maintain access to an essential service or utility, or prevent serious damage or loss of property).
- Within 7 days of the serious harm accident or as soon as possible after it becomes known, provide MBIE written notice in the form required 'Form of register or notification of circumstances of accident or serious harm' available at [www.osh.govt.nz](http://www.osh.govt.nz).

**Note: it is a good idea to investigate near misses as if they were accidents. You can get valuable information from this that can prevent future accidents. Prevention is better than the cure!**

If a serious harm occurs then MBIE are likely to undertake its own investigation.

## SECTION 2: MANAGING HEALTH & SAFETY

The sequence to follow for an investigation is shown below:





# SECTION 2: MANAGING HEALTH & SAFETY

## ACCIDENT RECORDING FORM 1

Form of register or notification of circumstances of accident or serious harm																											
Required for section 25(1), (1A), (1B), and (3)(b) of the Health and Safety in Employment Act 1992 For non-injury accident, complete questions 1, 2, 3, 9, 10, 11, 14 and 15 as applicable																											
<b>1 Particulars of employer, self-employed person or principal:</b> (business name, postal address and telephone number)	<b>11 Agency of accident/ serious harm:</b>																										
<div><div></div><div></div><div></div></div>	<input type="checkbox"/> machinery or (mainly) fixed plant <input type="checkbox"/> mobile plant or transport <input type="checkbox"/> powered equipment, tool, or appliance <input type="checkbox"/> non-powered handtool, appliance, or equipment <input type="checkbox"/> chemical or chemical product <input type="checkbox"/> material or substance <input type="checkbox"/> environmental exposure (e.g. dust, gas) <input type="checkbox"/> animal, human or biological agency (other than bacteria or virus) <input type="checkbox"/> bacteria or virus																										
<b>2 The person reporting is:</b> <input type="checkbox"/> an employer <input type="checkbox"/> a principal <input type="checkbox"/> a self-employed person	<b>12 Body part:</b> <input type="checkbox"/> head <input type="checkbox"/> neck <input type="checkbox"/> trunk <input type="checkbox"/> upper limb <input type="checkbox"/> lower limb <input type="checkbox"/> multiple locations <input type="checkbox"/> systemic internal organs																										
<b>3 Location of place of work:</b> <div><div></div><div></div><div></div></div> (shop, shed, unit nos., floor, building, street nos. and names, locality/suburb, or details of vehicle, ship or aircraft)	<b>13 Nature of injury or disease:</b> <input type="checkbox"/> fatal (specify all) <table><tbody><tr><td><input type="checkbox"/> fracture of spine</td><td><input type="checkbox"/> puncture wound</td></tr><tr><td><input type="checkbox"/> other fracture</td><td><input type="checkbox"/> poisoning or toxic effects</td></tr><tr><td><input type="checkbox"/> dislocation</td><td><input type="checkbox"/> multiple injuries</td></tr><tr><td><input type="checkbox"/> sprain or strain</td><td><input type="checkbox"/> damage to artificial aid</td></tr><tr><td><input type="checkbox"/> head injury</td><td><input type="checkbox"/> disease, nervous system</td></tr><tr><td><input type="checkbox"/> internal injury of trunk</td><td><input type="checkbox"/> disease, musculoskeletal system</td></tr><tr><td><input type="checkbox"/> amputation, including eye</td><td><input type="checkbox"/> disease, skin</td></tr><tr><td><input type="checkbox"/> open wound</td><td><input type="checkbox"/> disease, digestive system</td></tr><tr><td><input type="checkbox"/> superficial injury</td><td><input type="checkbox"/> disease, infectious or parasitic</td></tr><tr><td><input type="checkbox"/> bruising or crushing</td><td><input type="checkbox"/> disease, respiratory system</td></tr><tr><td><input type="checkbox"/> foreign body</td><td><input type="checkbox"/> disease, circulatory system</td></tr><tr><td><input type="checkbox"/> burns</td><td><input type="checkbox"/> tumour (malignant or benign)</td></tr><tr><td><input type="checkbox"/> nerves or spinal chord</td><td><input type="checkbox"/> mental disorder</td></tr></tbody></table>	<input type="checkbox"/> fracture of spine	<input type="checkbox"/> puncture wound	<input type="checkbox"/> other fracture	<input type="checkbox"/> poisoning or toxic effects	<input type="checkbox"/> dislocation	<input type="checkbox"/> multiple injuries	<input type="checkbox"/> sprain or strain	<input type="checkbox"/> damage to artificial aid	<input type="checkbox"/> head injury	<input type="checkbox"/> disease, nervous system	<input type="checkbox"/> internal injury of trunk	<input type="checkbox"/> disease, musculoskeletal system	<input type="checkbox"/> amputation, including eye	<input type="checkbox"/> disease, skin	<input type="checkbox"/> open wound	<input type="checkbox"/> disease, digestive system	<input type="checkbox"/> superficial injury	<input type="checkbox"/> disease, infectious or parasitic	<input type="checkbox"/> bruising or crushing	<input type="checkbox"/> disease, respiratory system	<input type="checkbox"/> foreign body	<input type="checkbox"/> disease, circulatory system	<input type="checkbox"/> burns	<input type="checkbox"/> tumour (malignant or benign)	<input type="checkbox"/> nerves or spinal chord	<input type="checkbox"/> mental disorder
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<input type="checkbox"/> burns	<input type="checkbox"/> tumour (malignant or benign)																										
<input type="checkbox"/> nerves or spinal chord	<input type="checkbox"/> mental disorder																										
<b>4 Personal data of injured person:</b> Name <div><div></div></div> Residential address <div><div></div></div>  Date of birth <div><div></div></div> Sex (M/F) <div><div></div></div>	<b>14 Where and how did the accident/serious harm happen?</b> (If not enough room attach separate sheet or sheets.) <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>																										
<b>5 Occupation or job title of injured person:</b> (employees and self-employed persons only) <div><div></div></div>	<b>15 If notification is from an employer:</b> (a) Has an investigation been carried out? <input type="checkbox"/> yes <input type="checkbox"/> no (b) Was a significant hazard involved? <input type="checkbox"/> yes <input type="checkbox"/> no																										
<b>6 The injured person is:</b> <input type="checkbox"/> an employee <input type="checkbox"/> a contractor (self-employed person) <input type="checkbox"/> self <input type="checkbox"/> other	<b>Signature and date</b> _____ / /																										
<b>7 Period of employment of injured person:</b> (employees only) <input type="checkbox"/> 1 <sup>st</sup> week <input type="checkbox"/> 1 <sup>st</sup> month <input type="checkbox"/> 1-6 months <input type="checkbox"/> 6 months-1 year <input type="checkbox"/> 1-5 years <input type="checkbox"/> Over 5 years <input type="checkbox"/> non-employee	<b>Name and position</b> (capitals)																										
<b>8 Treatment of injury:</b> <input type="checkbox"/> None <input type="checkbox"/> First aid only <input type="checkbox"/> Doctor but no hospitalisation <input type="checkbox"/> Hospitalisation																											
<b>9 Time and date of accident/ serious harm:</b> Time <div><div></div></div> am/pm Date <div><div></div></div> Shift <input type="checkbox"/> Day <input type="checkbox"/> Afternoon <input type="checkbox"/> Night																											
Hours worked since arrival at work (employees and self-employed persons only) <div><div></div></div>																											
<b>10 Mechanism of accident/ serious harm:</b> <table><tbody><tr><td><input type="checkbox"/> fall, trip or slip</td><td><input type="checkbox"/> hitting objects with part of the body</td></tr><tr><td><input type="checkbox"/> sound or pressure</td><td><input type="checkbox"/> being hit by moving objects</td></tr><tr><td><input type="checkbox"/> body stressing</td><td><input type="checkbox"/> heat, radiation or energy</td></tr><tr><td><input type="checkbox"/> biological factors</td><td><input type="checkbox"/> chemicals or other substances</td></tr><tr><td><input type="checkbox"/> mental stress</td><td></td></tr></tbody></table>	<input type="checkbox"/> fall, trip or slip	<input type="checkbox"/> hitting objects with part of the body	<input type="checkbox"/> sound or pressure	<input type="checkbox"/> being hit by moving objects	<input type="checkbox"/> body stressing	<input type="checkbox"/> heat, radiation or energy	<input type="checkbox"/> biological factors	<input type="checkbox"/> chemicals or other substances	<input type="checkbox"/> mental stress																		
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OF NEW ZEALAND



# SECTION 2: MANAGING HEALTH & SAFETY

## 2.5 WORKPLACE SELF-CHECK

Any system that is put in place needs to be regularly reviewed to make sure it is effective and that it is fully meeting the requirements of the law to have a safe and healthy workplace.

This should be done in a systematic way – perhaps have a list of the parts of the system and review one each month. You need to write down the details and results of the review, and any action you take because of the review.

Employers should remind workers that they have responsibilities under the HSE Act. Workers must tell their immediate supervisor about any issues in their workplace that might affect health and safety.



### FURTHER INFORMATION:

- *A Guide to the Health and Safety in Employment Act* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *Involving Employees in Safety at Work: Developing an approach that suits your workplace* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *The Role of Health and Safety Representatives* – fact sheet available from [www.dol.govt.nz](http://www.dol.govt.nz)
- Forms available from [www.dol.govt.nz](http://www.dol.govt.nz)
  - Accident Register Form
  - Accident Investigation Form
  - First Aid Register
  - Hazard Identification Form
  - Notification of Particular Hazardous Work

# SECTION 3: WORKING ENVIRONMENT

## 3 WORKING ENVIRONMENT

In this section you will find information about the working environment and how this can affect health and safety. It includes information on:

- Safe access.
- Heat and dehydration.
- Wet and cold.
- Noise.
- Personal Protective Equipment (PPE).
- Cleaning and sanitising.
- Personal hygiene.
- Housekeeping, slips, trips and falls.

### 3.1 SAFE ACCESS

Safe access at a meat plant or processing site starts with how we arrive at work, park and gain access to our place of work. Sites can be very busy with stock trucks arriving, forklifts operating and pedestrians moving around.

Where there is the potential of harm to people in our workplace (irrespective of whether they are our employees or not) we need to have in place effective controls. Controls at a workplace may include the implementation of a traffic safety plan, bollards, barriers, speed limits, mirrors, and clearly marked pedestrian walkways and signage.

Access ways include doors, passages, walkways and other spaces that allow people to move around the workplace. At any worksite there are access ways for maintenance, escape or simply enabling safe passage.

Keep all access ways clear and mark emergency exits with visible signs. Never lock an emergency access way, thus preventing it from being used.

Things can happen extremely quickly and a work area may have to be evacuated quickly.

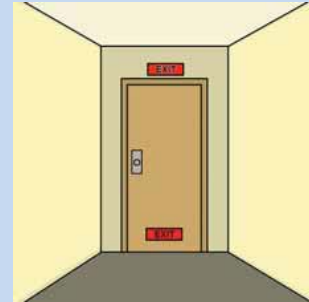
Fire and smoke make it even harder to get out. It is very important that further obstacles are not put in the way of the person escaping, whether it is a physical obstruction, or the person's lack of knowledge about their work area.



# SECTION 3: WORKING ENVIRONMENT



- Every stairway, passage, ladder and door should be treated as an escape route.
- Keep all openings, ladders, passageways and stairs clear at all times.
- When they arrive on-site, show all employees and contractors the location of alternative escape routes from all work areas.



- Keep markings and signs well maintained. Make sure they are kept clean and clear.
- Everyone should use the correct access ways –don't take shortcuts.
- Walk; don't run!
- Use handrails when going up or down stairs - that's what they are for!
- Keep guard rails secure.
- Keep walkway gratings and floor plates in good order.



- Remove fat or dropped cuts of meat or product off the floor.
- If cleaning up fat or a spill on the floor, ensure that you caution others that the surface may be slippery until fully dry.
- Non-skid surfaces must also be kept in good order.
- Don't scrape your gumboots on a non-slip grit surface to remove fat or product, it wears out the surface quickly and makes it ineffective.
- Use the boot-wash, brush and hose to remove fat from your gumboots.
- Ensure that steps on ladders and stairs have good tread.

# SECTION 3: WORKING ENVIRONMENT

## 3.2 HEAT – DEHYDRATION

Within meat processing, high temperature and humidity can be an issue in some areas such as slaughter and offal processing. If working on a slaughter floor, you are working in an environment with heat from the carcass, 82°C water for knife sterilizing, wearing whites, safety clothing and personal protective equipment (PPE), and performing physically demanding work. This is further aggravated if it is a hot day, the room is exposed to direct sunlight and there is a lack of airflow in the room.

There are six main factors that contribute to heat stress:

- Air temperature.
- Humidity.
- Radiant heat.
- Air speed.
- Physical activity.
- Clothing.
- Level of hydration.

Hot working conditions can cause a number of health problems which range from minor to life threatening. These include:

- **Heat rash** – skin rashes can occur with hot work. The most common is prickly heat.
- **Fainting** – hot conditions cause some people to faint. Seek medical assistance to ensure that the employee is not suffering from heat exhaustion or heat stroke.
- **Heat cramps** – excessive sweating causes a loss of salt from the body which results in painful muscle cramps.
- **Heat exhaustion** – a serious condition caused by the changes in the body's chemistry due to hot conditions. Usually there is nausea, weakness, headache and intense thirst. The person will be sweating profusely and the skin will be cold, moist and clammy. Cool the person promptly. If no rapid improvement, seek urgent medical attention.
- **Heat stroke** – a life-threatening emergency. The body's heat regulation is lost and body temperature rises to dangerous levels. The person may be dizzy, weak, confused and may collapse. The skin will be hot and dry. Cool the person promptly and seek urgent medical attention.

When the body produces or receives heat energy, its temperature rises and sweat is produced to cool the body. The blood flows to the skin to be cooled, forcing the heart to beat harder, and the blood flow to vital organs is reduced.

As heat increases the load on the heart, workers with high blood pressure or a pre-existing heart condition are particularly vulnerable to the effects of heat.



Sweating can quickly lead to dehydration for people working in hot conditions. Workers who are dehydrated may become fatigued quickly, have difficulty completing skilled tasks and are at higher risk of making mistakes or having an accident.

# SECTION 3: WORKING ENVIRONMENT

## 3.2.1 Understanding dehydration

Your body needs a certain amount of fluid each day to maintain the various body systems within. The fluid you drink replaces body fluids lost through sweat and urine. You become dehydrated when you are not drinking enough fluid to replace lost body fluid.

In a hot environment, you will need to drink more fluid than normal to replace the larger amount of fluid that you will lose.

Signs of dehydration include:

- Headaches.
- Muscle cramps.
- Dizziness or fainting.
- Mood changes or confusion; and
- Changes in heart rate and breathing patterns.

In the most severe cases it may lead to heat stroke, with the person becoming dizzy, weak, confused and may collapse.



**Call an ambulance immediately if you see someone with signs of heat stroke!**



### PRACTICAL ADVICE:

- Drink plenty of water during the day. Water is the best thing you can drink to avoid dehydration in most circumstances.
- If you know are going to be working in a hot environment, hydrate before starting work.
- It is easier to fluid load before starting hot work than it is to replace lost fluids during an activity.
- Limit drinks of tea, coffee and soft drinks – the caffeine and sugar in these drinks make them less hydrating than





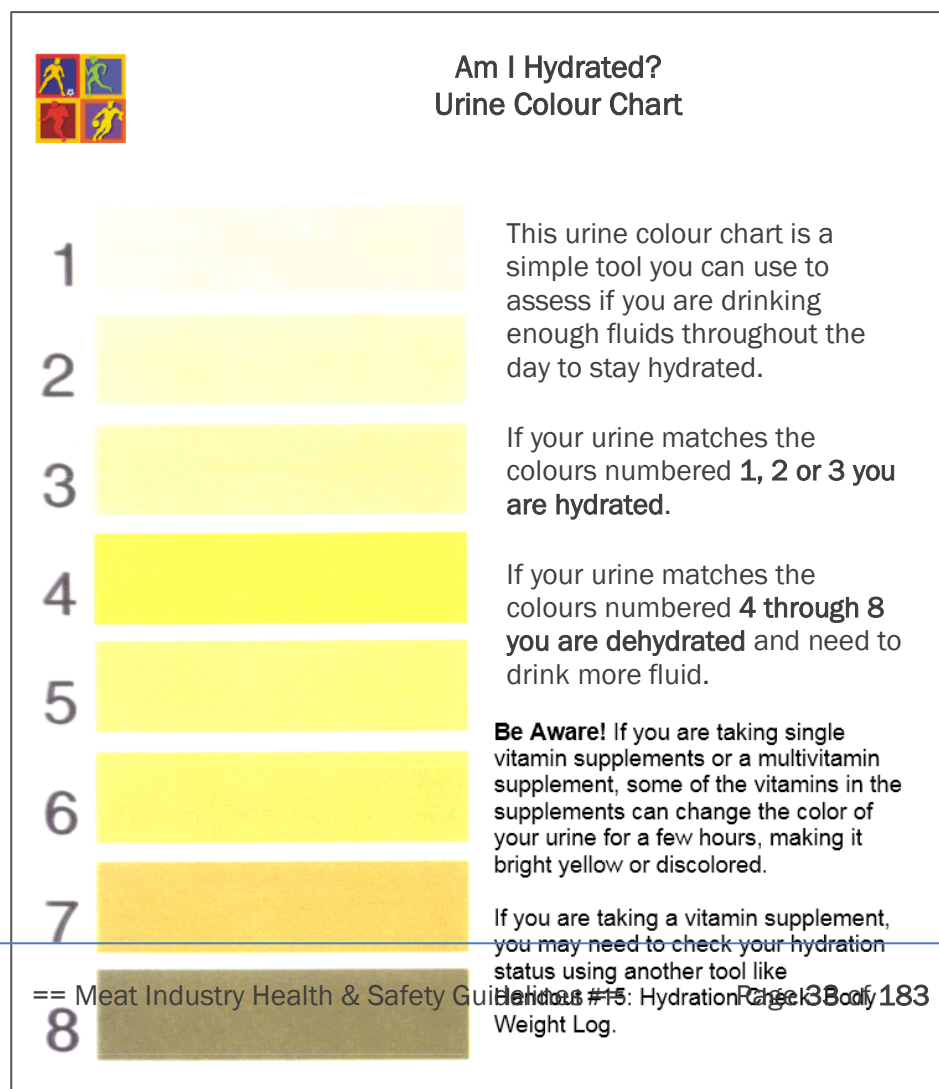
# SECTION 3: WORKING ENVIRONMENT

water.

- Energy drinks are generally high in sugar content and caffeine and do not provide adequate rehydration.
- Take regular breaks.
- Ensure there is adequate air flow (ventilation) to keep the temperature down.
- If you are working outside in the yards or around a meat plant:
  - Work in the shade as much as possible.
  - Wear sun hats and sun screen where appropriate.

## CHECKING FOR DEHYDRATION

Urine is a good indicator - this chart helps you to analyse your level of hydration.





## SECTION 3: WORKING ENVIRONMENT



### EMPLOYER'S NEED TO:

Where the risks of heat stress cannot be completely eliminated you should ensure:

- The provision of cool, clean and palatable drinking water (this should be provided to all workers, but additional outlets may be needed in hot areas) and suitable clothing that will allow tasks to be performed with comfort.
- The effects of heat stress are known by supervisors and all employees potentially exposed to the risk.
- Monitor temperatures in the working environment.



### FURTHER INFORMATION:

- *What You Need to Know about Temperature in Places of Work* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *Guidelines for the Management of Work in Extremes of Temperature* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

# SECTION 3: WORKING ENVIRONMENT

## 3.3 WET AND COLD

If you are working in wet and cold conditions you are more likely to slip, trip, or fall. Extreme cold reduces muscle strength and stiffens joints – this increases the chance of accidents occurring. People working in these conditions are also more likely to get coughs, colds and other similar illnesses.

Within the meat industry, persons working in boning rooms, chillers or freezers are exposed to cold environments. For instance a boning room operates with an environmental temperature of between 7-9°C, certainly less than 12°C. This can also be affected by the layout of the room i.e. if you are positioned next to the refrigeration venting etc. There are also other factors that affect the effects of cold such as age, weight, level of fitness and job activity. We each have a perception of 'thermal comfort' but, where we are exposed to cold and wet conditions for a period of time, issues can arise.

If you are working in a freezer environment or exposed to blast chillers, your exposure to environmental extremes are greater, therefore the risk of harm is higher. Freezer environments are also associated with increased slip, trip and fall hazards.



Persons entering a blast chiller or performing maintenance on a blast tunnel or unit should always be observed or a process put in place to check on them. Should a worker in this environment slip and fall and be unable to get themselves out, the consequence could be tragic.



Cleaners and persons performing a wash down or cleaning operation should wear wet weather clothing. It is commonly identified that the effects of cold are significantly increased if a person is wet.



In very wet and cold situations, there is the risk of hypothermia (also known as "exposure"). Hypothermia happens when your body temperature starts to drop. A person suffering hypothermia may not realise what is happening to them. It is very serious and you must act quickly if you think someone is showing signs of hypothermia.

Signs of hypothermia include:

- Uncontrollable shivering.
- Gradual slowing, both physically and mentally.
- Increased clumsiness.
- Poor judgement developing into mental confusion.
- In severe cases, increased drowsiness, progressing to a coma or death. What to do:
  - Move the person to a dry place.
  - Replace their wet clothes with warm coverings – wrap in blankets, or anything warm and dry.
  - Once the person has warm, dry coverings, warm them up with mild exercise.
  - Offer food and warm drinks.



**IF A PERSON GOES INTO A COMA, CALL AN AMBULANCE IMMEDIATELY!**

## SECTION 3: WORKING ENVIRONMENT



### PRACTICAL ADVICE:

Wear suitable clothing that provides protection from wet or cold conditions.

If working in freezers or exposure to blast chillers:

- Wear a freezer jacket and pants or over trousers/bibs.
- Wear safety foot wear.
- Wear a warm hat or beanie (remember we lose a good percentage of our heat through our head).
- Wear suitable gloves.

If you can't stay dry:

- Wear waterproof coveralls or leggings.
- Dry yourself off as soon as you have finished your time in the wet conditions. Have a change of clothes (something warm) to put on.
- Have regular warm drinks.

Have in place a process that checks on the safety and location of workers in high risk environmental conditions.



### EMPLOYEE'S RESPONSIBILITIES:

- Ensure you wear safety clothing or PPE that is provided for you.



### EMPLOYER'S NEED TO:

- Provide workers with appropriate warm clothing (e.g. woollen or polar fleece) if they are to work in adverse weather conditions or in cold environments (e.g. refrigerated rooms).



### FURTHER INFORMATION:

*What You Need to Know about Temperature in Places of Work* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

*Guidelines for the Management of Work in Extremes of Temperature* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

# SECTION 3: WORKING ENVIRONMENT

## 3.4 NOISE

You will suffer hearing loss if exposed to too much noise over a period of time. Within the meat industry we utilise equipment and plant that generate noise levels that can be harmful. We need to always consider eliminating the source of the noise or putting in some form of isolation; however this is not always practical.

### Too much noise can:

- Cause deafness or “tinnitus” – ringing sounds in the ears.
- Affect your performance in reading, writing and listening.
- Disrupt you when you are carrying out tasks where you need to hold a steady posture. Sudden bursts of noise are particularly disruptive.
- Reduce your performance of tasks that require continual attention (vigilance).
- Cause you to feel annoyed. How annoyed you feel is affected by the intensity of the sound and by your attitude. If you feel that you have control over the source of the noise this will reduce annoyance and improve performance.
- Make communication difficult. You may not hear someone shouting a warning to you.

### MAXIMUM NOISE EXPOSURE TIME

The table below shows the length of time you can be exposed to a level of noise without impairing your hearing, according to NZ approved noise exposure class.

**Simply put, the longer your ears are exposed to excessive noise, the greater the degree of hearing loss.**

Noise Level dB(A)	Maximum Time Per Day
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	1 minute
115	30 seconds

In New Zealand, the maximum exposure limit is 85dB(A) over an eight-hour period and a peak exposure of 140dB(A).

**Note that shifts exceeding 8 hours must be taken into account in any noise assessment, as the maximum 85 dB(A) level is set for a nominal 8-hour day.**

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## NOISE LEVELS – PRACTICAL EXAMPLES

There are some levels of noise around a meat plant that may surprise you. Remember, noise is measured in decibels dB(A), the levels of which vary with the types of equipment or machinery being used.

Here are some indicative noise readings from a meat plant that was visited during the development of these Guidelines. These noise levels were taken as an 8 hour time weighted average (TWA).

- Bandsaws were measured at 90.3 dB(A).
- Operation of a hopper at 96.7 dB(A).
- Ammonia plant at 97.7 dB(A).

Remember, this is over an 8 hour period, so persons working in all of these areas will require hearing protection. There are some things that we don't always consider, like the use of a captive bolt gun at a peak in excess of 140 dB(A) or rattlers or dogs in the Yards with a reading of 100-110dB(A). What this shows is our noise survey needs to take into account all areas and guide the controls we have in place.

As a general rule, noise controls are probably needed if:

- People have to raise their voices during a discussion when they are only 1 metre apart, or
- People have a temporary reduction in hearing or ringing in the ears when they finish work.

It is important that your company arranges for a thorough noise survey to be conducted by a competent person.



### PRACTICAL ADVICE:

- The first thing to try to do is **eliminate** the source of the noise. This may involve upgrading machinery with newer technology that operates more quietly.
- If it is impracticable to remove the source of noise, the next option is to try to **isolate** the source of the noise. This is achieved by enclosing noisy machines in a soundproof shell or moving to a room away from workers.
- Only if the above two options are not practicable must you rely on **minimising** the noise as a method of control. This could involve:
  - Fitting covers or rubber mountings to machines to reduce the noise.
  - Designating the area a **hearing protection area**:
    - Every person in a designated hearing protector area must wear hearing protectors.
    - Employers should ensure that hearing protectors worn by workers are clean and in a good state of repair. Workers should be encouraged to clean re-useable earplugs in

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soap and water at the end of each day. Earmuff wearers should clean the cushion on earmuffs periodically.

- Hearing protectors should be kept in a clean, airtight container when not in use.
- Inspect hearing protectors regularly. Check for any damage that will make them uncomfortable, harm the wearer or make the device less effective in protecting hearing.
- **Do not remove hearing protectors**, even for very brief periods of time. A worker not wearing a hearing protector for as little as 30 minutes a day can reduce by a half the protection it is giving over the entire day.

### PROTECTION DEVICES

Protection devices (earplugs and earmuffs) vary in size, shape and design. It is important that you get a type that fits well. These are classified to the level of protection offered.

### HEARING PROTECTION GUIDELINES

In New Zealand the selection of appropriate hearing protection uses the following workplace classification system.

Class	LAeq.8h/dB(A)
1	Less than 90
2	90 to less than 95
3	95 to less than 100
4	100 to less than 105
5	105 to less than 110

To determine how much noise is in your work environment it is recommended you use the services of a specialised noise monitoring company or a suitably qualified person.

The choice of ear plugs or earmuffs (often called hearing defenders) is going to be up to you and the company you work for. It is an employer's responsibility to supply correct PPE relative to the hazard you are facing, in this case the hazard is noise. Within the meat industry generally, disposable foam plugs are not permitted due to the risk of food contamination. You will most often find that companies will use ear plugs with cords that are metal detectable to comply with food hygiene requirements.

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IPOD and other music devices placed under your ear muffs are generally not permitted and somewhat defeat the purpose of wearing hearing protection. However, you can obtain ear muffs with an IPOD insert that has a noise limiter fitted. These prevent the noise level in your ear muffs exceeding 85dB(A) and therefore protect you from any harm. However, this technology is more expensive than standard hearing protection so you will need to refer back to your own employer for their policy on this.



## EMPLOYER'S NEED TO:

- Make every effort to eliminate or isolate noise sources.
  - Take steps to reduce the noise at its source, if the noise cannot be eliminated or isolated.
  - Set a monitoring programme that measures the level of noise and takes account of the time your employees are exposed to it.
- 
- Ensure you provide your workers with noise protection devices that will protect them against the worst noise level they are likely to encounter at work.
  - Establish a routine hearing test (audiology) system to test regularly for degradation of workers' hearing at least annually.
  - Make supplies of replacement cushions and other replaceable parts for noise protection devices available so repairs can be made immediately where necessary.



## THE LAW:

- *Health and Safety in Employment Regulations 1995 (Regulation 11)* – available from [www.legislation.govt.nz](http://www.legislation.govt.nz).
- *Approved Code of Practice for the Management of Noise in the Workplace* – available from [www.dol.govt.nz](http://www.dol.govt.nz).



## FURTHER INFORMATION:

- *How to deal with noise at work* – available from [www.dol.govt.nz](http://www.dol.govt.nz).
- Information on hearing protection is available from <http://www.dol.govt.nz>.
- Refer to Hearing Protector Standard **AS/NZS 1270:2002**.
- Seek guidance from an audiologist – contact details are in the Yellow Pages.



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## 3.5 SAFETY EQUIPMENT AND CLOTHING

This section deals with the clothes and personal protective equipment (PPE) required for working in the New Zealand meat industry. It is an employer's legal responsibility to provide the necessary safety equipment and clothing, and it is the worker's legal responsibility to use it as required.

Note that use of PPE is a minimisation control measure and should only be used when elimination and isolation control measures have been exhausted. Where chosen as a control measure, PPE must fit the person who is wearing it and they must be given training in its limitations and how to use it correctly.



### HAZARDS:




- Many of the hazards identified throughout these Guidelines rely on the use of safety equipment and clothing to reduce the risk of being injured.
- Failing to use proper and effective safety equipment or clothing may lead to injury, illness and further harm.








### GENERAL CLOTHING:

- Within the meat industry you will be required to wear white overalls or pants and jacket (referred to as 'whites') and to have your hair covered due to food hygiene regulations.
- In some plants and facilities visitors will be given disposable whites that are like a coverall.
- You will also be provided with hair nets or balaclavas. It is vitally important that you keep long hair securely placed under your hair net to prevent it being caught in machinery, plant or conveyors.
- You should avoid wearing rings and other jewellery that may become caught in machinery. Persons working in situations where direct or indirect contact with food could occur will not be permitted to wear jewellery. Although this is generally a food safety issue, it is also important for your safety.

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HAZARD	PERSONAL PROTECTIVE EQUIPMENT (PPE)
 Cuts from knives and cutting equipment.	<ul style="list-style-type: none"> <li>• A variety of mesh and cut resistant gloves, gauntlets, plastic arm guards and mesh aprons are available to protect against cuts.</li> <li>• Refer to Section 4: High Risk Activities - Knife Safety for further information on cut protection PPE.</li> </ul>
 Foreign body in eye or face.	<ul style="list-style-type: none"> <li>• Where there is a risk of foreign body in the eye, effective eye protection should be worn. This can be a bone chip for a saw man, hot water and/or chemicals when cleaning, or for the prevention of illnesses such as leptospirosis. We will look further at the use of face and eye protection in Section 4: High Risk Activities - work contributing to zoonotic diseases.</li> <li>• Eye protection must be appropriate to the hazard it is providing protection against and should comply with AS/NZS1337:1997 Recommended practices for occupational eye protection.</li> </ul>
 Impact to head.	<ul style="list-style-type: none"> <li>• Hard hats should be worn where there is a risk of impact, falling object or any other hazard that may lead to an impact to the head. Australia New Zealand Standard (AS/NZS) 1801 should be referred to in selecting the right level of head protection for the job.</li> <li>• Within our industry, hard hats are more commonly worn in beef operations where the sheer size of the animal or carcass presents a potential hazard when performing a job task, for example, in areas where sticking or hoisting occurs and where carcasses may reflex kick or fall.</li> </ul> <p><b>Practical tips:</b></p> <ul style="list-style-type: none"> <li>• Inspect and replace a shell that shows signs of wear, scratches or gouges. Thoroughly check after a major impact.</li> <li>• Hard hats have a life of up to 3 years from the date of issue.</li> </ul> <p><b>Bump Hats</b></p> <ul style="list-style-type: none"> <li>• Bump hats are a lightweight polyethylene cap that provides protection against bumps and scalp lacerations in areas with low head clearance. They do not offer a high degree of fall or impact protection and should not replace or be used as a hard hat. However, they are a practical control for low impact hazards.</li> <li>• Different coloured bump hats are often worn in the NZ meat industry to signify who is a supervisor or quality control etc. This has less to do with safety and more to do with recognition of roles on a busy production floor.</li> </ul>

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 <p>Biological substances on chest, abdomen and groin area.</p>	<ul style="list-style-type: none"> <li>• Protection from biological substances e.g. blood, faeces, urine, intestines, will require a moisture-resistant apron or smock, particularly in areas such as offal rooms, tripe rooms and slaughter floors.</li> <li>• Protection from lacerations or stab injuries for operators who use a knife will require the use of a protective apron such as a mesh apron. Such aprons should be suitably constructed to avoid neck strain i.e. not designed with a halter neck strap but rather a crossover back strap that connects to the waist portion of the apron.</li> </ul>
 <p>Hot water on legs and feet.</p>	<ul style="list-style-type: none"> <li>• Rubber boots, long aprons, leggings or spats worn outside boots are all potential protective mechanisms for the feet and legs of workers requiring protection from hot water or other fluids. Leggings should always be worn over the top of rubber boots to prevent hot water entering the boots.</li> <li>• The tread pattern on rubber boots needs to be checked to ensure it maintains its non-slip grip on the floor.</li> <li>• Steel cap boots need to be provided in areas where there is the risk of toe crush injuries e.g. maintenance workshops; cold stores; stockyard.</li> </ul>
 <p>Noise</p>	<ul style="list-style-type: none"> <li>• See previous sub-section on noise.</li> </ul>
 <p>Exposure to cold.</p>	<ul style="list-style-type: none"> <li>• Thermal protective clothing should be fit for the purpose it is designed for and can include freezer suits, insulated boots, head and face protection, gloves and suitable clothing to protect against exposure to cold.</li> </ul>
 <p>Respiration.</p>	<ul style="list-style-type: none"> <li>• Respiratory protection may be required in certain areas, such as when mixing powdered chemicals. Such equipment must comply with AS/NZS 1715 or the relevant Safety Data Sheet.</li> </ul>

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## EMPLOYER'S NEED TO:

- Provide employees with appropriate personal protective equipment, and ensure it is replaced when damaged.
- Train people to use and care for their personal protective equipment.
- Ensure all staff wear their personal protective equipment when and as required.



## EMPLOYEE'S RESPONSIBILITIES:

- Note that different companies have different policies on PPE. Make sure you follow the policies of your employer.
- Always properly use the safety clothing and equipment provided whenever you are doing a job that needs it.
- Check that the PPE fits you correctly.
- Check regularly for any faults and ask for a replacement if faulty.
- Follow the cleaning and maintenance instructions correctly.
- Store the PPE as instructed.

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### FURTHER INFORMATION:

- *Employee use of Personal Protective Equipment* – available from <http://www.dol.govt.nz>.
- *AS/NZS1337:1997 Recommended practices for occupational eye protection.*
- *AS/NZS 1337.1:2010 Personal eye-protection - Eye and face protectors for occupational applications.*
- *AS/NZS 1337.6:2012 Personal eye protection - Prescription eye protectors against low and medium impact.*
- *AS/NZS 2161.1:2000 Occupational protective gloves - Selection, use and maintenance*
- *AS/NZS 1801 Occupational protective helmets.*
- *AS/NZS 2210.1:2010 Safety, protective and occupational footwear - Guide to selection, care and use.*
- *AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment.*
- Get advice from your local safety supplier.

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## 3.6 FIRST AID

Employers are required to provide first aid that takes into account the individual circumstances of their workplace.

First aid requirements at work fall into three categories:

- Suitably stocked first aid kits and facilities.
- An appropriate number of suitably trained first aiders.
- Information for employees about first aid arrangements.



### EMPLOYER'S NEED TO:

- Make sure that injured people receive first aid as soon as possible.
- Make sure you have an appropriate number of suitably trained first aiders.
- Make sure you have adequate first aid kits and facilities in your workplace.
- Make sure you check first aid kit contents regularly as well as immediately after they have been used.
- Make sure information is provided to employees about first aid arrangements.



### FURTHER INFORMATION:

- *First Aid for Workplaces – A Good Practice Guide* – available from [www.osh.govt.nz](http://www.osh.govt.nz)
- *Health and Safety Forms* – available from [www.osh.govt.nz](http://www.osh.govt.nz)
- <http://www.poisons.co.nz>

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## 3.7 CLEANING AND SANITISING

In the meat industry, because of health and safety and food safety issues with cross-contamination, the entire plant is cleaned and sanitised to ensure the state of cleanliness meets the appropriate facility levels.



### HAZARDS:

The main safety issues are:

- The water is **extremely hot** – up to 84 °C (much hotter than at home).
- The water is under high pressure.
- The cleaning and sanitising chemicals used. A detergent is used to dissolve the fat and protein. A sanitiser is used to kill bacteria and therefore to sanitise the plant. Both these chemicals are hazardous.



### HOT WATER BURNS

Each year, a relatively large number of meat workers suffer hot water burns. Most of the burns are to feet and lower limbs, but can also occur to the face, arms and legs. The large majority of these burns occur while washing down.

The most serious of these burns occur to the feet when hot water enters the gumboot. Even though it only takes seconds for a gumboot to be removed, this is long enough for the hot water to do major damage to the skin and underlying tissues of the foot and ankle.

Burns cause immense pain and discomfort and can keep an employee away from their job for a considerable time, meaning that hot water burns not only affect the individuals involved, but impact on the industry as a whole.

Fortunately the causes of hot water burns are well known and can be effectively managed to considerably reduce the likelihood of injury.

The main cause of hot water burns is due to splash back from equipment or walls while hosing down at the end of the shift and usually only involves the person undertaking the cleaning.

Although the possibility of a hot water splash back may never be fully eliminated, there are several factors that should be considered when trying to minimise the risk.



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## PREVENTION OF HOT WATER BURNS

The following personal protective equipment (PPE) is considered a minimum and should be stipulated and supplied by the company for any wash down tasks involving hot water:

- Waterproof protective clothing should be worn which covers the legs, feet, and hands as an absolute minimum, for example:
  - Waterproof overalls or leggings, or a full length waterproof apron or poncho covering arms and body with waterproof gators worn over the top of gumboots;
  - Water proof gloves; and
  - Gumboots.
- Ideally the upper body and arms should also be covered with waterproof clothing.
- The protective clothing must be worn in a manner that ensures hot water runs to the ground and does not get behind the PPE e.g. filling gumboots or gloves.
- Eye protection is also required when using cleaning chemicals such as foam detergents and sanitisers.



In addition, consideration should be given to those one-minute, in between, quick rinses with hot water.

A number of burns occur when no “actual” wash-down is being undertaken, but when an employee gives the work area a quick rinse during the normal working day.

For these situations the employee should wear a full-length waterproof apron. The apron must be readily available and should be placed where the hose is stored when not in use.

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## WASH-DOWN EQUIPMENT

A number of accidents occur when the hose suddenly snags, momentarily causing the person to lose control of the direction of water spray. To minimise this, ensure that:

- areas to be hosed are free of obstacles that can snag the hose;
- the hose is laid out in advance, with no twists;
- if the hose does become snagged, turn the hose off and free the hose; do not attempt to continue cleaning down while pulling at the hose to clear the snag; and
- try to clean down when the least number of people are around, i.e. at the end of the shift when the chain has stopped.

### Trigger type gun nozzles:



- Modern nozzle designs have a trigger type arrangement and are shielded to prevent heat transfer of the stainless to the operator's hands.
- Although more expensive than a piece of stainless tubing fixed at the end of the hose, proper nozzles give the operator greater control and stops the bad practice of "shutting off" the flow by bending over the hose (this practice stresses the hose and serious burns have occurred when the hose suddenly splits).
- Trigger type nozzles will last a long time, but do require a little more care (i.e. not simply thrown on the floor when finished) and the hot water supply should be turned off at the wall when the hose is not in use.
- These nozzles also give up to 90% water savings (for the same cleaning effect) when compared with stainless tubing and open-ended hoses.
- When using the nozzle be aware of potential risks such as:
  - stored energy behind the nozzle when not shut off at the wall and the greater pressure when trigger is released;
  - pressure shock with sudden shut off of the trigger, which may cause a burst hose or the hose coming away from the wall;

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- potential OOS injuries from prolonged use of the trigger – the use of a trigger lock means that the risks associated with uncontrolled hoses still exists.



### OTHER SAFETY ISSUES WHEN CLEANING INCLUDE:

- During cleaning operations, machinery may need to be dismantled and guards removed. There must be no running of machinery under these conditions, otherwise serious injury may result.
- Machines incorporating heavy or sharp cutters present a handling risk to workers. Strains and falls may result from incorrect handling of heavy items of plant.
- There are dangers associated with electrical equipment in wet conditions, particularly if hosed down at high pressure.
- To carry out satisfactory cleaning of plant, access may be needed to equipment or places not otherwise approached, for example, high level pipes, overhead conveyors or very large machines.
- Persons entering confined spaces for cleaning may be affected by harmful fumes, vapours or lack of oxygen. Typical confined spaces may include cookers, boilers, tanks, pits, and sewers.



### PRACTICAL ADVICE:

- **Ensure adequate supervision and written cleaning procedures incorporating safety measures are in place.**
- If dismantling includes removal of guards, some form of positive isolation must be provided.
- When cleaning is finished the person responsible for the operation should check that the work has been completed properly. All machine components, including guards should be replaced and in full working order. The operation of guards, interlocks, emergency stops and other controls should be checked.
- Where heavy or unwieldy components are to be moved, arrangements should be made for safe handling. This might include providing lifting equipment for the operation or ensuring that adequate manpower is available.
- Machines incorporating sharp cutters, e.g. slicers, should have suitable devices for safe handling during dismantling and cutter cleaning.
- Precautions should be taken to prevent ingress of water to electrical equipment. Employees using high-pressure jets should be instructed and

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supervised to minimise the risks both to the equipment and operators. It should be recognised that even protected electrical equipment is unlikely to withstand direct high pressure jetting and fogging.

- Where practicable, permanent access and working platforms should be provided for cleaning. Otherwise, where cleaning at height is required, safe work at height systems must be followed.
- Be aware of the potential danger of drop down tables, removable table tops, and hinge gates.
- Persons entering a confined space for cleaning must do so under a confined space entry permit system.
- Every chemical container must be clearly labelled with its contents and correct method of use. Dispensing from bulk into other containers should only be permitted after the container has been thoroughly cleaned and re-marked to indicate the new contents. Old markings should be removed. The use of food containers for this purpose should be prohibited. In addition, chemicals should not be transferred by pouring direct from the container but should be transferred by the use of suitable dispensing equipment.
- Mixtures of certain chemicals can produce toxic gases. Violent chemical reactions may also occur. This can be a particular problem if incompatible chemicals mix in drains. Instructions for the proper use of the chemicals should be specified and the procedures monitored by supervision.
- Supplies of acids and alkalis should be physically separated.
- Concentrates should be kept well away from water supplies and should be added to water; not water to concentrate.
- The recommended dilution rate should be observed, i.e. solutions should not be prepared at increased strength.
- Eye wash stations and drenching facilities should be provided at suitable locations.



### EMPLOYER'S NEED TO:

- Ensure safety information about hazardous chemicals is readily available. This information should include details about the potential hazards, the precautions to be taken, first aid action and the proper method of use. These details are available from the suppliers in Safety Data Sheets.
- Ensure all staff are trained in the hazards, appropriate precautions and how to clean and sanitise correctly and in a safe manner.
- Ensure all staff are provided with the correct wash-down PPE and that safe work practices are enforced.

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## EMPLOYEE'S RESPONSIBILITIES:

- Always follow the correct cleaning procedures.
- Always wear the appropriate PPE to protect eyes, legs, feet and hands.
- The protective clothing should be impervious to the chemical being used and will normally consist of waterproof overalls or leggings, or a full length waterproof apron with waterproof gators worn over the top of gumboots; water proof gloves; gumboots and safety glasses.
- Ensure areas being cleaned are clear of other personnel before hosing with water.
- Do not direct water at electrical equipment.
- Attend the appropriate training in hazards, precautions, etc.



## FURTHER INFORMATION:

*Refer to Section 10 Chemical Handling.*

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## 3.8 PERSONAL HYGIENE

We can see from previous information in this guideline, that when working in the meat industry, hand washing will be one of the most important and regular things you do to keep safe and free from infection or illness.



### When washing your hands:

- Wet your hands first.
- Apply a generous amount of soap or cleaning solution from the dispenser.
- Scrub your hands thoroughly for at least 20 seconds. Scrub under finger and thumb nails as well.
- Rinse off completely.
- Dry your hands with a paper towel or hand dryer for at least 20 seconds.
- Ensure your hands are dry and any wound, cut or abrasion is covered before you put on your gloves.

## BALACLAVAS, BEARD NETS AND SNOOD MASKS

If you are wearing any of these and they become contaminated with urine, blood or faeces, change them and wash your face and beard immediately. The longer you keep wearing contaminated clothing next to your mouth, the greater the risk of infection and illness.



### FURTHER INFORMATION:

*Hand washing in the workplace* - available at:  
[www.health.govt.nz](http://www.health.govt.nz)

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## 3.9 HOUSEKEEPING

Slips, trips and falls are a prominent cause of workplace injury within the New Zealand meat industry. There is a strong link between manual handling e.g. lifting, pushing, pulling, carrying and slips, trips and fall injuries.

There are generally four main contributing factors in slip, trip and fall incidents:

- Floor surface.
- Footwear.
- Cleaning and maintenance.
- Human behaviour.



### To avoid slips, trips and falls:

- Have a nonslip floor surface.
- Wear good grip footwear and clean boots free of fat or retained product. We have talked about this earlier in this guideline. Good regular boot washing will assist in the prevention of slips in the meat industry.
- Regularly clean floors, especially in high traffic areas. Caution: When cleaning floors, always try and do this away from peak times; remove the residual cleaning solution completely and place signs warning workers if the floor is not completely dry.
- Remove any hoses, cords or objects that are lying on the floor after maintenance or production.
- Keep your work areas free from obstruction, obstacles or barriers to a clear pathway.
- Walk; don't run.
- Use the hand rails - that's why they are there!



### FURTHER INFORMATION:

*Prevention of slips trips and falls* - available at [www.dol.govt.nz](http://www.dol.govt.nz)



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## 3.10 WORKING ALONE

Working alone is work carried out in an area where normal means of contact (e.g. verbal, sight) with other staff are not available, so there is no one to notice if something goes wrong or to render assistance.

Examples of where this may occur in the meat industry are working alone in a freezer; in yards; or as a night watchman.

When a person works alone, the potential risk of existing hazards is increased to the extent that extra precautions are needed.

Under the HSE Act 1992, employers are required to identify hazards in the workplace, to do a risk assessment and consider what steps are practicable to ensure the safety of the employee and to implement controls.

The Guidelines for Guarding Principles and General Safety for Machinery provide guidance for that process. This includes:

- If a risk of the employee suffering harm is assessed, then appropriate control measures need to be considered. Providing a monitoring device and ensuring that it is monitored (e.g. a bracelet with a movement sensor) or a remote surveillance system (e.g. closed circuit television) could be practicable steps. Appropriate control measures would evaluate time for an emergency response.
- In a case where there is little or no risk to the employee from the machinery, it might be decided there is no need for a monitoring system, apart from a means whereby the employee can summon help if required, e.g. an alarm, a “man down” radio, or a telephone.
- In some high risk situations, a person should not work alone with machinery unless there is a buddy system in place.



### FURTHER INFORMATION:

*Working alone requirements* – [www.dol.govt.nz](http://www.dol.govt.nz)

*Guidelines for Guarding Principles and General Safety for Machinery* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

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## 3.11 ALCOHOL AND OTHER DRUGS

Problem drinking and other drug use, in terms of the workplace, is any drinking or other drug use that occurs, either inside or outside of working hours, which may put workplace safety at risk.

Drinking and other drug use creates a range of problems in the workplace. These place at risk not just the employee, but also the employer, other employees, contractors, members of the public, customers and visitors.

Employees with alcohol and other drug problems face a higher chance of injuring themselves on the job.

Work colleagues of employees with alcohol and other drug problems face:

- Increased risk of injury and dispute.
- Increased workload and levels of distress.
- The possibility of needing to work harder, re-do work and/or cover for their work colleague.

It is clear that alcohol and other drug use can affect safety, and that affected employees can be a danger to themselves and others.

### WHAT ARE OUR LEGAL OBLIGATIONS?

Employers have a responsibility under the Health and Safety in Employment Act 1992 (HSE Act) to ensure the safety of employees while at work, including the provision of a safe workplace.

The HSE Act 1992 requires employers to eliminate, isolate or minimise, in that order of priority, all significant hazards. In this instance, a significant hazard could be the behaviour of an employee who is under the influence of alcohol or drugs. The definition of a hazard under the HSE Act 1992 specifically includes the behaviour of a person under the influence of drugs or alcohol.



#### THE LAW:

**The definition of a hazard from the HSE Act 1992 (Amendment 2002) includes:**

- i) a situation where a person's behaviour may be an actual or potential cause or source of harm to the person or another person; and
- ii) without limitation, a situation described in subparagraph (i) resulting from physical or mental fatigue, drugs, alcohol, traumatic shock, or another temporary condition that affects a person's behaviour.

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The HSE Act 1992 also requires employees to take all practicable steps to ensure that they are not harmed at work, and to ensure that they do not harm anyone else by their action or inaction. Therefore, if you cause harm to yourself or to another person at work while under the influence of alcohol or drugs, you are likely to be in breach of your legal duties under the Act.

Effective workplace alcohol and drug policies assist both employers and employees to fulfil these legal obligations and benefit all parties in the workplace.

Drug and alcohol abuse in the workplace can only be effectively managed if both individuals and organisations work together. The encouragement of self-management and awareness is essential.

## WHAT SHOULD BE DONE?

Tackling problem alcohol and drug use is a daunting and often complex process but the first important step is to develop a robust alcohol and drug workplace policy in consultation with employees and their representatives covering aspects such as:

- The employers' position on drinking and drug use at work.
- An employee's legal duties to ensure they are not harmed and do not cause harm to others at work.
- When the employer may carry out drug testing.
- The employers' drug testing regime.
- The consequences for employees of breaching the policy.
- Recognition and help for those with alcohol and drug-related problems.
- Alcohol and drug education.

The policy should be part of an overall occupational health and safety strategy and be integrated into all employment agreements. It is important that the policy is adhered to by all staff and is applied consistently. The approach to alcohol and drugs needs to ensure that the relationship between employee privacy and safety is balanced.

Any testing should meet AS/NZS 4308:2008 or subsequent amendments and be carried out in accordance with the alcohol and drugs policy and the law in relation to circumstances which give rise to the employer having the right to conduct drug testing.



### FURTHER INFORMATION:

***ACC4460 Alcohol and other drugs (Employer guide)*** – available from <http://www.acc.co.nz>

***AS/NZS 4308:2008 Procedures for specimen collection and the detection and quantitation of drugs of abuse in urine*** – available from [www.standards.co.nz](http://www.standards.co.nz)

# SECTION 3: WORKING ENVIRONMENT

## 3.12 STRESS AND FATIGUE

Stress and fatigue can affect people at work, their safety and the safety of others. Stress has a variety of meanings but the common picture is of a person having difficulty coping with some aspect of their life.

Fatigue can occur for many different reasons — physical, mental or emotional. Being tired, “drained” or exhausted are familiar feelings for everybody. These feelings, if severe or prolonged, can lead to a person becoming “unsafe”. Laboratory experiments indicate, for example, that people who have gone without sleep for a long period are just as impaired as people who are over the legal limit for alcohol.

Stress can contribute to fatigue, and this has obvious implications for workplace safety.

### RESPONSIBILITIES UNDER THE HSE ACT

Under the HSE Act 1992, employers are required to ensure the safety of employees while at work, including the provision of a safe workplace. They must take all practicable steps to ensure their employees are not exposed to hazards in the work place. The Act requires employers to adopt a systematic approach to identifying, assessing and controlling hazards at work. The definition of a hazard under the HSE Act specifically includes fatigue.

The Act requires employees to take all practicable steps to ensure that they are not harmed at work, and to ensure that they do not harm anyone else by their action or inaction. Accordingly if you are feeling stressed or fatigued you should stop any work that creates safety issues for yourself or others and inform your manager of your stress and/or fatigue.



#### THE LAW:

**The definition of a hazard from the HSE Act (Amendment 2002) includes:**

- i) a situation where a person's behaviour may be an actual or potential cause or source of harm to the person or another person; and
- ii) without limitation, a situation described in subparagraph (i) resulting from physical or mental fatigue, drugs, alcohol, traumatic shock, or another temporary condition that affects a person's behaviour.

**Employees are required (S19) to take all practicable steps to ensure:**

- they remain safe at work; and
- that any action or inaction by them does not cause harm to any other person.

# SECTION 3: WORKING ENVIRONMENT



## EMPLOYER'S RESPONSIBILITIES:

The terms **eliminate**, **isolate**, and **minimise** mean the same for stressors as they do for other significant hazards and must be explored in that order of priority.

**Eliminating** a stressor means removing it altogether.

**Isolating** a stressor means regulating and limiting employees' exposure to it – either by limiting the time of exposure or by limiting the exposure to people or groups of people specially selected or trained for the work.

**Minimising** the stressor means reducing its extent and impact or reducing the time for which people are exposed to it.

Primary, secondary, and tertiary prevention methods exist to eliminate, isolate, or minimise stressors. The approach used will depend on the resources available, the category the work falls into and what you are aiming to achieve.

**Primary prevention:** creating a healthy place of work. Identifying and controlling stressors so that the work is interesting, rewarding and paced within the person's capabilities (i.e. elimination of the hazard where that is possible).

**Secondary prevention:** improving the fit between the person and the job by selection, on the job training, performance feedback and monitoring of problems (i.e. isolation of the hazard to adequately trained and equipped personnel).

**Tertiary prevention:** helping the person experiencing stress or harm that may have resulted from it (also called stress management).

Employees from all levels of the organisation should be involved in the development of solutions that are specific to each workplace. All staff have a part to play in managing and preventing workplace stressors.



## EMPLOYEE'S RESPONSIBILITIES:

As an employee, you also have obligations for safety. In this context, you should:

- Use opportunities for recuperation responsibly and ensure that your personal life choices (e.g. use of alcohol or recreational drugs or working second jobs which prevent adequate rest) don't pose a risk of harm to yourself or other people at work.
- Inform your manager if you are feeling stressed or fatigued and stop any activity that poses safety issues to yourself or others in the workplace.

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### FURTHER INFORMATION:

*Stress and fatigue - Advice for employers and employees on reducing the impact of stress and fatigue* – available from [www.business.govt.nz](http://www.business.govt.nz)

*Stress and fatigue: Their impact on health and safety in the Workplace* – available from [www.business.govt.nz](http://www.business.govt.nz)

*Healthy Work: Managing stress and fatigue in the workplace* – available from [www.business.govt.nz](http://www.business.govt.nz)

*The Blokes Book Two* – available from [www.theblokesbook.org.nz](http://www.theblokesbook.org.nz)

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## 3.13 ANHYDROUS AMMONIA REFRIGERANT

A number of chillers, blast-freezers and cold stores operate with anhydrous ammonia as their refrigerant. (Other refrigerants may also be used. Refer to the relevant Safety Data Sheets for information on these substances).

Anhydrous means “without water”. Anhydrous ammonia is a clear, colourless gas at standard temperature and pressure conditions and has a very characteristic odour.

When anhydrous ammonia is released from pressure to the atmosphere, the temperature drops to minus 33°C. At this temperature, ammonia will freeze-burn human skin on contact. Clothing will be frozen to the skin. Clouds of anhydrous ammonia are subject to the unpredictability of air movement; they will change direction as quickly as the breeze. Clouds of ammonia may be nearly invisible in some atmospheric conditions, but they appear as white clouds when the atmosphere is damp. Anhydrous ammonia is heavier than air and will hug the ground and settle in low areas of the surrounding landscape, such as service tunnels and basements.

Anhydrous ammonia is attracted to and reacts strongly with water to form ammonium hydroxide – a strong alkali. Accordingly, ammonia gas is attracted to and combines with moisture on your body, especially moisture in the hair, eyes and lungs. This will result in severe irritation or burns.

Anhydrous ammonia can react explosively with chlorine and hypochlorites or other strong oxidising agents and is also flammable at gas concentrations of 15.5% – 25% in air.



### HAZARDS:

Anhydrous ammonia is compressed and held under pressure as a liquid for transport, storage and use as a refrigerant. Liquid anhydrous ammonia expands greatly when released into the atmosphere and can produce a vapour cloud:

- The cold temperature at point of release condenses moisture in the air.
- May rapidly freeze everything it touches.
- Extreme respiratory danger.
- Downwind hazard.
- May hug the ground due to weather conditions and cooling of surrounding air.

### HEALTH EFFECTS

- Ammonia is considered harmful by all exposure routes.
- Liquid splashes or spray may cause freeze-burns. Contact with skin will result in severe irritation or burns.
- A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury. Liquid splashes or spray may cause freeze-burns to the eye.
- Is an irritant to the mucous membranes of the respiratory tract (airways). Exposure to concentrations above the Exposure Standard of 25 ppm may



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cause irritation to the eyes, nose and throat. Higher concentrations may cause breathing difficulty, chest pain, bronchospasm, pink frothy sputum and pulmonary oedema. This may further predispose the patient to the development of acute bronchitis and pneumonia.

As you can see, anhydrous ammonia is a toxic gas. Be familiar with your site's Ammonia Release Emergency Response Plan.



### EMPLOYER'S NEED TO:

- Ensure there is an Ammonia Release Emergency Action Plan in place.
- Ensure all staff are trained in this Emergency Action Plan.
- Ensure all HSNO requirements for anhydrous ammonia are complied with.



### EMPLOYEE'S RESPONSIBILITIES:

- Ensure you are familiar with the Ammonia Release Emergency Action Plan.
- Immediately report any signs of ammonia leakage (vapour leaks or odour).



### FURTHER INFORMATION:

***AS/NZS 2022:2003 Anhydrous Ammonia – Storage and handling*** – available from [www.standards.co.nz](http://www.standards.co.nz)

***Anhydrous Ammonia Safety Data Sheet*** – available from suppliers.

***Refer to Section 13: Emergency Management*** for further information on toxic fumes and gas emergencies.

# SECTION 4: HIGH RISK ACTIVITIES

## 4 HIGH RISK ACTIVITIES

In this section, we will cover the following high risk activities:

- Use of knives.
- Manual handling.
- Work contributing to zoonotic diseases.
- Forklifts.
- Working at height.
- Confined Space Entry.

### 4.1 USE OF KNIVES

Knives are widely used throughout the meat industry. The most common type of knife injury in the meat industry is cuts to the non-knife hand or arm, although cuts can occur on both hands as some tasks require swapping of hands while cutting. Other common knife injuries include:

- Cuts to the hand holding the knife that occur when the hand slips off the handle (e.g. run-through injuries).
- Cuts that occur with a reverse grip while pulling back towards the body.
- Inadvertent cuts to another person where people are working too close (e.g. left-handers working close to right-handers).

Knife hands are also susceptible to MSD, which stands for 'musculoskeletal disorders' particularly in the hands, wrist and forearm.

Potential MSD risk factors include: wrist twisting with longer blades; handle pressure points; increased grip force and fatigue onset with poor fitting gloves or multiple layers; and restricted blood flow through tight gloves, glove tensioners or tape around wrists.

Barriers include a lack of good science on which to base decisions; a wide range of product types to trial and select from; and personal preferences and habits regarding both knife and glove use.

#### **Suggested interventions:**

1. Gloves – trial different gloves and glove combinations to find the best fitting range for staff, the least number of layers, and the least effect on usability.
2. Different knife designs (handle design, blade length) are available to provide some choice for staff to meet individual preferences.
3. Trial knives with different tang designs as a way of reducing run-through risk.
4. Effective training in knife sharpening and knife safety.

Note that gloves provide protection at the expense of hand performance, to a greater or lesser degree; therefore participative selection and trial are important. It is essential that they are trialled in specific contexts, and that all effects (protection, MSD risk, performance, maintainability, durability, life cycle costs, etc) are taken into account.

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## HOT WATER FOR STERILISATION

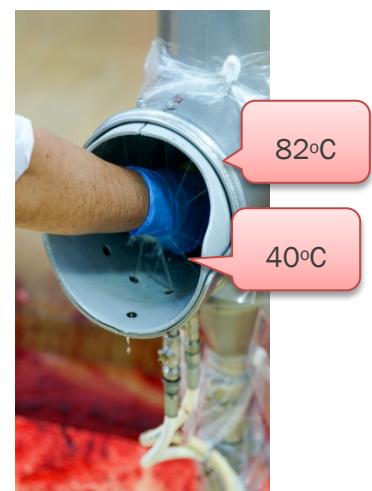
Another hazard for users of knives and other cutting equipment is the use of 82°C hot water for sterilisation.

Rubber gloves can be worn under or over chain mesh and cut-resistant gloves for splash protection.



Hands must not be placed into the 82°C water because of the risk of burn if there is a hole or cut in the rubber glove.

Use the 40°C wash/rinse stations provided for rinsing of knives and gloves.



The sterilisers shown in the middle photo and the photo on the right have two temperature sections:

- The first sections have water at 40°C for rinsing the glove and knife.
- The second sections have water at 82°C for sterilising the knife.

Take particular care when using the type of steriliser shown in the photo on the right that you ensure the knife is placed fully into the 82°C hot water.

# SECTION 4: HIGH RISK ACTIVITIES



## Workplace Knife Policy:

Each workplace should have a policy in place that covers:

- Selection of the correct knife for the task, including considerations such as comfort; fit; handle diameter and material; and blade shape and length.
- Protective equipment to use with the knife, i.e. protective gloves, arm guards, mesh aprons, scabbards (including where and when to use this equipment).
- Training by a suitably qualified person on:
  - sharpening techniques;
  - steeling techniques;
  - general handling of knives; and
  - safe work techniques.
- Close supervision or a buddy system until the new worker is suitably trained.
- Storage of the knife, its cleaning and sanitation techniques.
- Provision of a clearly understood procedure for the identification and safe disposal of knives which have worn to a degree that there is a risk of the blade snapping.

Knives should be kept sharp. Parallel grinding can be used to reduce cut resistance and to make the knife easier to sharpen.

Constant-angle setter devices can be used to make it easier to get the correct bevel angles.

Regardless of whether setters or bench stones are used for knife sharpening, knife-hands need to be trained in the correct sharpening and steeling methods.

Note: Worn knives should be disposed of appropriately.



# SECTION 4: HIGH RISK ACTIVITIES

## PPE FOR KNIFE HANDLING



### Chain Mesh Gloves:

- Mesh gloves give a high level of protection against cuts and lacerations when using a knife. They come in different cuff lengths. We know that the NZ meat industry still has a high level of lacerations to the inside of the forearm especially when a boner is cutting towards them. This has led to the practical control of using a high cuff length mesh glove that provides protection to this area or alternatively, an arm guard.
- A water-resistant glove can be worn under the mesh glove to provide protection against splashing from hot water during sanitising of the knife or to keep the hand dry and warm when working in the cooler temperature of a boning room. A glove worn underneath also protects against the metal mesh rubbing against bare skin.
- **Practical Tip:** Do not hit your mesh glove against a table or any other surface to remove fat or residue, as it fractures the links and damages the glove, making it less effective. Proper washing will remove any contamination.

### Cut-Resistant Gloves:

- Cut-resistant gloves provide less protection than mesh gloves but can be utilised where it is not practical to wear a mesh glove.
- They usually include a thick knit for use on the non-knife hand and a thin knit for the knife hand. Each meat worker requires up to three cut-resistant gloves per hand to cover for the glove in use; the soiled glove being washed; and the clean glove drying.
- Benefits of cut-resistant gloves include:
  - The gloves offer increased protection from knife cuts when worn on both the knife hand and non-knife hand, compared with wearing no gloves at all. This particularly relates to the reduction of 'run-through' lacerations on the knife hand.
  - The gloves keep the hands warm in cold work environments and when handling cold/wet meat.
  - The gloves offer a better fit to the hands and are more comfortable than the chain mesh gloves.
  - Rubber gloves can be worn under the gloves, or over the thin cut resistant gloves.
  - Cut-resistant fibre gloves can be worn without water resistant gloves over them in temperature controlled boning rooms.
  - Changing the knife between hands is easier with cut-resistant gloves as compared to impossible with chain

# SECTION 4: HIGH RISK ACTIVITIES



mesh gloves.

- The finger tips of these gloves allow improved dexterity of fingers than those of chain mesh gloves.
- The reduced weight of the glove, compared to chain mesh, reduces tiredness of hand and arm.
- Once accustomed to the glove, the grip of the knife handle is not diminished by wearing a thin cut-resistant glove.
- These gloves can be an effective control in the prevention of knife injuries; however are not a replacement for good training and technique. Remember; they are cut resistant only and even a level 4 glove worn properly can be penetrated if using poor technique and excessive force (often due to a blunt knife).
- There are differing PPE policies within the industry on the wearing of mesh and cut resistant gloves. You need to refer to the PPE policy your company has in place. Almost always a nitrile (surgical type glove) will need to be worn over the CRG and taped securely at the wrist to prevent getting your glove wet. Ensure your glove is the correct size as wearing a glove too small and performing physical repetitive work can cause restriction of blood flow to the hands and fingers.

## Chain Mesh Aprons:

- Mesh aprons give a high level of protection. They are very effective in avoiding knife injuries to the abdomen and upper torso. Like mesh gloves, they need to be treated with respect and are costly pieces of protective equipment that your employer has invested in for your safety.



## EMPLOYER RESPONSIBILITIES:

### Ensure knife-handlers are trained in:

- Selection and use of the most suitable knife for the job.
- Holding the knife correctly (grip should be firm but not excessively tight).
- Sharpening a knife.
- Steeling a knife to maintain the cutting edge.
- Correct use of Personal Protective Equipment.
- Correct cutting methods.

# SECTION 4: HIGH RISK ACTIVITIES

- Using knives near other employees.
- Cleaning and sanitising the knife and steel.
- Correct use of exercises to prevent MSD (Musculoskeletal disorders).

## Other points:

- Ensure sufficient space between workers (left handed workers should not be positioned next to right handed workers).
- Ensure boning or slicing work is performed at an ergonomically safe working height.



## EMPLOYEE RESPONSIBILITIES:

- Use the safety PPE that is provided for you, ideally:
  - A mesh glove with high cuff length on the non-knife hand.
  - A cut-resistant glove on the knife-hand.
  - A mesh apron where the task entails the knife blade passing across the abdomen or coming towards the body.
  - Make sure your steel is fitted with a guard.
- Keep knives in a pouch when not in use. Never place knives on shelves, edges of tables or any other places from which they may fall.
- Knives should be kept sharp at all times. A sharp knife is essential in reducing the force required to make a cut.
- Keep your mind on what you are doing when using, sharpening or steeling a knife.
- Beware of your surroundings and the people working within it.
- Never use your knife to grab meat.
- Keep workstations and cutting surfaces clear and free from a build-up of processed products.
- Never try and catch a falling knife; stand back and let it fall.
- Use good posture. Positions that place stress on the body, such as using a knife with your wrists bent, can result in injury. Ensure you avoid working with your hands or wrists held in a bent or twisted position.
- Do “muscle minding” exercises to restore blood flow to hands, wrist and forearms.



# SECTION 4: HIGH RISK ACTIVITIES



**Muscle Minding tips (refer to the “Muscle Minding” guide and associated video):**

- Use frequent micro-pauses and muscle exercises to restore blood flow.
- Sharpen your knife correctly.
- Use stretch and warm-up muscle exercises.
- Hold your knife at the correct angle.
- Understand the elements of the knife.
- Adopt comfortable postures.
- Stand close to workstations; and
- Develop rhythm.



## **FURTHER INFORMATION:**

- ***Muscle Minding: A guide for the Prevention of OOS in the Meat, Poultry and Fish Processing Industries*** – available from [www.osh.govt.nz](http://www.osh.govt.nz)
- ***Reducing Strains and Sprains in the Meat Industry***, available from [www.acc.co.nz](http://www.acc.co.nz)
- ***Knife Sharpening: Sharpening and maintaining the cutting edge***, a video available from the New Zealand Industry Training Organisation. Also can be viewed on YouTube at <http://www.youtube.com/watch?v=mg9a31UmoS8&feature>
- ***Guidelines on the selection and use of cut resistant gloves in the meat industry***, available from [www.safework.sa.gov.au](http://www.safework.sa.gov.au)
- ***AS/NZS 2161.7.2:2005 Occupational protective gloves - Protection against cuts and stabs by hand knives - Gloves and arm guards made of material other than chainmail.***
- ***BS EN ISO 13998:2003 Protective clothing. Aprons, trousers and vests protecting against cuts and stabs by hand knives.***

# SECTION 4: HIGH RISK ACTIVITIES

## 4.2 MANUAL HANDLING: SPRAINS & STRAINS

Most tasks and activities you will perform in the meat industry involve some form of manual handling.

The OSH 2001 Code of Practice for Manual Handling defines manual handling as “Any activity requiring a person to interact with their environment and use any part of their muscles or skeletal system to lift, lower, push, pull, carry, throw, move, restrain or hold any animate, or inanimate, object.”

So, manual handling is not only lifting, carrying, etc. but also relates to jobs that involve repetitive movements or working in awkward positions for extended periods; these tasks can lead to cumulative sprains and strains.

Musculoskeletal Disorders (MSD) is a term used to describe a wide range of conditions that affect muscles, tendons, bones and joints (the musculoskeletal system). These occur when the demands of manual handling are too great, resulting in discomfort, pain, or an injury. MSD can either happen suddenly or occur gradually over time. They can involve any part of the body but are often related to the body parts involved in the work tasks (i.e. upper limbs, neck and trunk). There are many other terms used to describe some MSD (e.g. RSI, OOS, work related upper limb disorders) as well as specific diagnoses (e.g. rotator cuff syndrome), however the term MSD is used here for consistency with international literature.



MSDs are very common in meat processing. They account for more than half of both the number and cost of ACC compensation claims for the industry each year. In 2005-06 the cost of new and on-going MSD claims for meat processing was over \$12 million. Meat processing also has the highest MSD incidence rate when compared with other similar NZ industries.



Early intervention is extremely important for effective management of MSD. To achieve this, it is essential to get a culture of early reporting of discomfort and pain.

MSD interventions are more likely to be effective when implemented as part of a programme, rather than individually.

Reducing MSD incidence therefore requires identifying the wide range of risk factors (primary and secondary), along with any implementation barriers, putting them in some order of priority and then systematically implementing an equally wide range of interventions over time that act on them.

It is also important to recognise that there are often advantages to productivity and product quality in many interventions, in addition to reducing MSD risk.

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The following four sub-sections have been summarised from: *“Reducing Strains and Sprains in the Meat Industry: A Resource Guide”* referenced later in this section.

## 4.2.1 PHYSICAL DESIGN: WORKPLACE AND EQUIPMENT DESIGN

MSD risks can be unintentionally built into workspaces and equipment design. For example, poor workspace geometry and overly-tight designs constrain posture and movements and may make it impossible to work equally comfortably with left or right hand dominance. In contrast, the providing of surplus space, or simply bad planning, often leads to excessive travel distances and overlap of travel routes – especially for packers / labourers.

Where these problems occur within the task cycles of multiple staff on a chain, the implications not only for manual handling and MSD risks, but also yield and quality control, can be significant.

### Suggested interventions:

1. Boning – trimming area geometry should be such that product can be dropped onto slides by boners without lifting, moving with the cut or throwing cuts (i.e. use gravity). The same applies for waste. Trimmers should be able to easily reach cuts, work on them, and transfer them to the waste and meat conveyor without excessive lifting, reaching or bending. The work area should be ideally configured to comfortably fit at least 95% of male and female staff (for heights, reaches, and clearance).
2. Provide height adjustability in workstations where large height differences (product and staff) warrant it, to prevent working with arms elevated or needing to bend forward. This can be done through adjustable stands, rails and/or work surfaces. The aim is for the task to be undertaken between shoulder and hip height.
3. Enable staff to get as close as possible to what they are working on, so that handling or applying force can be done as close to their centre of gravity as possible. Remove restrictions to foot and leg placement, and ensure work platforms extend as far as possible under the load - including the use of horizontal adjustment if required.



### Physical design questions you should ask about your site or a particular hazard:

- Can the layout be improved to keep the load close to the body?
- Is it possible to reduce handling distances and twisting actions?
- Is there sufficient space to perform the task?
- Can more space be provided?
- Are there mechanical aids that can be provided that will reduce hazards?
- Can vibration be reduced?
- Can the need for squatting, kneeling or crouching be avoided?

# SECTION 4: HIGH RISK ACTIVITIES

## 4.2.2 ORGANISATIONAL DESIGN

Implementing change without meaningfully involving the relevant staff misses the opportunity to improve the system design through drawing on their task expertise and using their injury prevention knowledge. Make sure you get input from people from all shifts!

Attitudes towards the changes, and those responsible for them, may also be improved when meaningful participation takes place.

### **Suggested interventions:**

1. Involvement of all relevant staff in the proposed changes and meaningful inclusion of their input.
2. Trialling of proposed changes at relevant stages of the design.



### **Organisational design questions you should ask about your site or a particular hazard:**

- Are employees consulted and informed about hazards and how to avoid them?
- Is there a plan for new starters and those returning to work after illness or injury?
- Can more staff be provided to cover sickness, deadlines or holidays?
- Could more information or incentives be provided to encourage safe work practices?
- Are people sufficiently fit and capable of carrying out the task?

## 4.2.3 EARLY REPORTING AND INJURY MANAGEMENT

With the gradual progression of many MSDs, it is more time and cost effective to manage early reports of discomfort, than to respond to serious and longstanding injuries that may otherwise develop. The wide range of contributory factors makes identifying and addressing the causes more difficult than other injury types (e.g. cuts).

### **Suggested interventions:**

1. Return to work / Alternative duties programmes should be designed with a list of tasks that encompass different skill levels / grades as well. Include elected H&S reps right from the start.
2. Having a robust hazard identification system for meat plants – not just a generic one or just physical hazards.

# SECTION 4: HIGH RISK ACTIVITIES

3. Early reporting of discomfort should be actively encouraged with staff.
4. Comprehensive incident investigations should be carried out to identify, and work out how to address, contributory factors.
5. Health and safety committees having the support of management, supervisors, maintenance staff and workforce, are able to move from reactive to proactive as pre-existing issues are addressed.

## 4.2.4 JOB DESIGN: TASK ROTATION

For tasks with MSD risks present, rotating onto other tasks decreases the risk of MSD injury. However, poorly designed rotation systems (such as informal/spasmodic rotation, arbitrary rotation timing, or where rotation occurs around equally physically demanding tasks) may achieve little or no reduction in MSD risk. High absenteeism also impacts on the effectiveness of job rotation systems.

### Suggested interventions:

1. Task rotation is formalised so that all staff in all tasks involved do rotate. Informal rotation has been found not to work well enough, leading to MSDs occurring; and some staff choosing not to rotate, or doing so at different times than the rotation system was designed for. These practices compromise the safety of all staff involved in the rotation cycle.
2. Task training provided to ensure that all staff are competent on all the rotation tasks before being involved.
3. The timing of, and number of tasks involved in formal rotation takes into account: task cycle length; physical requirements of tasks; available trained staff; rest tasks; travel distances; equipment/workspace adjustments.



### Job design questions you should ask about your site or a particular hazard:

- Can people be motivated to carry out tasks as safely as possible?
- Can additional appropriate personal protective equipment be provided and its use ensured?
- Can repetitive actions be avoided or the work varied to rest different muscle groups?
- Is it possible and practicable to provide more rest breaks?
- Can the duration of manual handling be reduced?
- Can maintenance systems be improved?

# SECTION 4: HIGH RISK ACTIVITIES

## 4.2.5 TRAINING DESIGN

Untrained or incomplete trained staff may exert more physical effort than is required (force, additional movements) until the tasks become fully learnt. Task pace is also slower during learning, reducing the opportunity for brief pauses or breaks between task cycles if they are on line.

The extra effort, accessory movements and reduced rest pauses all significantly increase the risk of MSD, particularly when combined with repetition and constant chain speed. Learning from other workers may result in bad practices being passed on and assumes that those providing the training have, and are able, to impart their knowledge effectively.



### Training design questions you should ask about your site or a particular hazard:

- Could more training be provided specific to the tasks being performed?
- Could more training about the hazards associated with the job be carried out?
- Could people be better trained to recognise hazardous manual handling in a task?
- Is it possible and practicable to provide regular training updates?



### FURTHER INFORMATION:

- *OSH. (2001). Code of Practice for Manual Handling* - available from [www.osh.govt.nz](http://www.osh.govt.nz)
- *Reducing Strains and Sprains in the Meat Industry*, available from [www.acc.co.nz](http://www.acc.co.nz)
- *Industry Interventions for Addressing Musculoskeletal Disorders (Strains/Sprains) in New Zealand Meat Processing. (COHFE Report Volume 8, No 5). Rotorua: COHFE.*
- *Musculoskeletal disorders in meat processing: a review of the literature for the New Zealand meat processing industry (COHFE Report Volume 7, No 1). Rotorua: COHFE.*
- Copies of both COHFE documents are available from: <http://www.scionresearch>
- *OHS Literature Summary PROHS.010* published by Meat & Livestock Australia Limited – available from [www.redmeatinnovation.com.au](http://www.redmeatinnovation.com.au)
- *Manual Handling in the Red Meat Industry* – available from [http://www.worksafe.vic.gov.au/\\_data/assets/pdf\\_file/0013/12145/manualhandling\\_redmeat.pdf](http://www.worksafe.vic.gov.au/_data/assets/pdf_file/0013/12145/manualhandling_redmeat.pdf)



# SECTION 4: HIGH RISK ACTIVITIES

## 4.3 ZOO NOTIC DISEASES

There are unique biological hazards associated with working in the New Zealand meat industry. You can be exposed to the risk of becoming ill or sick from getting zoonotic diseases. Zoonotic diseases are diseases caused by infectious agents that can be transmitted between (or are shared by) animals and humans.

The main risks are from:

Infection	Symptoms
Leptospirosis	Fever and general ill health
Campylobacter, Salmonella & Cryptosporidium	Stomach upsets: diarrhoea and vomiting
Orf	Skin problems: sores/rashes



### LEPTOSPIROSIS

Leptospirosis can make you feel unwell with general flu-like symptoms that include: headaches, aching muscles, bright lights hurting your eyes, fever or chills, nausea and vomiting. If not treated quickly, serious illness and even death can occur.

Animals can carry the leptospirosis bacteria and can shed this in their urine. Workers most at risk in a meat processing environment include:

- Hosing down yards or other areas.
- Tumbling pig carcasses.
- Removing hides or pelts.
- Taking out the bladder.
- Handling gut contents.
- Working with kidneys.
- Handling offal or pet food.
- Working in the rendering area.



- Workers are generally infected when urine gets in their eyes, nose, mouth or through cuts or cracks in their skin.
- This highlights the importance of the correct use of PPE to reduce the risk of infection through eyes, nose, mouth and cuts or cracks to skin.



# SECTION 4: HIGH RISK ACTIVITIES



## The best ways to protect yourself from leptospirosis include:

- Always wear your protective clothing, safety glasses or full face visors, waterproof gloves and boots.
- Change gloves or boots immediately if they split or leak.
- Wash your hands and forearms before eating, drinking, smoking or touching your lips, face and eyes.
- Wash your face as well if you have a moustache or beard.
- Cover cuts and abrasions with waterproof plasters.
- Wash off urine splashes immediately.

## Extra precautions in high risk areas:

Where there is a greater risk of urine splash, extra protection is needed. This can be:

- Personal protection: something to cover the face. A visor or face shield is better than goggles alone because infection can get in through your nose and mouth as well as eyes.
- Process protection: e.g. pizzle closers or pizzle clips; chutes to avoid splashing; perspex shield to cover the gut contents when they are worked on.



## Practical tip:

- If you have any doubts whether a full face shield is required, wear one for an hour when performing your usual job task.
- Then get a dry tissue or hand towel and wipe the front of the face shield.
- If it streaks or smears there's your answer!
- Remember: that splatter had the opportunity to enter your mouth, nose and eyes causing you to be unwell.

# SECTION 4: HIGH RISK ACTIVITIES



## First aid if you have been exposed to urine:

- Wash face well; flush out mouth and eyes with lots of running water.
- “Bleed” cuts; flush fresh or old sores and grazes with water. Tell your supervisor.
- See a doctor within 24 hours to get a blood sample and get treatment with antibiotics. You need early treatment for best results.
- IMPORTANT: The sample must be taken BEFORE you take any pills.
- Another blood sample will be needed in 3-4 weeks time.

## Tell the doctor:

- You work in a meat plant and may have been exposed to Leptospirosis.
- Some meat companies provide a card with information for the doctor.
- The NZ Meatworkers Union card also provides information for doctors.
- If your blood test is positive, ask for an ACC form. Leptospirosis can be an occupational disease, so all costs may be covered by your employer.
- It is also a notifiable disease, so your doctor will have to notify the public health authorities who may require investigation or follow-up.

## Watch your health:

- If you have caught Leptospirosis, you may not feel ill for a week or two. Go to the doctor if you have:
  - Headaches
  - Aching muscles
  - The light hurts your eyes
  - Fever or chills
  - Nausea or vomiting.
- Do this if you feel ill, even if you don’t think you have been exposed to animal urine. Tell the doctor that you work in a meat processing plant and may be at risk of Leptospirosis. Ask for the appropriate tests. The sooner treatment starts, the better.

# SECTION 4: HIGH RISK ACTIVITIES



## EMPLOYER'S RESPONSIBILITIES:

- Ensure all staff are trained on how they can become infected and the PPE and task precautions that must be taken to prevent against infection.
- Provide appropriate warning signage in the relevant parts of the plant.
- Emphasise the requirement for washing after any urine contact and the reporting of any splashes.
- Conduct random audits to ensure correct PPE is being worn and safety precautions are being followed.
- Consider providing staff during induction training with a wallet card to indicate to the doctor that they work in the meat processing industry.

## STOMACH INFECTIONS

Campylobacter, salmonella and cryptosporidium are three bugs found in a range of animals and food from animals. When working in a meat processing facility you will be in contact with animals and raw meat, therefore you need to ensure that you wash and dry your hands after going to the toilet and before handling food.

You can also obtain these stomach infections from home through uncooked meat and leaving leftovers to spoil.

Note: because you are working in a meat processing facility, you will need to get a clearance from your doctor before coming back to work.



## To protect yourself and your family against campylobacter, salmonella and cryptosporidium:

- Always wash (with soap) and dry your hands after going to the toilet and before handling food.
- Don't eat chicken, pork, mince or sausages unless they're well cooked and there's no pink meat.
- If you've had raw meat, chicken or sausages on a chopping board or bench, make sure it's washed before any other food goes on it.
- Don't leave uncooked food or leftovers sitting around; cover it up and put it in the fridge.
- Remember: Clean, Cook, Cover, Chill

# SECTION 4: HIGH RISK ACTIVITIES

## ORF (COMMONLY REFERRED TO AS “SCABBY MOUTH”)

ORF is a skin disease that occurs in people and animals. It is a virus, so cannot be treated with antibiotics and affects meat workers in contact with infected sheep and lambs but can also be caught from goats and deer.

You generally develop a small raised spot on your hand or fingers about 3-6 days after contact with the virus. The spot will become larger and is likely to be weepy, red and sore before it dries and forms a scab when the skin starts to heal.



### The best ways to protect yourself from Orf include:

- Cover scratches, cuts and abrasions with a waterproof dressing.
- Wear a nitrile (surgical) type glove over any other glove when working in a meat processing facility.
- Wash your hands thoroughly, before and after handling animals.



### FURTHER INFORMATION:

*Common Illness in the Meat Industry* – available from [www.acc.co.nz](http://www.acc.co.nz)

*Guidelines for the Control of Occupationally Acquired Leptospirosis* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

*Leptospirosis: Reducing the Impact on New Zealand Workplaces* – available from [www.dol.govt.nz](http://www.dol.govt.nz)

# SECTION 4: HIGH RISK ACTIVITIES

## 4.4 FORKLIFTS

Forklifts are an important tool in the work place, but they also have the potential to cause serious injury or damage. We need to understand the safety aspects associated with the use of forklifts even if we don't drive them.

Driving a forklift is different from driving a car. In a car the front wheels steer the vehicle; however a forklift has its steering wheels in the rear. The rear end of the forklift swings in a circle around the front wheels that support most of the load.

A forklift is not as responsive as a car when turning the steering wheel. Rear steering makes it difficult to stop a forklift quickly or swerve while still maintaining control. It is therefore important not to drive a forklift fast.

Before a forklift is used, a pre-use check must be completed by the forklift driver and any faults reported to the supervisor. All forklift drivers must be trained and certified to operate a forklift.



### HAZARDS:

- Forklift operators are at the greatest risk from the forklift tipping or rolling over. This is the leading cause of operator deaths:
  - Driving with unbalanced loads can tip the forklift.
  - Lifting loads over the capacity of the machine can cause the forklift to tip.
  - Driving with the forks raised (loaded or unloaded) will reduce the stability of the forklift.
- Carbon monoxide exhaust fumes from petrol, diesel or LPG powered forklifts are dangerous when these machines are used in confined spaces or with poor ventilation.
- Many people have been injured or killed when they've been struck by a forklift. This can occur when a person is in an area where they shouldn't be or the driver's vision is obscured.
- Abrupt actions will cause loads to shift and possibly fall.
- Falling objects.

## SECTION 4: HIGH RISK ACTIVITIES



- Take extreme care when tilting forward. Only tilt forward once the forks are above the target resting place for the load.
- When moving past or into a blind spot, use the forklift's horn to warn people.
- Don't ride on a forklift. If it is being used for access, use a certified personnel cage.
- Always make eye contact with the forklift operator when working around forklifts.





# SECTION 4: HIGH RISK ACTIVITIES



## EMPLOYER'S NEED TO:

- Make sure that all workers using forklifts are fully trained and competent to operate them safely and have regular refresher training.
- Have safe systems of work with forklifts e.g.:
  - Clearly defined traffic areas where pedestrians are separated from forklift traffic and other vehicles.
  - Wearing of hi-viz vests or clothing.
  - Restriction on the amount that can be carried at one time (e.g. one frame or pallet at a time).
  - Speed restrictions and safety signage.
  - Mirrors and visual aids at corners.
  - Flashing lights, audible reversing signals and driving lights.
  - Adequate lighting.
  - Give way rules when needed.
  - Traffic signs where appropriate.
  - Forklift maintenance and reporting procedures.
  - Forklifts with internal combustion engines which can expose workers to carbon monoxide are not used in confined spaces such as cool rooms or when loading containers (electric forklifts are used instead).
  - Where forklifts with internal combustion engines are used, a safety plan to prevent carbon monoxide poisoning must be put in place. The safety plan will depend on the degree of risk but is likely to include policy on use of forklifts, awareness and training on carbon monoxide hazards, regular engine tuning and testing for emissions, checking of ventilation and carbon monoxide monitoring and what to do in a carbon monoxide poisoning emergency.
  - Safety guarding for protection from overhead falling objects and moving parts.
  - Protective bollards or barriers to prevent forklifts or their tyres striking storage racks, electricity control boxes, gas bottle storage areas, etc.





# SECTION 4: HIGH RISK ACTIVITIES



## EMPLOYEE'S RESPONSIBILITIES:

- When driving the forklift with no load, make sure the forks are approximately 6 inches (15 cm) off the ground.
- While driving a forklift on an incline, keep the load on the uphill side. Otherwise, you may have no weight on the rear wheels and can lose control.
- Keep your body inside the forklift frame at all times.
- Don't overload the forklift; check weight and capacity rules.
- Beware of your surroundings and be courteous to pedestrians.
- Avoid sudden jerks/movement; operate your forklift as smoothly as possible to avoid the risk of an overturn.
- Never lift pedestrians on the forks; use approved lifting platforms such as a forklift safety cage.
- The forklift driver must always have a clear view of the path in the direction of travel. If the load being carried blocks forward view, travel backwards or use a spotter.
- Do not leave a forklift idling unattended.
- Whenever leaving the forklift, the forks or attachment must be fully lowered, the controls set in neutral, the engine switched off and the parking brake set.
- Forklifts have the right of way. Before approaching the forklift driver, first make eye contact with him or her.
- Wear seat belts if fitted. A seat belt must be worn if the forklift is driven on a road.



## THE LAW:

***Forklifts - The Approved Code of Practice for Training Operators and Instructors of Powered Industrial Lift Trucks*** – available from [www.dol.govt.nz](http://www.dol.govt.nz)



## FURTHER INFORMATION:

- ***Fork-Lift Truck Operators - Safety Code No. 1 - Front Loading Forklift Trucks*** – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- ***Carbon Monoxide Factsheet – Forklifts + Carbon Monoxide = A Potentially Deadly Combination*** – available from [www.business.govt.nz](http://www.business.govt.nz)
- ***Carbon Monoxide factsheet – Invisible and deadly*** – available from [www.business.govt.nz](http://www.business.govt.nz)

# SECTION 4: HIGH RISK ACTIVITIES

## 4.5 WORKING AT HEIGHT

All work at height needs to be reviewed for its potential for injury and a plan set in place to minimise the likelihood of injury.

It is often mistakenly believed that steps only need to be taken to prevent a fall of more than 3 metres. This is wrong and ignores the fact that many people have been seriously injured or killed when falling less than 3 metres. Working at any height creates a potential hazard that must be managed in accordance with the HSE Act.

Fall protection must be applied if there is a significant risk of injury to an employee, no matter from what height they may fall.

The Health and Safety in Employment Regulations 1995 reinforces the need for *even greater care* when workers are exposed to the dangers of falling more than 3 metres.



### THE LAW:

#### Health and Safety in Employment Regulations 1995 – Regulation 21

Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

- (a) means are provided to prevent the employee from falling; and
- (b) any means so provided are suitable for the purpose for which they are to be used.



### HAZARDS:

In the meat processing industry, there are a number of hazards associated with working at height from working platforms (fixed; adjustable and automated) and some of these hazards are:

- Falls.
- Slips and trips.
- Hit from falling object.
- Manual handling.

# SECTION 4: HIGH RISK ACTIVITIES

## FALLS FROM A WORKING PLATFORM

Working from platforms at any height can result in serious risk of injury, depending on the specific circumstances involved in the tasks. Therefore all tasks (including cleaning and maintenance) that require persons to work from these platforms must be adequately assessed and appropriate risk control measures need to be implemented using the hierarchy of controls.

The **FIRST** thing you should do is try to **REMOVE** the risk of fall.

If (and only if) this is not practicably possible then you should take other actions that reduce the risk of fall, or prevent injury.

Factors to consider when assessing the risk of falls from platforms include the:

- Height of the platform.
- Size of the platform.
- Distance between the carcass and the leading edge of the platform.
- Cleaning and maintenance of the platforms, including the risk of working with hot water.



### PREVENTING FALLS FROM WORKING PLATFORMS:

Each site will need to determine what control measures are appropriate for its operations, subject to its own risk analysis results. Considerations include:

- Work platforms, stairways and ladders constructed and designed to AS/NZS 1657, with appropriate fencing and/or guard railing to prevent the fall of a person, where practicable.
- An appropriate travel restraint that will stop the worker from being able to fall off the edge of an unguarded platform, where practicable.
- Markings on platforms where guard rails or fall restraint are not feasible should be edged in a bright contrasting colour.
- Restricted access to the work platform.
- Relevant training including harness safety and safe working at heights.

# SECTION 4: HIGH RISK ACTIVITIES

## SLIPS AND TRIPS ON WORKING PLATFORMS

Slips and trips can result in different types of injuries, including fall from heights or same level injuries, knife stick injuries and musculoskeletal disorders (sprains and strains).

Factors to consider when assessing the risk of slips and trips include:

- The work platform surface.
- Wet and sometimes slippery work environments due to the tasks being performed, including cleaning and maintenance.
- Off-cuts and body fluids left on working platforms, causing trip and slip hazards.
- The type of footwear provided.
- Access and egress to platforms.
- The application of force, such as pulling, pushing or downward forceful cutting.



### PREVENTING SLIPS AND TRIPS ON WORKING PLATFORMS:

Each site will need to determine what control measures are appropriate for its operations, subject to its own risk analysis results. Considerations include:

- Non-slip floor surfaces on the platforms.
- Adequate lighting.
- Sterilisers and washbasins appropriately located and plumbed, to reduce the water falling onto the platform and to ensure good manufacturing practices.
- Processing equipment and tools mounted from balancers with leads restrained to prevent trip hazards.
- Off-cuts adequately disposed of into chutes, belts, tubs and bins as provided.
- Regular cleaning during production to ensure platforms are kept clear of off-cuts and rubbish.
- Non-slip footwear is provided and properly cleaned and maintained.

# SECTION 4: HIGH RISK ACTIVITIES

## HIT BY FALLING OR MOVING OBJECT AND/OR KNIFE INJURY

The operations of the meat industry are characterised by the use of sharp-edged knives and tools. The risk of injury from being hit by falling sharp-edged objects and/or falling onto sharp-edged objects (such as knives and dangerous tools) is high and should be taken into consideration. Other hazards include being hit by moving objects such as rise and fall platforms (RFPs).

Factors to consider when assessing the risk of being hit by a falling or moving object include:

- Access to areas underneath where persons are working with sharp-edged tools and equipment.
- Access underneath and around automated plant such as RFPs.
- Protective clothing and equipment.



### PREVENTING HITS FROM FALLING OR MOVING OBJECTS ON WORKING PLATFORMS:

Each site will need to determine what control measures are appropriate for its operations, subject to its own risk analysis results. Considerations include:

- Passageways and walkways clearly marked out to ensure persons are aware of access and egress walkways.
- Processing equipment and tools adequately secured to prevent them from falling.
- Restricted access to areas where there is a risk of equipment or tools being dropped from above.
- Restricted access to areas underneath and around plant such as RFPs.
- Provision of training in relation to safe access and egress around the plant.
- Provision of protective clothing such as hard hats to minimise the effect of being hit by a sharp or moving object.

# SECTION 4: HIGH RISK ACTIVITIES

## MANUAL HANDLING ON WORK PLATFORMS

The risks associated with manual handling tasks must be considered when implementing control measures for working on processing platforms. Care should be taken to ensure that control measures implemented for specific hazards do not create new hazards.

Factors to consider when assessing the risk of manual handling on work platforms include:

- Working above shoulder height and below knee level. This can be as a result of an inappropriate height of the platform for the task, inappropriate chain height and size of the carcasses. Allowing reasonable time to complete the task is also an important factor and relates to the speed of the chain.
- The position of the carcass relative to the worker. This is extremely important and there should not be an excessive horizontal reach distance between the carcass and the platform. The need for the worker to reach forward over the platform to undertake the task should be kept to a minimum as this will increase the risk of a fall and result in the worker adopting an awkward posture.
- Twisting, bending and reaching due to restricted space, inadequate platform space and poor design.
- Poor configuration and/or layout of associated equipment (such as sterilisers and tool rests). This can result in the worker adopting an awkward posture.
- Rotation. This is often used in the workplace to reduce the risk of musculoskeletal injuries and must be considered in any comprehensive risk assessment. However, rotation cannot be used as a reason for not appropriately controlling the risk of an injury occurring due to a fall from one of these platforms.



### PREVENTING INJURY FROM MANUAL HANDLING ON WORKING PLATFORMS:

Each site will need to determine what control measures are appropriate for its operations, subject to its own risk analysis results. Considerations include:

- Mechanised RFPs to keep the carcass within the good working zone for each task.
- Keeping the distance from platform to carcass to an absolute minimum to reduce the need for reaching.
- Chain speeds appropriate for the tasks being undertaken and the height of the chain is appropriate for carcass type.
- Design and layout of the working platform suitable for the tasks being performed, and the tool rests and sterilisers positioned appropriately, so as to minimise the need to bend and twist.

# SECTION 4: HIGH RISK ACTIVITIES



## EMPLOYER'S NEED TO:

- Undertake hazard identification and risk assessment wherever workers are working at height.
- Develop and implement appropriate control measures to eliminate or control the hazards in compliance with the HSE Act and also the HSE Regulations.
- Review the risk assessment process and control measures to ensure risks are adequately addressed.



## THE LAW:

### Legal requirements:

- *Health and Safety in Employment Regulations 1995 (Regulation 21)* – available from [www.legislation.govt.nz](http://www.legislation.govt.nz).
- *Approved Code of Practice for the Safe Erection and Use of Scaffolding* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *Power-Operated Elevating Work Platforms (Approved Code of Practice)* – available from [www.dol.govt.nz](http://www.dol.govt.nz)



## FURTHER INFORMATION:

- *Best Practice Guidelines for Working at Height in New Zealand (April 2012)* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *AS/NZS Standards* – there are a number of Standards applying to ladders, scaffolding, working platforms and fall prevention equipment. These are listed in the Best Practice Guidelines for Working at Height in New Zealand – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- *Queensland Government: Safe Working at Heights From Work Platforms in the Meat Industry* – available from [http://www.deir.qld.gov.au/workplace/resources/pdfs/workingacrossborders\\_meatindustry.pdf](http://www.deir.qld.gov.au/workplace/resources/pdfs/workingacrossborders_meatindustry.pdf)



# SECTION 4: HIGH RISK ACTIVITIES

## 4.6 CONFINED SPACE ENTRY

It's estimated that working in a confined space is 150 times more dangerous than doing the same job outside – multiple deaths in confined spaces are not uncommon!

Confined spaces are areas that humans do not normally work in or occupy.



In New Zealand, The Ministry of Business, Innovation and Employment (MBIE) accepts Australian Standard AS 2865:2009 Confined Spaces as the current state of knowledge on confined space entry work.



### THE LAW:

#### CONFINED SPACE (AS 2865:2009) Definition:

A confined space is an enclosed or partially enclosed space which is not intended or designed primarily for human occupancy within which there is a risk of one or more of the following –

- (a) an oxygen concentration outside the safe oxygen range;
- (b) an airborne contaminant which may cause impairment, loss of consciousness or asphyxiation;
- (c) a flammable airborne contaminant which may cause injury from fire or explosion; or
- (d) engulfment in a stored free flowing solid or a rising level of liquid which may cause suffocation or drowning.



#### ACTION POINTS: No persons shall enter a confined space unless:

- A risk assessment has been completed.
- There is written authority (An Entry Permit) by the person responsible for control of the work in the confined space.
- The written authority includes control measures and precautions for safe entry and work execution.
- They are advised of, understand and comply with the requirements of the written authority.
- A record of their presence in the confined space is maintained.

# SECTION 4: HIGH RISK ACTIVITIES

## TRAINING

Training is essential for any effective confined space entry programme. All individuals involved in confined space entry including entrants, attendants, rescuers and those who prepare the confined space for entry, must be trained in the hazards and controls, their individual responsibilities and accountability.



### EMPLOYER'S NEED TO:

- Put written procedures in place for entering confined spaces, and audit these to ensure they are being followed.
- Make sure you have an entry permit system in place and your workers and contractors are trained and aware of it and their responsibilities.
- Train your people! All people that have to work in a confined space must be trained in working in a confined space!



### EMPLOYEE'S RESPONSIBILITIES:

If you are not comfortable with the safety measures in place for entry and work within the confined space, then STOP and RECHECK the Permit to Work with your supervisor.

If entering a confined space, you must:

- Understand the hazards, including information on the mode of exposure (for example inhalation or absorption), signs or symptoms, and consequences of the exposure.
- Know how to use the appropriate personal protective equipment properly.
- Maintain communication with the safety observer to enable the attendant to monitor the entrant's status as well as to alert the entrant to evacuate the space if there is a hazard noted.
- Alert the attendant if a prohibited condition exists or when warning signs or symptoms of exposure appear.
- Exit from the confined space immediately when ordered by the attendant, when the entrant recognises the warning signs or symptoms of exposure, or when an automatic alarm is activated.

# SECTION 4: HIGH RISK ACTIVITIES



## FURTHER INFORMATION:

- *AS 2865:2009 Confined Spaces.*
- *Safe Working in a Confined Space* – available from [www.dol.govt.nz](http://www.dol.govt.nz)
- Refer to the Safeguard Buyers Guide for training providers.

# SECTION 5: YARDS AND STOCK HANDLING

## 5 YARDS AND STOCK HANDLING

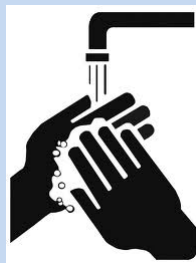
Working with livestock is challenging at the best of times. Working with livestock in restricted spaces, such as races, pens and ramps, is even more so.

As well as the risks of crushing, goring and kicking, stock handlers are exposed to disease and infection through exposure to animal urine, faeces, saliva, hides and wool.

Because much of the work is outside, additional weather-related hazards such as sun, rain, ice and even snow need to be addressed.

### 5.1 INFECTION CONTROL

Some serious diseases can be caught from livestock; though fortunately the incidence is very low. The main risks are from Leptospirosis, Campylobacter, Salmonella, Cryptosporidium and Orf.



**The key to health and safety is prevention of infections from livestock from occurring.**

**This involves the following:**

- Wash your hands thoroughly with hot soapy water after handling stock, after going to the toilet and before eating or smoking.
- Cover cuts, scratches, grazes or burns with a waterproof dressing until the wound has healed.
- Avoid urine splashes directly onto the skin - best to avoid the risk by having the skin covered at all times.
- When operating a power hose, avoid splashes onto your skin.
- Wear waterproof footwear with steel toe caps.
- Wash your clothes after you have been handling stock.

**Note:** Additional caution is required when handling bobby calves because of the increased risk of Campylobacter infection.



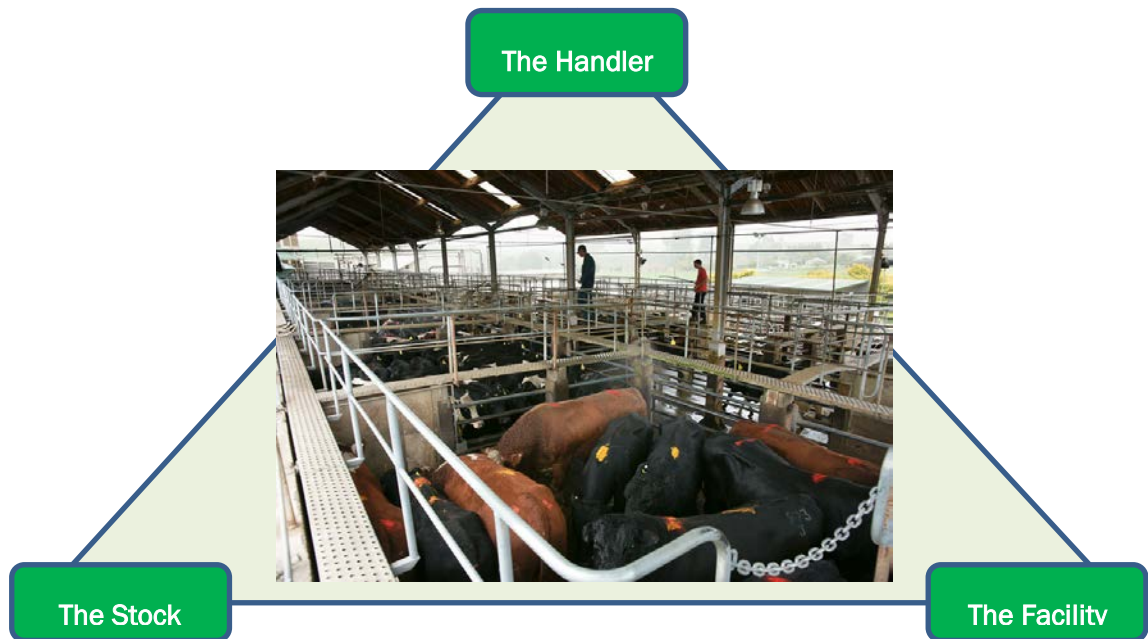
#### **FURTHER INFORMATION:**

For further information regarding diseases that can be transferred from animals to humans during meat processing, refer to ***Section 4: High Risk Areas – Work contributing to zoonotic diseases.***

# SECTION 5: YARDS AND STOCK HANDLING

## 5.2 STOCK HANDLING

There are three basic components in the safe handling of livestock at the stock yards. These are the stock, the facility and the handlers.



### THE STOCK

The size and type of the stock is obviously an important factor in managing the hazards associated with stock. For example, cattle are more dangerous than sheep, while other stock such as goats and deer present specific hazards. This must be taken into account in the design of facilities and the training of handlers.

Stock can be especially dangerous when they are frightened or over-excited. They do not like:

- Sudden or loud noises.
- Being hit.
- Being chased.
- New or strange objects.
- People getting in their 'space' especially around the head.

# SECTION 5: YARDS AND STOCK HANDLING

## THE FACILITY

The layout and nature of the stockyards has a significant impact on the ease of moving the stock and hence on the safety of the handlers and other persons present. A well designed facility makes it easier for calm and ordered movement of stock.



### Assessment of stockyard structure, pens and races:

- Are livestock yards and other enclosures designed for the type of stock to be received?
- Where required, are there means of escape for handlers or escape refuges where they can shelter?
- For large stock, are there raised catwalks alongside forcing pens, races and loading ramps?
- Do walkways and catwalks have adequate safety railing?
- Do all gates swing freely and are latches effective using minimal effort?
- Are all railings fully secure and able to withstand the impact of agitated stock?
- Are there any sharp objects that can injure stock or handlers?
- Is there sufficient drainage in all areas?
- Are floor surfaces and grating clean and in good condition to minimise slipping by livestock or handlers?
- Is the ground surface free of tripping hazards?
- Is there adequate lighting, particularly where the receipt of livestock may occur in darkness or in areas such as sheds with low levels of natural light?
- Are all switches, plugs and light fittings in good condition and where necessary waterproof?
- Are building structures in sound condition?

### Where there is a possibility of cattle escape:

- Is there an escaped cattle procedure in place and rehearsed for the site?
- Is the site securely fenced so that it will contain any cattle that escape from the pens or during unloading?

## THE HANDLER

The stock handler must be trained and competent in the type of stock being handled.

It is important to treat animals in a calm and collective manner; to avoid excessive noise and sudden movements. Calm animals are easy to deal with while a stressed animal releases adrenalin into the blood stream, which causes it to behave in an unpredictable manner.

Developing good stock handling skills will help you stay safe, and it will help make your job easier.

# SECTION 5: YARDS AND STOCK HANDLING



## General tips for stock handling:

### Approaching stock:

- Always approach animals from the front or the side.
- Talk calmly to the animal as you approach, in case it can't see you coming.
- Never turn your back on a bull! Bulls are more dangerous the older they get.

### Moving stock:

- Work with a partner if you can.
- If there's a catwalk, use it.
- Give stock 20 to 30 minutes in the yard to settle them down before you move them.
- Never get in the race with large animals.
- Never put your arms, head or legs through the race walls.
- Don't try to move too many animals at once.

### Moving bulls:

- Move confidently, but carefully. Show that you are in charge.
- Carry a waddy or long, strong stick and be ready to use it.
- If two bulls are fighting, keep clear!

### Think like an animal:

Know how animals think to get them to move where you want:

- If you want cattle to move left, stand in front and move right.
- If you want cattle to move forward, stand beside and move back.
- Pigs don't like dark areas, so will move more easily towards a light.
- Remember that driving from the rear won't speed up a mob.

### Using dogs:

- Only use well-trained dogs for stock work.
- Keep them under control and not too noisy.
- Dogs are good as a decoy when you're moving an aggressive bull.

### Where to stand:

- If you need to work close in to a large beast, turn side on right against the animal.
- If you don't have to work in close, stand well back and out of kicking range.
- In a dangerous situation, turn side on to the animal so you seem smaller.

### Have an escape route:

- Always have an escape route planned before you enter a yard with cattle.
- If you get cornered by a bull, shout loudly, hit it on the nose to make it close its eyes, and get out as fast as you can.






# SECTION 5: YARDS AND STOCK HANDLING

## 5.3 MAIN PROCESS STEPS IN YARDS AND STOCK HANDLING:







### 5.3.1 SITE ACCESS TO STOCK YARDS




HAZARD	CONTROLS
 Crushing from trucks and other vehicle traffic on-site.	<ul style="list-style-type: none"><li>• Restricted access to the site.</li><li>• Site vehicle speed limit.</li><li>• Judder bars.</li><li>• Marked pedestrian walkways.</li><li>• Hi-viz clothing.</li><li>• Remember that trucks and other vehicle traffic have the right of way.</li><li>• Ensure there is sufficient space for trucks and trailers to get off the road safely and to turn and reverse into the race.</li><li>• Ensure the truck parking area is free of overhead branches and wires.</li><li>• Before approaching a truck, make contact with the truck driver and wait for them to indicate that you can approach.</li></ul> 
 Slip/trip and fall from animal waste from trucks.	<ul style="list-style-type: none"><li>• Truck drivers should make sure the truck effluent capture tanks are not full before coming onto site.</li><li>• Clean down affected areas as soon as possible.</li></ul>

# SECTION 5: YARDS AND STOCK HANDLING




## 5.3.2 UNLOADING OF LIVESTOCK

HAZARD	CONTROLS
 Injury from escaped stock.	<ul style="list-style-type: none"> <li>• Ensure the trailer or truck is correctly lined up and positioned to eliminate the chance of stock escaping between the vehicle and the side railings when the rear door or ramp is opened.</li> <li>• In those situations where there is a possibility of escape, preplanning and training on how to deal with an escaped animal situation.</li> </ul> 
 Struck by agitated or frightened animal. A frightened animal has the tendency to ram or jump.	<ul style="list-style-type: none"> <li>• Only truck drivers should enter a stock truck or trailer.</li> <li>• Check the truck or yard before use and remove any obstructions.</li> <li>• Do not frighten or excite the stock during unloading. Try to avoid loud noises and sudden movements, as this frightens the animals and could lead to a chain reaction among the stock.</li> <li>• When the rear door or ramp is opened, there should be no other persons standing at the side of the exit ramp in the side vision of the stock. This may cause them to stop.</li> <li>• Do not rush the stock once the rear door or ramp is open. They will want to leave the transport as they do not like being confined. It may take 20-30 seconds for one of them to see the opening and move; then the others will follow.</li> <li>• Avoid excessive use of electric prodders. Excessive use of prodders is an animal welfare issue, affects meat quality, and aggravates animals. Electric prodders should not be used to move sheep, calves or pigs, or on animals less than 3 month of age. Electric prodders are not to be used on sensitive areas of the animal's body (eyes, ears, nose, anus, etc). Nevertheless, health and safety is the paramount consideration in the use of electric prodders.</li> <li>• Use other driving aids, such as an alkathene pipe or stick with a plastic shopping bag, to help direct stock in the required direction.</li> <li>• Use all available gates and lock bars to stop livestock reversing.</li> </ul> 






# SECTION 5: YARDS AND STOCK HANDLING

 Climbing on the sides of trucks	<ul style="list-style-type: none"> <li>Do not climb onto the sides of trucks; this may result in a fall or serious injury.</li> </ul>
 Injury from handling “downers” or dead stock.	<ul style="list-style-type: none"> <li>Follow the procedure for safe handling of dead stock or “downers”.</li> </ul>
 Slip/trip and falls as a result of animal waste.	<ul style="list-style-type: none"> <li>Keep the ramp and other surfaces clean; this not only minimises the risk of slipping, but improves hygiene conditions.</li> <li>Ensure grates are fitted properly and flat.</li> </ul>

## 5.3.3 HANDLING STOCK IN YARDS

HAZARD	CONTROLS
 Struck by frightened or agitated animals.	<ul style="list-style-type: none"> <li>Make sure the animals can hear and see you.</li> <li>Watch what’s happening around you.</li> <li>When handling cattle, work from above on elevated catwalks where possible.</li> <li>If you need to get into a pen with cattle, keep out of kicking range and never get into a position where you could be crushed between stock and objects such as yard walls or gates.</li> <li>Don’t get in a race with large livestock. They can roll you along the race wall or crush you against it.</li> <li>Never put your arms, head or legs through race walls.</li> <li>Use an alkathene pipe or stick with a plastic shopping bag or equivalent to help direct stock in the required direction.</li> <li>Avoid excessive use of prodders. Excessive use of prodders affects meat quality as well as aggravating animals.</li> <li>Ensure stock have room to move within pens. If a pen is too full they will have nowhere to go.</li> </ul>  


## SECTION 5: YARDS AND STOCK HANDLING

	<ul style="list-style-type: none"> <li>• Set gates in advance so once the stock are moving they can continue to the intended destination.</li> <li>• Close gates behind you so animals can't enter unexpectedly.</li> <li>• To get livestock to move forward, walk along the catwalk from the front of the race to the back.</li> <li>• Position yourself to the rear of the animals as they move forward.</li> <li>• Try to avoid sudden movements, as this frightens the animal and could lead to a chain reaction among the animals.</li> </ul>
 Slip/trip and falls as a result of animal waste.	<ul style="list-style-type: none"> <li>• Take care - stockyards can be wet, muddy and slippery!</li> <li>• Take care when walking up and down ramps, on catwalks and along races. Walk, don't run!</li> <li>• Keep the ground surface and grates clean; this is to not only minimise the risk of slipping but improves slaughter room hygiene conditions.</li> <li>• Grates should be fitted properly and flat.</li> <li>• Keep pens and races clear of rocks, hoses, rubbish and other things you might trip over.</li> </ul>
 Heights.	<ul style="list-style-type: none"> <li>• Walk, don't run, on catwalks and loading ramps.</li> </ul>
 Strains and sprains.	<ul style="list-style-type: none"> <li>• Never try to lift a dead or sick animal by yourself - get help.</li> <li>• Use a cart or hand truck to move an animal that can't move itself.</li> <li>• Lift with your arms and your legs, not your back.</li> <li>• Don't try to stop pigs or sheep with your knees; use a sorting board.</li> </ul>
 Vehicles.	<ul style="list-style-type: none"> <li>• Always wear high visibility vest in the unloading area.</li> <li>• Children must stay in the truck at all times.</li> </ul>
 Environment.	<ul style="list-style-type: none"> <li>• Be sun smart - when you are working in the sun wear sunscreen and a hat.</li> </ul>



# SECTION 5: YARDS AND STOCK HANDLING

## 5.3.4 STOCK WASH

(Manual hose; overhead spray; belly wash).

HAZARD	CONTROLS
 Water splashes and aerosols.	<ul style="list-style-type: none"> <li>Wear eye protection if required, as appropriate to the facility and chemicals used on your site.</li> </ul>

## 5.3.5 MOVEMENT TO SLAUGHTER

HAZARD	CONTROLS
 Struck by frightened or agitated animals not wanting to move towards the stunning box.	<ul style="list-style-type: none"> <li>For cattle, do not enter the race apart for cleaning when not in use.</li> <li>Stock generally move better if there is a slight incline in the race, up to the stunning box.</li> <li>A slight curve can also get better movement as the stock will follow those they see disappearing ahead of them.</li> <li>Use of one way overhead gates will stop cattle reversing back down the race.</li> <li>Lighting should be dull with no shadows in the race.</li> <li>There should be no sudden noises.</li> <li>Keep the race clean - there must be no smell of blood in the race.</li> <li>Avoid excessive use of prodders. Use an alkathene pipe or stick with a plastic shopping bag or equivalent to help direct cattle in the required direction.</li> </ul> 



### EMPLOYER'S RESPONSIBILITIES:

- Ensure the stockyards and facilities are fit for purpose and in good condition.
- Ensure handlers are competent with the necessary stock handling skills.
- Ensure handlers have appropriate personal protective equipment (PPE).

# SECTION 5: YARDS AND STOCK HANDLING



## EMPLOYEE RESPONSIBILITIES:

- Ensure you use safety PPE that is provided for you.
- Follow safety rules and procedures at all times.
- Use good stock-handling skills – be alert to behavioural signs and sounds of the stock you are handling; always treat animals in a calm and collective manner; avoid excessive noise and sudden movements.
- Use catwalks where provided.
- Never poke your head, arms or legs between rails.
- Don't lean over an animal's head.
- If you need to get into a pen or race with cattle, always have an escape route.
- Action or report any safety hazards.



## FURTHER INFORMATION:

- ***ACC Cattle Handling Skills*** – available from [www.acc.co.nz](http://www.acc.co.nz).
- ***ACC Survival Guide for Livestock Handlers*** – available from [www.acc.co.nz](http://www.acc.co.nz).
- ***Guidance on the Safe Handling of Livestock at Marts and Lairages*** – available from [www.hsa.ie/eng](http://www.hsa.ie/eng).
- ***Common Illnesses in the Meat Industry*** – available from [www.acc.co.nz](http://www.acc.co.nz).
- ***Animal Welfare (Commercial Slaughter) Code of Welfare 2010*** – available from [www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)
- ***Animal Welfare (Deer) Code of Welfare 2007*** – available from [www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)
- ***Guidance Note – Safe handling of goats at abattoirs*** – available from [http://meatiesohs.org/files/Guidance\\_Note\\_Safe\\_handling\\_of\\_goats\\_Final.pdf](http://meatiesohs.org/files/Guidance_Note_Safe_handling_of_goats_Final.pdf)



# SECTION 6: SLAUGHTER OPERATIONS

## 6 SLAUGHTER OPERATIONS

The slaughter process involves a lot of movement, physical activity, knife usage and machinery. It is important that you are aware of your surroundings and the people working within it. Remember: one of the unique hazards you are exposed to in this phase of the operation is the animal itself. Prior to slaughter, stock can become agitated, jumpy and aggressive.

In this module, we will cover:

- Manual handling.
- Infection Control.
- Knives.
- The overall slaughter process.

### 6.1 MANUAL HANDLING

There is a lot of manual handling involved in slaughter operations. Always follow the correct manual procedures; rotate tasks; use micro-pauses and report early signs of strains.



#### FURTHER INFORMATION:

Refer to *Section 4: High Risk Areas – Manual handling: sprains and strains.*

### 6.2 INFECTION CONTROL

Many diseases can be transferred from animal to humans. These are referred to as zoonotic diseases. They can be transferred through contact with skin, wool, hair, blood, saliva, urine and faecal products. The main risks are from:

Infection	Symptoms
Leptospirosis	Fever and general ill health
Campylobacter, Salmonella & Cryptosporidium	Stomach upsets: diarrhoea and vomiting
Orf	Skin problems: sores/rashes

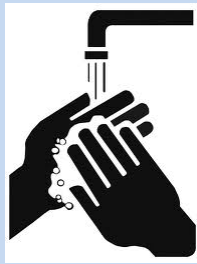




# SECTION 6: SLAUGHTER OPERATIONS

Workers in the slaughter area are particularly exposed to the risk factors of contracting leptospirosis. Workers are generally infected when urine gets in their eyes, nose, and mouth or through cuts or cracks in their skin.

Note also an increased risk of campylobacter infection when slaughtering bobby calves.



## To protect yourself from leptospirosis:

- Always wear your protective clothing, safety glasses or visors, waterproof gloves and boots.
- Carefully wash your hands and forearms before eating, drinking, smoking or touching your lips, face or eyes.
- Wash your face as well if you have a moustache or beard.
- Cover cuts and abrasions with waterproof plasters.
- Wash off urine splashes immediately with water or saline (salt water).
- Report any flu-like illness to your doctor and remember to mention that you're a meat worker.



## FURTHER INFORMATION:

For further information regarding diseases that can be transferred from animals to humans during meat processing, refer to ***Section 4: High Risk Areas – Work contributing to zoonotic diseases.***

# SECTION 6: SLAUGHTER OPERATIONS

## 6.3 KNIVES

Knives are used throughout the slaughtering process. We simply take this for granted and often don't consider some of the risks associated with knife work or things we can do to reduce the risk of injury. Remember; knife injuries are one of the most common injuries sustained in the meat industry.



- You should be trained in the safe use and sharpening of knives. Note: Using a sharp knife reduces the force and exertion required to complete the slaughter task. This can reduce your risk of injury.
- Use knife pouches. Never walk around with a knife in your hand.
- Wear protective gloves and gauntlets.
- Be aware of your surroundings and people working within it.
- Never try and catch a falling knife.

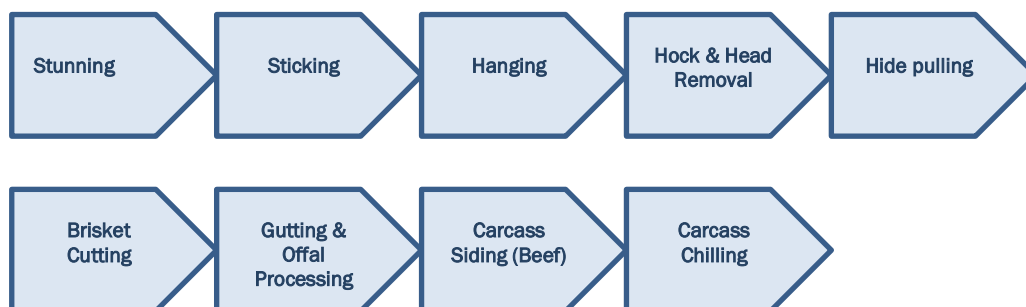


### **FURTHER INFORMATION:**

For further on knife safety, refer to ***Section 4: Use of Knives.***

# SECTION 6: SLAUGHTER OPERATIONS

## 6.4 MAIN PROCESS STEPS IN SLAUGHTER OPERATIONS:



Note: The order of processing varies according to animal species and plant layout.

### 6.4.1 STEP 1: STUNNING

The commercial slaughter of animals in the New Zealand meat industry must be carried out by approved methods and these include an approved method of stunning prior to slaughter.

Stunning of large mammals such as sheep, cattle and deer must be applied using one of the following:

- (i) a captive bolt firearm; or
- (ii) an electrical stunner; or
- (iii) a suitable firearm.

Note that anyone using a firearm must have the relevant firearms licence.

The stunning can be designed to provide permanent insensibility or, as in the case of Halal slaughter, temporary insensibility.

Effective stunning is important for the welfare of the animal but is also important for the safety of the employees involved – in particular, the hazards involved in dealing with an inadequately stunned animal, especially in the case of larger animals such as cattle and deer.




In the case of stunning for temporary insensibility, additional precautions are necessary because the stun-to-stick interval is critical.









Repetitive ineffective stunning requiring repeat stunning must be investigated and remedied immediately.



# SECTION 6: SLAUGHTER OPERATIONS

HAZARD	CONTROLS
 Injury from inadequately stunned animals.	<ul style="list-style-type: none"> <li>• Access to a knocking box, or restraining crush and adjacent areas should be restricted to appropriately trained and protected employees.</li> <li>• Operators must be competent and follow the correct stunning procedure for effective stunning (e.g. head correctly clamped for electrical stunning; correct positioning for captive bolt stunning).</li> <li>• Operators must be competent in assessing the signs of acceptable and unacceptable stunning.</li> <li>• When stunning for temporary insensitivity (i.e. for Halal slaughter), the person operating a knocking box must ensure there is clear space on the bleed table before stunning the next animal.</li> <li>• Insensibility must be confirmed before releasing the stunned animal.</li> <li>• In the case of smaller animals such as sheep, an automated system may be used whereby the stunning and release is controlled by the slaughterer.</li> <li>• Where a restraining conveyor is used for sheep, goats, and calves in which individuals are separated, conveyors must be designed and operated to prevent animals from climbing on the backs of animals in front of them.</li> <li>• Back-up stunning equipment (e.g. a captive bolt gun) for an inadequately stunned animal and a procedure for its use. Operators to be competent in this procedure.</li> <li>• Barriers or bollards and escape routes to prevent improperly stunned cattle endangering employees.</li> <li>• Safe escape routes for workers in sticking pens.</li> <li>• An escape route and pen for an inadequately stunned cattle beast that is running around.</li> </ul> <div data-bbox="1046 405 1385 819" data-label="Image"> </div> <div data-bbox="1046 837 1385 891" data-label="Caption"> <p>BACK-UP CAPTIVE BOLT GUN FOR INADEQUATELY STUNNED ANIMAL.</p> </div> <div data-bbox="1023 1010 1385 1547" data-label="Image"> </div> <div data-bbox="1046 1565 1385 1619" data-label="Caption"> <p>ESCAPE PEN FOR INADEQUATELY STUNNED ANIMAL.</p> </div>

# SECTION 6: SLAUGHTER OPERATIONS

HAZARD	CONTROLS
 <p>Injury to slaughterer from unexpected release of a stunned animal.</p>	<ul style="list-style-type: none"> <li>• An employee operating the release of a knocking box should be able to see other employees working below the box when releasing a stunned animal.</li> <li>• An audible or visual signal can be used to alert employees that a stunned animal is being released from a knocking box or restraining crush.</li> <li>• In the case of smaller animals such as sheep, an automated system may be used whereby the stunning and release is controlled by the slaughterer.</li> </ul>  <p><b>AUTOMATED STUNNING AND RELEASE.</b></p>
 <p>Use of firearm.</p>	<ul style="list-style-type: none"> <li>• If a firearm is used for shooting an escaped animal, before you fire: <ul style="list-style-type: none"> <li>– Clear other workers from the area. If this is not possible, they should stand behind the person shooting.</li> <li>– Consider the line of fire to ensure safety in case of a missed shot.</li> </ul> </li> <li>• The aim is to kill the animal with a single shot. Fire from as close a range as possible, to reduce the chance of the bullet ricocheting.</li> <li>• Do not fire while the animal is moving its head.</li> </ul>
 <p>Falling into a knocking box or restraining crush.</p>	<ul style="list-style-type: none"> <li>• Design of knocking box or restraining crush to minimise the risk of an employee falling in.</li> <li>• Design of enclosures to minimise reaching and bending over.</li> </ul>
 <p>Injury from small stock</p>	<p>(E.g. sheep; calves) jumping out at the entrance to the knocking box.</p> <ul style="list-style-type: none"> <li>• Install barrier(s) to prevent escape or to enable ease of capture.</li> </ul>
 <p>Injury from handling animals in a crush pen.</p>	<ul style="list-style-type: none"> <li>• Pens designed to minimise animal handling.</li> <li>• The size of the crush pen should be just wide enough to prevent the animal from turning around.</li> <li>• Animals need to be well restrained before stunning them.</li> <li>• Position the operator behind protective steel bars.</li> </ul>

## SECTION 6: SLAUGHTER OPERATIONS

HAZARD	CONTROLS
 Injury from captive bolt stunning device.	<ul style="list-style-type: none"> <li>• Operators need to be competent to use captive bolts. They should essentially be treated as the same as a firearm because they can inflict similar injury.</li> <li>• Don't leave a loaded captive bolt unattended.</li> <li>• If the captive bolt falls or is dropped, don't attempt to catch it. Keep clear as it may discharge on impact.</li> <li>• Ensure the device is regularly cleaned and maintained in accordance with the manufacturer's instructions to ensure that it functions effectively.</li> <li>• Place the captive bolt device in secure storage when not in use.</li> </ul>
 Electrical shock from a manual electrical stunning device.	<ul style="list-style-type: none"> <li>• There is a risk of fatal electrical shock if a person contacts the electrodes of a manual stunning device, so always follow the manufacturer's safety instructions.</li> <li>• Insulate the apron of a conveyor presenting animals for electrical stunning.</li> <li>• Be aware that the animal may react and kick, accidentally discharging the stun gun.</li> </ul>

# SECTION 6: SLAUGHTER OPERATIONS



## Electrical stunning equipment for effective stunning and animal welfare<sup>1</sup>:

- Electrical stunners must be capable of supplying a regulated current which will induce an immediate stun.
- The apparatus must be fitted with an automatic timing device to determine the duration of the stun and a calibrated meter positioned to enable the operator to observe the amperage and duration of the stun.
- When using head-only reversible stunning, the electrodes must be placed so as to span all or part of the brain of the animal to be stunned.
- Animals must be effectively stunned and insensible before the slaughter process can begin.
- Electrical stunners must generate sufficient power to achieve continuously the minimum current level recommended for stunning.
- The correct current level must be attained within 1 second of the initiation of the stun and must be maintained for at least 1 – 3 seconds.
- Animals must not be so wet as to cause part of the stunning current to flow over the surface of the body instead of through the head, resulting in an ineffective stun.
- Animals must not experience any electric shocks from the stunning equipment before stunning.
- Electrical stunning equipment must be maintained in good condition in accordance with the manufacturer's recommendations.






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<sup>1</sup> Minimum Standard No.8 - Electrical Stunning of Large Mammals - *Animal Welfare (Commercial Slaughter) Code of Welfare 2010*







# SECTION 6: SLAUGHTER OPERATIONS

## 6.4.2 STEP 2: STICKING

HAZARD	CONTROLS
 Knife handling.	<ul style="list-style-type: none"> <li>• Always cut away from you while handling a knife.</li> <li>• Be mindful of other people in your zone.</li> <li>• Follow safe knife handling procedure.</li> </ul>
 Slip/trip and fall from spilled body fluids such as blood and urine.	<ul style="list-style-type: none"> <li>• Maintain good housekeeping standards.</li> <li>• Wear safety footwear with good sole grip.</li> </ul>
 Kicks from animal reflexes or effects of stunning wearing off.	<ul style="list-style-type: none"> <li>• Ensure you have a secure hold when sticking.</li> <li>• Be prepared that the animal may move unpredictably.</li> <li>• Provide clearance for the animal to kick-out, without kicking into a solid object.</li> </ul> 
 Disruption to cardiac pacemaker function from low voltage electrical stimulation equipment.	<ul style="list-style-type: none"> <li>• If low voltage electrical stimulation/immobilisation is used (e.g. on a bleed table or between slaughter table and Y-cut station), ensure no employee working near that equipment is fitted with electronic body devices such as a cardiac pacemaker.</li> </ul>





# SECTION 6: SLAUGHTER OPERATIONS

## 6.4.3 STEP 3: HANGING (SHACKLING)

HAZARD	CONTROLS
 Hanging the carcass onto the production chain.	<ul style="list-style-type: none"> <li>• While the sheep carcass is on the slaughter table, lift the hind legs and secure to hook.</li> <li>• If the animal kicks, try to hold onto the chain and hang it up.</li> <li>• For cattle, use the chain to hook up the carcass and wear appropriate face protection PPE (e.g. a “cricket helmet”).</li> <li>• Be careful not to entangle yourself on the lifting chain.</li> <li>• Only the person hanging the animal should operate the controls, ensuring they are well out of the way of the chains and other lifting device gear before lifting the carcass.</li> </ul> 
 Slip/trip and fall, floors can be slippery due to body fluid loss.	<ul style="list-style-type: none"> <li>• Maintain good housekeeping standards.</li> <li>• Wear safety footwear with good sole grip.</li> </ul>
 Repetitive movement in hanging the carcass onto the production chain.	<ul style="list-style-type: none"> <li>• Rotate tasks frequently.</li> <li>• Use manual handling devices and lifting plant where possible.</li> </ul>






# SECTION 6: SLAUGHTER OPERATIONS

## 6.4.4 STEP 4: HOCK & HEAD REMOVAL


HAZARD	CONTROLS
 <p>Amputation from hock cutters used to sever the lower ends of the fore and hind legs.</p>	<ul style="list-style-type: none"> <li>• Handle the hock cutters with two hands. To ensure that two hands are used, the two handles must be fitted with intrinsically linked safety switches with half-second delay interlock to prevent overriding by taping one of the handles.</li> <li>• Respect the hock cutter as the hock cutter can cause a serious injury. One person per carcass.</li> <li>• If your company is using auto hock cutters, always ensure the guards are in place. Never put any part of your body behind the guards or barriers.</li> <li>• Never override isolations or by-pass the lockout procedure.</li> <li>• If the hocks and heads are pushed down a chute, be careful of your positioning.</li> </ul> 
 <p>Cut or amputation from head cutter/knife or saw used to sever the head.</p>	<ul style="list-style-type: none"> <li>• Follow safe work practice as appropriate for using the cutter, knife or saw.</li> </ul>
 <p>Head removal – manual load in severing, supporting and re-hanging the head.</p>	<p>(Note that head removal of beef involves high force, often with the arms outstretched, increasing the horizontal distance to the lower back when trying to catch or hold the heavy load. The head is then transferred to another rail and this may involve twisting of the back).</p> <ul style="list-style-type: none"> <li>• Provision of mechanical aids to support the weight of the head if there is sufficient room.</li> <li>• For small stock, a mechanical aid may be used to sever the head without any manual handling.</li> </ul>

# SECTION 6: SLAUGHTER OPERATIONS


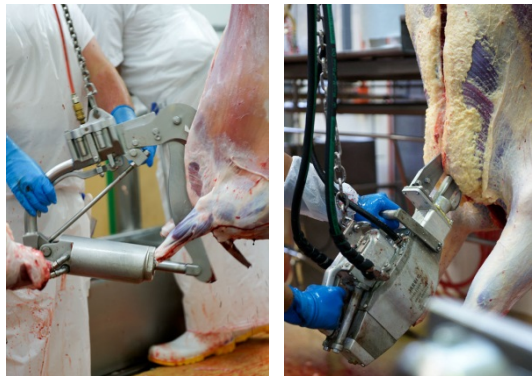
## 6.4.5 STEP 5: HIDE PULLING

HAZARD	CONTROLS
 <p>Air knives (flaying knives) used to peel the pelt/hide off the carcass.</p>	<ul style="list-style-type: none"> <li>• Fit silencers to the air knives to reduce noise levels.</li> <li>• Hearing protection is required while operating the air knife.</li> <li>• If the air knife falls, don't try to catch it, stay clear and switch off the air before retrieving it</li> <li>• Wear safety gloves while using the air knives. Make sure these are snug fitting and tied at the wrist.</li> <li>• Maintain safe knife handling practices.</li> </ul> 
 <p>Hide puller or pelt puller used to strip the hide or pelt from the carcass.</p>	<ul style="list-style-type: none"> <li>• Don't put your finger into any hole of the hide or pelt while it is being pulled.</li> <li>• Know the puller's nip points and keep your fingers clear of this potential entrapment hazard.</li> <li>• If low-voltage electrical immobilisation is used for beef carcass hide-pulling, ensure no employee working near that equipment is fitted with electronic body devices such as a cardiac pacemaker.</li> <li>• Where automated hide pullers are used, keep clear of the safety guarding.</li> </ul> 
 <p>Manual or semi-manual pelting. (Pelting and pulling is a left and right handed operation).</p>	<p>(Where parts of these tasks are performed manually, this 'punching' down involves repetitive awkward postures, high forces, grabbing, pulling and other movements that can result in MSD).</p> <ul style="list-style-type: none"> <li>• Use rails to present task at heights that reduce the need to bend and reach.</li> <li>• Training in the use of mechanical aids such as pelting arms to assist with the task.</li> <li>• Rotate tasks frequently.</li> </ul>

## SECTION 6: SLAUGHTER OPERATIONS






 <p>Hole(s) in the floor used for carcass waste.</p>	<ul style="list-style-type: none"> <li>• Ensure guards, barriers or covers are in place as appropriate.</li> </ul>
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### 6.4.6 STEP 6: BRISKET CUTTING

HAZARD	CONTROLS
 <p>Electrically or hydraulically-powered brisket saw or cutter used to cut the chest bones.</p>	<ul style="list-style-type: none"> <li>• Use of the brisket saw or cutter is a two handed operation. This is a safety mechanism and should never be bypassed.</li> <li>• Be aware of anyone else in your zone.</li> </ul> <div data-bbox="860 669 1394 1043">  </div>

# SECTION 6: SLAUGHTER OPERATIONS



## 6.4.7 STEP 7: EVISCERATION (GUTTING) & OFFAL PROCESSING

HAZARD	CONTROLS
 Leptospirosis from contact with urine in the bladder.	<ul style="list-style-type: none"> <li>• Always wear your protective clothing, safety glasses or visors, waterproof gloves and boots in accordance with your company's PPE policy.</li> <li>• Carefully wash your hands and forearms before eating, drinking, smoking or touching your lips, face or eyes.</li> <li>• See elsewhere in these guidelines for further information on protecting yourself from leptospirosis.</li> </ul>
 Lifting offal out of the cavity.	<ul style="list-style-type: none"> <li>• Stretch regularly and rotate tasks frequently.</li> <li>• For sheep, ensure the table, trays or gut buggy is/are located as close to the carcass as possible to minimise excessive movement and at a height that can be easily worked from.</li> <li>• For cattle, maintain fluid intake / rotate tasks because of increased heat and humidity; beware of slippery surface on the viscera table; wear safety footwear with non-slip soles and ensure you have a good footing before undertaking this task.</li> </ul> 
 Manual handling of offal.	<ul style="list-style-type: none"> <li>• Where practicable, eliminate manual handling by using chutes, conveyors and elevators.</li> <li>• Have benches and rails at a height that can easily be worked from.</li> <li>• Use mechanical aids such as purpose-built trolleys to keep loads at heights that eliminate or reduce the need to bend.</li> <li>• Reduce the amounts carried in tubs or trolleys to reduce the force required to move the load.</li> <li>• Rotate round the tasks e.g. emptying; washing; trimming.</li> </ul>
 Slippery floors	<ul style="list-style-type: none"> <li>• Maintain good housekeeping standards.</li> <li>• Wear safety footwear with good sole grip.</li> </ul>




# SECTION 6: SLAUGHTER OPERATIONS

## 6.4.8 STEP 8: BEEF CARCASS SIDING

HAZARD	CONTROLS	
 <p>Siding saw used to cut a beef carcass in half.</p>	<ul style="list-style-type: none"><li>• Use of the saw is a two handed operation. This is a safety mechanism and should never be bypassed.</li><li>• Be aware of anyone else in your zone.</li><li>• Wear eye protection. As the bone is cut by the band-saw, bone chips are created and may fling up into the face.</li></ul>	





## 6.4.9 STEP 9: CARCASS CHILLING

(Note that not all plants chill the carcass).

HAZARD	CONTROLS	
 <p>Slippery floors as the result of drained carcass fluids.</p>	<ul style="list-style-type: none"><li>• Maintain good housekeeping standards, which include regular cleaning of the floor due to spilled fluids.</li></ul>	



## SECTION 6: SLAUGHTER OPERATIONS

 <p>Use of an automated chain or rail system.</p>	<ul style="list-style-type: none"> <li>• Beware of unexpected movement of carcasses on automated marching beams. Consider use of automated alarm system.</li> <li>• Stay well clear of moving parts and ensure that there is guarding at potential entrapment points.</li> <li>• Be aware of nip points and keep hands clear.</li> <li>• Never try to adjust, maintain or lubricate a rail or chain during operation. Full isolation must be achieved to prevent injury.</li> <li>• If necessary to operate the chain during maintenance, then a safety procedure must be put in place and followed at all times.</li> </ul> 
 <p>Manual moving of carcasses to designated areas within the chiller.</p>	<ul style="list-style-type: none"> <li>• Push; don't pull.</li> <li>• Ensure you have a good footing and safety footwear.</li> <li>• Do not try and push too many carcasses at once.</li> <li>• Rotate tasks frequently.</li> <li>• Make sure the rail is weight rated to hold the amount of carcasses you are putting on it.</li> <li>• Maintain overhead rail systems and hooks.</li> </ul>
 <p>Chilled environment to reduce the temperature of the carcass.</p>	<ul style="list-style-type: none"> <li>• Wear warm clothing; keep up your core body temperature.</li> <li>• Reduced temperature increases your risk of muscular injury; do some warm up exercises prior to working in the chiller at the start of the day and between breaks.</li> <li>• Rotate tasks frequently.</li> </ul>

# SECTION 6: SLAUGHTER OPERATIONS



## EMPLOYER RESPONSIBILITIES:

- Ensure employees are trained and competent.
- Ensure equipment is suitable and well-maintained.
- Ensure employees are provided with appropriate personal protective equipment (PPE).



## EMPLOYEE RESPONSIBILITIES:

- Ensure you use safety PPE that is provided for you.
- Follow safety rules and procedures at all times.
- Keep your knives and other cutting equipment sharp.
- Use safe knife handling practices at all times.
- Wear non-slip footwear; walk with care and ensure you have secure footing when performing tasks.
- Rotate tasks.
- Action or report any safety hazards.



## FURTHER INFORMATION:

- *Common Illnesses in the Meat Industry* – available from [www.acc.co.nz](http://www.acc.co.nz).
- *Animal Welfare (Commercial Slaughter) Code of Welfare 2010* – available from [www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)

# SECTION 7: BONING, TRIMMING & PACKING

## 7 BONING, TRIMMING AND PACKING OPERATIONS

Boning and trimming operations involve a lot of movement, knife usage and machinery. Packing also involves a lot of movement and machinery. It is important that you are aware of your surroundings and the people working within it.



Common issues within these operations are:

- Manual handling.
- Knives.
- Hygiene and Infection Control.
- Close working proximity.
- Noise.
- Slippery floors.
- Cool temperature.

# SECTION 7: BONING, TRIMMING & PACKING

## 7.1 MANUAL HANDLING

Boning and trimming is associated with high risk factors for strains and sprains due to issues such as:

- The weight of the cuts of meat that are handled.
- One-handed lifting and carrying of cuts of meat.
- Forward stooping over tables.
- Considerable forward bending of the neck for long periods.
- Repetitive throwing of trimmings, often behind or across the body or above head height.
- Repetitive knife movements, often forceful and with awkward wrist positions.
- Continuous standing for long periods.
- Working in a cold environment.



Packing is also associated with high risk factors for strains and sprains due to issues such as:

- Repetitive grasping, turning, lifting and placing of meat when wrapping or bagging.
- Pushing tubs of meat and carrying cartons between packing areas.
- Forward reaching with arms out-stretched to reach meat from centre of packing table or to use scales to weigh meat before packing.
- Repetitive bending to lift large cuts of meat from deep tubs and trolleys.
- Continuous standing for long periods.
- Working in a cold environment.



**Early intervention** is important for prevention of strains and sprains. Report any discomfort or pain promptly to your supervisor.



### FURTHER INFORMATION:

- *Refer to Section 4: High Risk Activities – Manual Handling.*

# SECTION 7: BONING, TRIMMING & PACKING

## 7.2 KNIVES

Knives are the major causes of cuts. Although modern technology has eliminated a number of hand knife operations, the knife remains the most commonly used tool and causes the most frequent and severe accidents.



- You should be trained in the use and sharpening of knives. Note: Using a sharp knife reduces the force and exertion required to complete the slaughter task. This can reduce your risk of injury.
- Use knife pouches. Never walk around with a knife in your hand.
- Wear protective gloves. The use of mesh and Cut Resistant Gloves (CRG'S) has become a practical control within the meat industry.
- Be aware of your surroundings and people working within it.
- Never try and catch a falling knife.
- Know your strike zone.



### FURTHER INFORMATION:

- *Refer to Section 4: High Risk Activities – Use of knives.*

## 7.3 CLOSE WORKING PROXIMITY

Employees working in close proximity to each other have been cut by other workers as they process the meat. These "neighbour cuts" are usually the direct result of over-crowded working conditions. You need to be constantly aware of the people working around you.



# SECTION 7: BONING, TRIMMING & PACKING

## 7.4 HYGIENE AND INFECTION CONTROL

Before you start work ensure that all cuts are covered with water proof dressing. If you notice a cut getting red and inflamed or you have any sign of illness, then get this treated promptly.

## 7.5 NOISE

Constant exposure to noise can lead to hearing loss. As a standard rule of thumb, if a co-worker stands about a meter away from you and they have to shout to be heard, then hearing protection is required. Hearing protection must be worn correctly in order to protect you from hearing loss. Note that noise-induced hearing loss is permanent and hearing aids are not a substitute for natural hearing.

## 7.6 SLIPPERY FLOORS

Due to the boning and trimming processes, meat and fat residue has the potential to make floors slippery. Regularly clean floors and wear safety footwear with a good grip.


## 7.7 BONING ROOM TEMPERATURE

The temperature of the boning room must be maintained at 12°C or below, to maintain the quality of the meat. This is a relatively cold environment in which to work, so you need to dress in appropriately warm clothing for the conditions.

## 7.8 MAIN PROCESS STEPS IN BONING, TRIMMING AND PACKING:



### 7.8.1 STEP 1: PRE-TRIMMING

HAZARD	CONTROLS
 Pre-trimming prior to boning to remove contamination in the meat.	<ul style="list-style-type: none"><li>• Always cut away from you while handling a knife.</li><li>• Be mindful of other people in your zone.</li><li>• Always follow safe knife handling procedures.</li><li>• Keep knives sharp.</li><li>• Use knives appropriate for the purpose. Bigger is not always best. If the knife is starting to flex, replace it.</li></ul>




# SECTION 7: BONING, TRIMMING & PACKING

## 7.8.2 STEP 2: SAWING

HAZARD	CONTROLS
<div data-bbox="320 371 400 439" data-label="Image"> </div> <p data-bbox="320 454 528 745">Band saws used for portioning meat. Contact with the blade during cutting or removing product will result in serious injury.</p> <p data-bbox="320 790 528 1283">[Consider alternative sawing options such as ATEC circular saws; guarded bench top saws for the likes of knuckle tip removal; automated primal cut saws (although the latter are high end expensive options).]</p>	<div data-bbox="560 371 1038 1749" data-label="List-Group"> <ul style="list-style-type: none"> <li>• Ensure the right machine is provided for the job with enough power so that operators don't need to force product against the blade too hard and with a table big enough to support the product.</li> <li>• Ensure the guarding is adjusted correctly. Only the minimum of blade, enough to make the cut should be exposed and the rest of the blade should be guarded.</li> <li>• Access to dangerous parts should be interlocked so that opening any doors cuts off the power and the machine will not start unless these are closed.</li> <li>• The band saw must have an emergency braking mechanism.</li> <li>• Using a band saw safely needs care and concentration. The machine should be sited where the operator can have plenty of space; ideally the working area should be barriered off to prevent people bumping into him or her.</li> <li>• Only trained people should use band saws and to remind operators and others about the dangers, clear notices should be displayed at the machine saying, for example, DANGEROUS MACHINE and DO NOT DISTRACT THE OPERATOR.</li> <li>• Operators must keep both thumbs tucked in and never work across the blade.</li> <li>• There is a risk of complacency once an operator becomes experienced, so refresher training should be carried out on a regular basis.</li> <li>• Never wear any form of safety glove or forearm shield when using a band saw, as these could get caught up in the teeth of the blade, causing a significant injury. The only glove that can be worn is a rubber glove.</li> <li>• Beware of "soft meat". Some meat does not set and is known as "soft meat". "Soft meat" can cause the blade to suck the product down the gap between the blade and the table, drawing your fingers toward the blade. This could result in finger amputation.</li> </ul> </div> <div data-bbox="1066 365 1390 842" data-label="Image"> </div>







# SECTION 7: BONING, TRIMMING & PACKING




 <p>Band saws continued...</p>	<ul style="list-style-type: none"> <li>• Beware of deformities in the meat – parts where meat or material have been removed. These can result in the portion being cut more easily than expected and result in your hand or fingers contacting the blade.</li> <li>• Wear eye protection. As the bone is cut by the band-saw, bone chips are created and may fling up into the face. To avoid eye injuries, eye protection is required.</li> <li>• Keep the area around the band-saw clean to avoid slips, trips and falls.</li> <li>• As operators may be at the band saws for long spells, the materials and workspace should be organised to make using the machine as easy as possible. Particular care should be taken about ensuring table heights and widths are set to prevent backache as discomfort can be a cause of accidents.</li> <li>• As band saws operators are operating at high speeds, there is a risk of operators becoming fatigued. Work should be organised to give breaks in using the saw where possible and micro pause exercises may also be introduced where appropriate.</li> <li>• When removing or fitting blades there is a risk of serious cuts; so care must be taken and protective gloves may be worn for these tasks.</li> <li>• Ensure that the saw is switched off and isolated from the power supply during maintenance and cleaning operations, and when not in use.</li> <li>• Ensure that cleaning and maintenance of band saws includes the top and bottom pulleys, and the scrapers.</li> </ul>
 <p>Powered circular saws for cutting bone.</p>	<ul style="list-style-type: none"> <li>• Wear eye protection. As the bone is cut by the saw, bone chips are created and may fling up into the face. To avoid eye injuries, eye protection is required.</li> <li>• Keep the area around the saw clean to avoid slips, trips and falls.</li> </ul> 

# SECTION 7: BONING, TRIMMING & PACKING

## 7.8.3 STEP 3: BONING

HAZARD	CONTROLS
 Repetitive movements.	<ul style="list-style-type: none"><li>• Rotate tasks and vary the meat cuts to minimise repetitive movements.</li><li>• Adjust adjustable platforms or stands, if provided, so that tasks are carried out at a comfortable height and distance.</li></ul>
 Knife handling.	<ul style="list-style-type: none"><li>• Always cut away from you while handling a knife.</li><li>• Wear cut-protection PPE as per your company's PPE policy.</li><li>• Be mindful of other people in your work area.</li><li>• Follow safe knife handling procedures.</li></ul>
 Slip, trip and fall.	<ul style="list-style-type: none"><li>• Off-cuts fall to the ground causing the floor to become slippery. It is important to keep the area clean to avoid slip, trip and falls.</li></ul>
 Crush injury.	<ul style="list-style-type: none"><li>• For bovine animals, the boning operator stands on a platform and may drop a slab of meat onto a chute to the trimming table. Take care when placing the meat onto the trimming table chute.</li></ul>







## 7.8.4 STEP 4: TRIMMING

HAZARD	CONTROLS
 Knife handling.	<ul style="list-style-type: none"><li>• Always cut away from you while handling a knife.</li><li>• Be mindful of other people in your zone.</li><li>• Follow safe knife handling procedures.</li></ul>
 Trimming machinery.	<ul style="list-style-type: none"><li>• Keep fingers clear of trimming machinery such as loin de-boners, silver skinning machines and wizard knives.</li><li>• Safety gloves can be worn with some types of trimming machinery but not with others. Use the recommended PPE for the type of trimming machinery being used.</li></ul>
 Repetitive movements.	<ul style="list-style-type: none"><li>• Rotate tasks and vary the meat cuts to minimise repetitive movements.</li><li>• Adjust work stations if possible so that hand tasks are performed below your elbow height.</li></ul>

# SECTION 7: BONING, TRIMMING & PACKING

## 7.8.5 STEP 5: WRAPPING AND PACKING

When undertaking this activity, hazardous manual handling indicators include awkward postures, such as raised shoulders, and repeated actions such as reaching to pick up cuts of meat or twisting the body while handling loads.

HAZARD	CONTROLS
 Manual handling.	<ul style="list-style-type: none"> <li>Adjust work stations if possible so that hand tasks are performed below your elbow height.</li> <li>Rotate tasks and use conveyors or rollers to minimise bending and carrying.</li> </ul>
 Packing machinery.	<ul style="list-style-type: none"> <li>Undertake a pre-inspection before use of any packing machinery and report any faults.</li> <li>Ensure machine guarding is in place and functional before operating any machinery.</li> </ul> 
 Conveyors.	<ul style="list-style-type: none"> <li>Beware of pinch points.</li> <li>Beware that conveyors may start without warning.</li> <li>Walk around conveyors or use conveyor bridges or conveyor gates that are provided.</li> </ul> 
 Forklifts	<ul style="list-style-type: none"> <li>Forklifts may be used to move stillages, containers or pallets. Beware of forklift activities.</li> </ul>

# SECTION 7: BONING, TRIMMING & PACKING



## EMPLOYER'S RESPONSIBILITIES:

- Design tasks and workstations to reduce unneeded movements and awkward postures as far as reasonably practicable.
- Ensure employees are trained and competent.
- Ensure equipment is suitable and well-maintained.
- Ensure employees are provided with appropriate personal protective equipment (PPE).



## EMPLOYEE RESPONSIBILITIES:

- As the boning room is a chilled environment, dress warmly for the conditions.
- Ensure you use safety PPE that is provided for you.
- Follow safety rules and procedures at all times.
- Keep your knives and other cutting equipment sharp.
- Use safe knife handling practices at all times.
- Wear non-slip footwear; walk with care and ensure you have secure footing when performing tasks.
- Rotate tasks.
- Action or report any safety hazards.
- Report any discomfort or pain from manual handling to your supervisor.



## FURTHER INFORMATION:

- *Common Illnesses in the Meat Industry* – available from [www.acc.co.nz](http://www.acc.co.nz).
- *Section 4: High Risk Activities – Manual Handling.*
- *Refer to Section 4: High Risk Activities – Use of knives.*

# SECTION 8: PALLETISING; STORAGE; LOADOUT

## 8 PALLETISING, STORAGE AND LOADOUT

The palletising, storage and load-out operations involve a lot of manual handling and vehicle movement. It is important when lifting objects to lift within your capability. It is also important that you are aware of forklifts in your area and the people working within it.



Common issues within palletising, storage and load-out:

### 8.1 MANUAL HANDLING

The stacking and packing of meat cartons is a repetitive materials-handling task and the cartons of meat can vary in weight up to 27.2 kilograms. It is therefore important that while you are manually stacking, you pace yourself and take breaks to stretch and relax your muscles. Training in manual handling techniques is important and wherever possible, use mechanical lifting aids.

### 8.2 COOL/COLD WORKING ENVIRONMENT

The temperature within chillers, blast-freezers and cold stores is a mechanically altered environment and may be between 5°C to below 30°C.

Hypothermia occurs when the core body temperature falls below 35°C. Early symptoms include shivering, slurred speech and mental confusion. Victims may often be unaware of what is happening to them. Without re-warming, death will result. Repeated brief interval exposures (such as workers entering and exiting freezers) can have a cumulative chilling effect. Although severe hypothermia is unlikely in a work setting, early symptoms can cause discomfort and can contribute to increased accident rates.



# SECTION 8: PALLETISING; STORAGE; LOADOUT

Other health problems can include frost nip, frost bite and chilblains. Risks of frost bite are greater where frozen product has to be handled without adequate protective clothing.

You need to be wearing adequate thermal protective clothing and gloves when working in these cold environments. The degree of protection will depend on the temperature, “wind chill” caused by air movement and the physical effort involved in the work.

## 8.3 SLIPPERY FLOORS

A layer of ice may form on the blast-chiller floor, forming a slippery surface. This ice is also known as “black ice” because it is difficult to see due to the colour and light levels within the blast-chiller. Wear safety footwear with a good grip and take small steps.

## 8.4 FORKLIFTS

Forklifts are used to cart product in and out of chillers, blast-freezers and cold stores. Forklifts have the right of way. Before approaching the forklift driver, first make eye contact with him or her. The forklift driver will make his or her presence known by sounding the forklift horn while entering or exiting the blast-chiller.

*See S4.4 for more information re forklift safety.*

## 8.5 RACKING AND FRAMING

From time to time, product stacks may become unstable and start leaning or the rack framing may become damaged. If you notice damaged rack framing, report it to your supervisor immediately. Likewise report any unstable product stacks, so that a plan can be put in place to secure them. There is a risk of a domino effect resulting from a collapsed stack.

## 8.6 AMMONIA

A number of chillers, blast-freezers and cold stores operate with anhydrous ammonia as their refrigerant. Anhydrous ammonia is a toxic gas. It has a pungent smell and is often seen as a white cloud.



### FURTHER INFORMATION:

- *Refer to Section 3 for more information on anhydrous ammonia.*




# SECTION 8: PALLETISING; STORAGE; LOADOUT

## 8.7 MAIN PROCESS STEPS IN PALLETISING, STORAGE & LOAD-OUT OPERATIONS:




(Mechanised blast tunnels are used in some plants).

### 8.7.1 STEP 1: PALLETISING (MANUAL STACKING OF PALLETS OR PALLET FRAMES)

HAZARD	CONTROLS
 Manual stacking.	<p>Palletising involves bending, reaching and twisting movements. The risks of strains and sprains are known to increase when awkward movements are combined with handling heavy loads, sometimes up to 27.2 kg. A variety of mechanical aids such as scissor-lifts, turn-tables and vacuum-lifters are available.</p> <ul style="list-style-type: none"><li>• Rotate tasks if practicable (e.g. around products or between container loading and loading of frames).</li><li>• Take micro-pauses; pace yourself and stretch often.</li><li>• Be trained in manual handling techniques.</li></ul>
 Conveyors and rollers.	<ul style="list-style-type: none"><li>• Walk around conveyors and rollers and not underneath them. Use conveyor bridges, conveyor gates and safety cat-walks where provided.</li></ul>
 Forklifts.	<ul style="list-style-type: none"><li>• Beware of forklift movements.</li><li>• Keep to marked pedestrian walkways.</li><li>• Wear hi-viz vests or clothing.</li><li>• See S4.4 for more information re forklift safety.</li></ul>








### 8.7.2 STEP 2: STACKING FRAMES IN CHILLERS OR FREEZERS

(Also - transporting and stacking of pallets of packaging materials).

HAZARD	CONTROLS
 Chilled environment.	<ul style="list-style-type: none"><li>• Wear warm clothing. The extremities of the body cool quickest and therefore fingers and head (nose, chin, ears) are the first to suffer. Protective clothing should at least ensure that the skin temperature does not fall below + 12°C at any of these parts of the body.</li></ul>







## SECTION 8: PALLETISING; STORAGE; LOADOUT

	<ul style="list-style-type: none"> <li>• Rotate with tasks done outside chillers or freezers.</li> <li>• Keep up your core body temperature.</li> </ul>
 Entrapment.	<ul style="list-style-type: none"> <li>• A safe means of exit must be available at all times, even if the door is locked from the outside. Know the emergency exits and check to see that they are easy to open.</li> <li>• Keep exits clear.</li> </ul>
 Slip, trip and fall from ice on floor.	<ul style="list-style-type: none"> <li>• Ensure the defrost cycle is maintained to prevent ice build-up.</li> <li>• Wear safety shoes with a good grip.</li> <li>• Take small steps.</li> <li>• Report any water leakage.</li> </ul>
 Unstable stacks of pallet frames.	<ul style="list-style-type: none"> <li>• Inspect pallet frames prior to use.</li> <li>• Report any bent or damaged frames to your supervisor.</li> <li>• Ensure stacks are stacked vertically straight and no higher than the permissible number of frames.</li> <li>• Stay clear of any leaning stacks; report leaning stacks to your supervisor.</li> <li>• Do not climb onto any meat stacks or frames.</li> </ul>
 Pallet racking hazards. 	<ul style="list-style-type: none"> <li>• Do not overload racking; stay within the stated safe weight loading.</li> <li>• Regularly inspect racking for damage.</li> <li>• Report damaged pallet racking cross beams and uprights.</li> <li>• Never climb pallet racking and never stand on pallet racking shelves.</li> <li>• Protect pallet rack uprights from damage.</li> <li>• When loading pallet racking, beware of the sprinkler heads that may be above the rack.</li> </ul> 
 Forklifts.	<ul style="list-style-type: none"> <li>• Use the marked walkways to keep clear of forklifts.</li> <li>• Both the forklift driver and the employees need to be constantly aware of each other's activities.</li> <li>• Only use battery powered (electrical) forklifts.</li> <li>• See S4.4 for more information re forklift safety.</li> </ul>

# SECTION 8: PALLETISING; STORAGE; LOADOUT

## 8.7.3 STEP 3: LOADOUT

HAZARD	CONTROLS
 Manual stacking in containers.	<ul style="list-style-type: none"> <li>• Rotate tasks.</li> <li>• Take micro-pauses; pace yourself and stretch often.</li> <li>• If carrying carcasses for loading into a truck or container, carry the carcass over your shoulder. Your vision may be obscured by the carcass, so ensure you have clear vision in front of you and that you are aware of your surroundings.</li> <li>• Be aware of your lifting capacity.</li> <li>• Where possible, use mechanical aids such as conveyors and loading rails.</li> <li>• Training in manual handling techniques.</li> </ul> 
 Crush injury.	<ul style="list-style-type: none"> <li>• When loading cartons in a truck or container, make sure that the stacks are stable.</li> </ul>
 Forklifts and congestion.	<ul style="list-style-type: none"> <li>• There could be a number of employees working in the load out area, beware of your surroundings and the people working within it.</li> <li>• Both the forklift driver and the truck driver need to be constantly mindful of each other's activities.</li> </ul>



### SAFETY TIPS:

- Only battery operated forklifts should be used in chillers and freezers or when loading containers, as carbon monoxide may build up, leading to loss of consciousness from a lack of oxygen.
- Forklift drivers must be careful not to bump into frames as this may cause them to topple over, causing a domino effect. Employees have in the past been crushed by falling product.
- Bent frames will reduce their loading capacity. It is important to replace any bent frames as the weight involved may cause the frame to fail.

# SECTION 8: PALLETISING; STORAGE; LOADOUT



## EMPLOYER RESPONSIBILITIES:

- Ensure employees are trained and competent for their tasks.
- Provide suitable manual-handling equipment and make sure that it is well-maintained.
- Ensure employees are provided with appropriate personal protective equipment (PPE).



## EMPLOYEE RESPONSIBILITIES:

- If you are working in a chilled environment, dress warmly for the conditions.
- Ensure you use safety PPE that is provided for you.
- Follow safety rules and procedures at all times.
- If working in a blast freezer, let your supervisor or designated person know that you are out of the freezer before going for a break or leaving for the day.
- Manual handling of meat cartons is a repetitive materials handling task. It is therefore important that while you are packing and stacking, you pace yourself and take breaks to stretch and relax your muscles. Training in manual handling techniques is important and wherever possible, use mechanical lifting aids.
- Early intervention is important - report any discomfort or pain from manual handling promptly to your supervisor.



## FURTHER INFORMATION:

- *Section 4: High Risk Activities – Manual Handling.*
- *Section 4: High Risk Activities – Forklifts.*
- *Manual Handling in the Manufacturing Industry*, available from [www.osh.dol.govt.nz](http://www.osh.dol.govt.nz)
- *Code of Practice for Manual Handling*, available from [www.osh.govt.nz](http://www.osh.govt.nz)
- *Guidelines for the Management of Work in Extremes of Temperature*, available from [www.osh.govt.nz](http://www.osh.govt.nz)

# SECTION 9: MECHANICAL EQUIPMENT

## 9 MECHANICAL EQUIPMENT

Mechanical equipment in the workplace presents various hazards and therefore, systematic and on-going hazard identification is required.



### COMMON MACHINE AND EQUIPMENT HAZARDS INCLUDE:

#### Hazards related to the machinery or plant, such as:

- drawing-in or trapping
- entanglement
- shearing
- cutting
- impact
- crushing
- stabbing and puncturing
- friction and abrasion
- hot or cold
- ejection
- other contact
- noise
- release of hazardous substances.

#### Hazards related to location of the plant, such as:

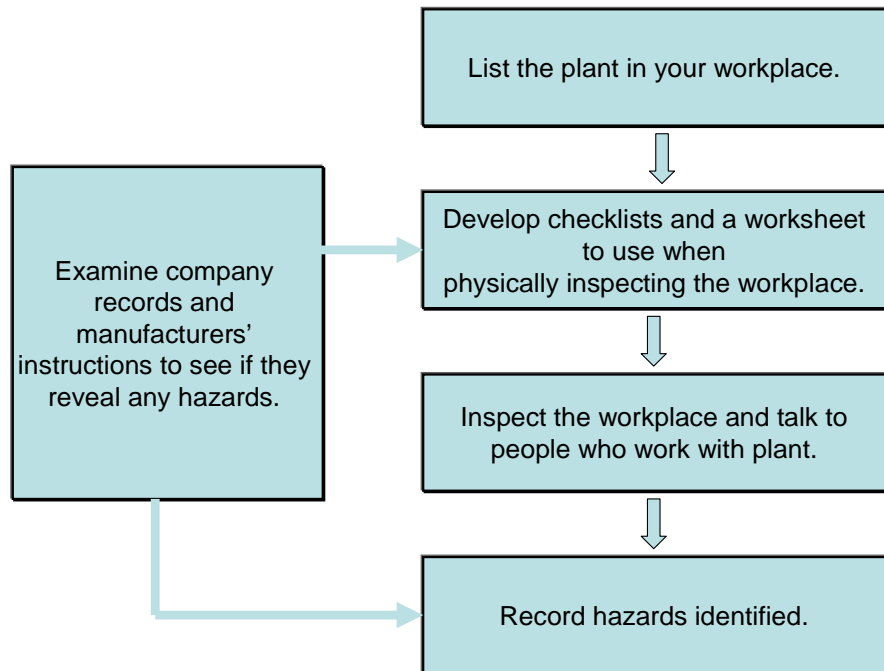
- its stability (for instance, whether it could roll or fall over)
- the environment in which it operates
- its proximity to other structures.

**Hazards related to systems of work associated with the machine or plant**, such as manual handling injuries caused when putting materials into them.

# SECTION 9: MECHANICAL EQUIPMENT

## MACHINERY AND EQUIPMENT HAZARD IDENTIFICATION

Start by identifying all items of machinery and plant used at the workplace. An inspection should be carried out looking for any of these items. An example of a process is given below.



## WHAT ABOUT NEW MACHINERY OR EQUIPMENT?

Manufacturers and suppliers of machinery and plant have a legal responsibility to ensure that the plant is safe for any known intended use or any use of the plant that could be reasonably expected. (This does not apply to second-hand machinery or plant or items purchased "as is").



### THE LAW:

**Section 18 A of the HSE Act 1992** - Duties of persons selling or supplying plant for use in a place of work.

**Sections 66 – 67 of the Health and Safety in Employment Regulations 1995** – duties of designers, manufacturers and suppliers of plant.

Note also similar duties for suppliers of protective clothing and equipment (sections 68 – 69).

# SECTION 9: MECHANICAL EQUIPMENT

Ensure suppliers of plant are aware of the intended use and consider including conditions requiring safe plant or equipment in the purchase contract, such as:

- Goods/plant shall conform to all relevant New Zealand safety legislation.
- Goods/plant shall conform to requirements of the following standards: (e.g. AS 4024 Safety of Machinery series).

Suppliers of plant also have a legal responsibility to provide complete and understandable instructions so that the plant can be used safely.

Instructions for plant (or machinery) must explain:

- hazards associated with the plant
- how to install the plant safely
- how to operate the plant safely
- safe methods for cleaning and adjusting the plant
- maintenance and repairs of the plant
- periodic replacement of parts of the plant that wear
- how to safely take the plant out of service and dismantle it
- any other relevant matters.

## MACHINERY AND EQUIPMENT RISK ASSESSMENT

When carrying out a risk assessment you need to think about more than just the technical factors. The training, experience and ability of your staff can affect risk. Work practices, work conditions and environment also affect the likelihood of a hazard causing injury or harm.

Where you identify hazards and decide that there is a significant risk of their happening, you need to work through a process to control them.

### A process to deal with machine hazards:

What do you need to do to eliminate, isolate or minimise the hazards?



What safeguards can you apply?



What work practices and processes need to change?



What systems are needed to ensure safe work practices and machine hazards are maintained?



# SECTION 9: MECHANICAL EQUIPMENT

Machinery and equipment hazard management should consider the operations of people:

- who install or dismantle machines
- who operate machines and equipment
- who provide maintenance or repair services
- who provide cleaning services.

Where you're unable to eliminate the hazard, you need to consider measures that will protect your workers from the hazard. Machine guards can provide protection.

Effective guarding of machinery and equipment in the meat industry can present a major challenge, especially in processing areas where there is the need to meet strict hygiene requirements.



In addition, the need to be able to access a machine to operate it can pose a major challenge in provision of effective guarding.

Support and input from all people involved, including equipment suppliers, maintenance personnel, staff (from both shifts) and management is essential.



# SECTION 9: MECHANICAL EQUIPMENT

## 9.1 MACHINERY GUARDS AND INTERLOCKS

Guards can protect people from moving parts, electrical shocks, hot surfaces, noise and other hazards.

If you are able to replace a machine with one that doesn't need to have guards fitted, this is the best option for improving safety. However, replacing machines is not always possible, so guards must be installed.

Guards can be mechanical, electrical, fixed, self-adjusting, solid, mesh, presence-sensing or interlocking switches or a combination of more than one of these.

Mechanical guards should have interlocks fitted that shut the machinery down if a guard is removed.



- Check your workplace for machinery hazards such as rotating drive shafts, rollers, belt drives, rotating gears, or any other moving parts that could cause harm. Also look for live electrical equipment and stopping points where parts of the body could get hit or caught.
- Think about what happens when the machine is being operated, maintained and cleaned. Each of these activities can have different hazards.
- If hazards cannot be removed, work out what type of guarding would best protect workers.

# SECTION 9: MECHANICAL EQUIPMENT



## EMPLOYER'S NEED TO:

- Ensure people are protected against accidental contact with hazardous parts of machines.
- Make sure there are policies in place that ensure all guards and covers remain in place when machines are operated.
- Ensure interlocking, proximity and other safety switches are tested periodically as part of your plant maintenance schedule.
- Ensure adequate signs are displayed warning of the dangers of removing guards.
- Make sure there are policies in place that ensure all guards remain in serviceable condition. Guards may become insecure, particularly those that have to be removed often. Your health and safety system should include regular checks on this.



## EMPLOYEE'S RESPONSIBILITIES:

- Only operate machinery that you have been trained to operate.
- Never operate the machine with the covers or guards off.
- If you must remove covers for cleaning or maintenance, make sure the machine is isolated and "locked out" while you are working on it.
- Replace machinery covers securely when you complete the work.
- Never tamper with or override interlock switches designed to turn the machine off when a cover is removed.
- Remember that machines may take time to run down!
- Never take short-cuts.

# SECTION 9: MECHANICAL EQUIPMENT

## 9.2 EMERGENCY STOPS

Machinery emergency stops are installed for safety purposes. They allow us to stop a machine in a hurry. Emergency stops should be fitted in positions where the machine operator can reach them.

Some machines also have secondary emergency stops located by hazardous positions, so that if someone gets caught away from the main control panel they are still able to stop the machine with their other hand.

Some machines are fitted with remote emergency stops so they can be shut down from another area.



### ACTION POINTS:

#### Points to remember:

- Never by-pass any machine's STOP button, even for a short time.
- Make sure all STOP switches, levers and buttons are clearly labelled in red.
- Labels or signs should be large, clean and bright.
- Make sure all staff know where emergency stop buttons are positioned - including emergency stops for equipment they do not operate.
- Keep all STOP buttons and levers free from obstruction.
- Emergency stops and interlocks are not "lock-" points and must never be used for lockout purposes.



### EMPLOYER'S NEED TO:

- Check operation of emergency STOP arrangements regularly as part of your plant maintenance schedule. If there is a remote emergency stop button, use it to shut the machinery down occasionally to prove it is working.

# SECTION 9: MECHANICAL EQUIPMENT

## 9.3 LOCKOUT SYSTEMS

It is often necessary to remove guards or covers for maintenance, clearing a jam or for cleaning purposes. A lockout system prevents anyone starting the machine while this work is being completed.

Lockout systems must be used for any systems that require isolation before being worked on. Electrical, air, hydraulic, mechanical or steam supply systems can all be “locked out” to protect people working on the system.



### THE LAW:

*Health and Safety in Employment Regulations 1995 S17  
Cleaning, maintenance, or repair of machinery.*

### LOCKOUT

- Involves turning the equipment or system power off and locking the switch or valve in the closed position.
- Stops other people from turning the machine on and protects the people who may be working on the machine or system.
- Is required when it is considered that the machine would cause harm if it was accidentally turned on.

It is important to note that it is not only electrical power that is locked out.

If the system is powered by hydraulics, air, steam or electrical power the supply must be locked out.

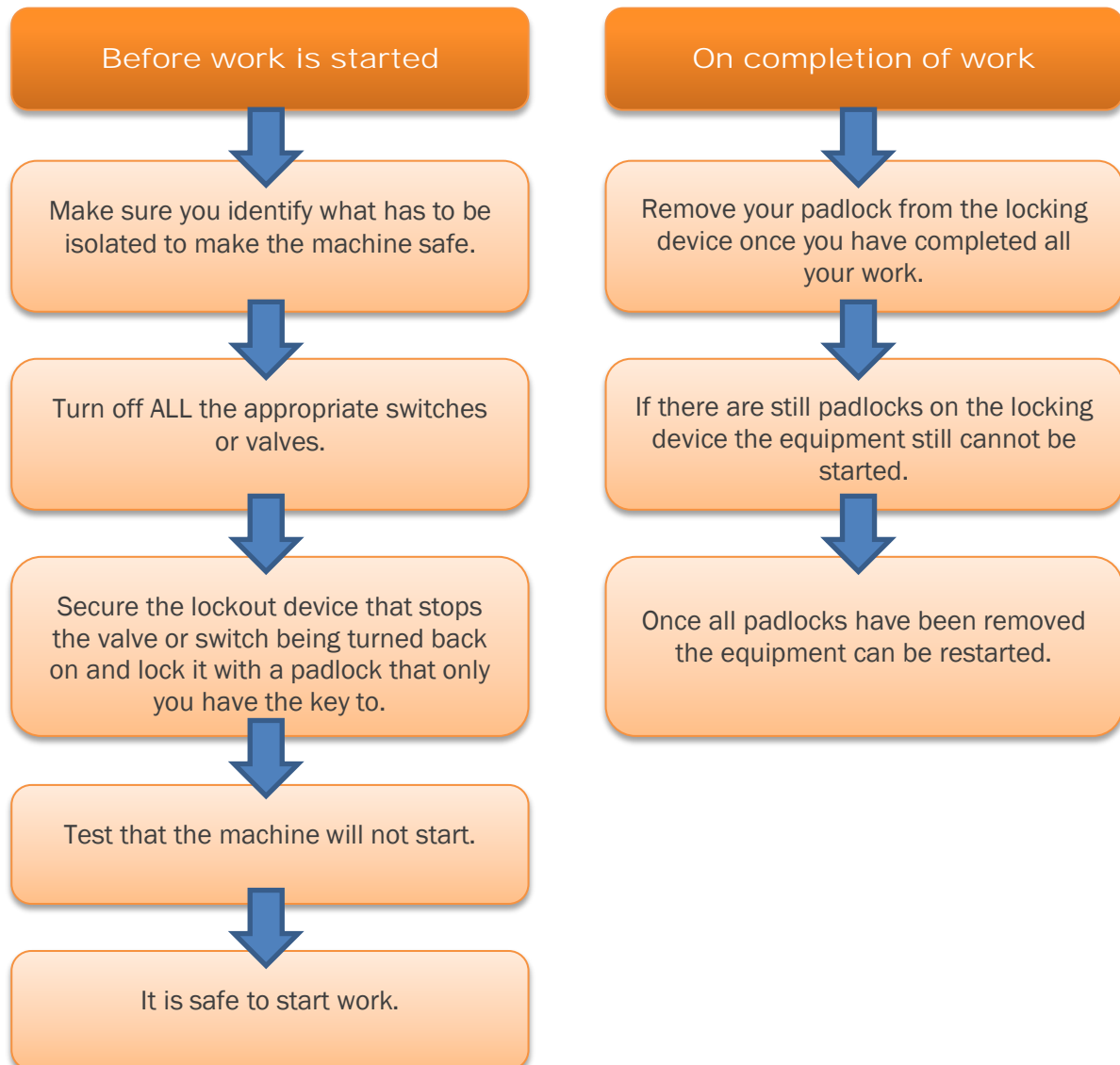
### TYPES OF LOCKOUT SYSTEMS

Most safety specialists have their own range of mechanisms that enable different types of switches and different types of valves to be locked in the OFF position. There are also ways of locking portable/flexible cables or lines.

If your workshop already has its own lockout system, all management, workers and contractors must be made familiar with it.

# SECTION 9: MECHANICAL EQUIPMENT

If you don't already have a lockout procedure, here is an example of what is needed:



If more than one person is working on the machine:

- Each person must have his/her own lock. All the locks should be locked onto a locking device as shown.
- This means the machine cannot be restarted until every person is clear.

**The machine must NOT be restarted until EVERY person is clear!**

# SECTION 9: MECHANICAL EQUIPMENT



## EMPLOYER'S NEED TO:

- Make sure that there is an organised lockout system in place.
- Insist that all people (managers, workers and contractors) use the lockout system at all times.
- If it is essential to have any machinery in motion during cleaning, maintenance or repair, there must be a safety procedure for this work; only persons trained in the procedure can do that work and the procedure must be followed on every occasion to which it applies.
- Train all workers in these procedures, and ensure they sign off to confirm that they have understood the training.
- Include in any written operating procedures all isolation points for maintenance or other tasks that may require the system to be made safe by locking out.



## FURTHER INFORMATION:

Note that the Ministry of Business, Innovation and Employment (MBIE) plans to publish a new set of guidelines in 2013: ***Best Practice Guidelines for the Safe Use of Machinery 2013*** – which will be available from [www.mbie.govt.nz](http://www.mbie.govt.nz)

In these draft guidelines, it is stated that “The **AS 4024 Safety of Machinery series** represents the current state of knowledge in relation to the safeguarding of equipment and should be referred to by duty holders as the primary standard against which to benchmark.”

Bearing in mind the above statement, ***AS 1755-2000 Conveyors – Safety Requirements*** has been found to be useful. Available from [www.saiglobal.com](http://www.saiglobal.com)

# SECTION 9: MECHANICAL EQUIPMENT

## 9.4 MACHINERY AND EQUIPMENT MAINTENANCE

It is important that all machinery and equipment, both static and mobile, is well maintained so that it can be operated safely.



### EMPLOYERS NEED TO:

- Ensure plant, machinery and equipment is regularly maintained by appropriately qualified people.
- Record maintenance and repairs.
- Where a machine cannot be repaired and it would be unsafe to continue to use it, replacement is appropriate.



# SECTION 10: CHEMICAL HANDLING

## 10 CHEMICALS AND OTHER HAZARDOUS SUBSTANCES

Many chemicals and other substances used or produced in the workplace can be very damaging to health. People are exposed to these substances through breathing in the fumes or simply through skin contact.

Hazardous substances include chemicals, poisons, explosives and flammable materials. These hazardous substances are present in products such as cleaners, coolants, lubricating fluids and paints.

The meat industry in New Zealand utilises a variety of chemicals within our operations such as: chlorine based sanitisers for cleaning; stock washes; and refrigerant agents such as ammonia.

If exposure isn't prevented, or properly controlled, it can cause serious illness, including asthma, dermatitis or cancer, and sometimes even death. Recent research by the National Occupational Health and Safety Advisory Committee (NOHSAC) estimates that 700 to 1,000 people die in New Zealand each year from diseases caused by exposure to hazardous substances in their workplace.



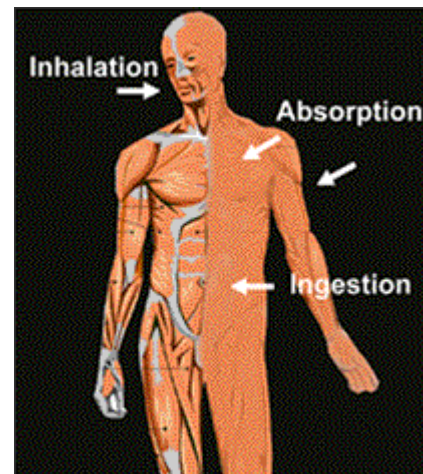
### 10.1 HOW WE ARE AFFECTED

We are exposed to chemicals in different ways. For example:

- INHALATION – breathing in.
- ABSORPTION – skin contact.
- INGESTION – swallowing.

There is a difference between acute (short term) and chronic (long term) conditions.

An acute condition is noticed quickly and has short term effects such as a chemical burn or dizziness, headaches and vomiting. Asbestosis is an example of a dangerous substance affecting the body over a long period of time. This is a chronic lung condition caused through inhaling asbestos fibres as long ago as 30 years.



Both acute and chronic conditions can result in permanent injury. However, the injury will be only temporary if steps are taken to ensure that the person does not come into contact with the same substance again.

The Hazardous Substances and New Organisms Act (HSNO Act) covers the requirements for the use and storage of these substances. The HSNO Act requires every workplace to have a "Person

# SECTION 10: CHEMICAL HANDLING

in Charge” of hazardous substances. This person is responsible for ensuring that the hazardous substances under their control are correctly stored and used.

## 10.2 TEST CERTIFICATES

The Person in Charge must ensure necessary test certificates are obtained. Test certificates verify that the required controls for managing hazardous substances are met. They are required for the following:

- **Locations** – where hazardous substances are held in excess of the specified limits a hazardous substance location must be established and a test certificate obtained.
- **Approved Handlers** – where particularly hazardous substances are under the control of an Approved Handler or secured.
- **Approved Fillers** – employees filling compressed gas containers must be Approved Fillers and know about the substance they are handling and the equipment.
- **Stationary container or storage systems** – a test certificate is required for a stationary container system to confirm that it is designed, installed and maintained to the required standards.

The following is a brief guide to show you where storing certain quantities of substances may trigger the need for Location Test Certificates:

Substance	Classification	Location test Certificate Required
LPG	2.1.1A	>100 kg
Petrol	3.1A, 6.1E, 6.3B, 6.7B, 9.1B	Open or closed containers: >50 litres
Chlorine	5.1.2A , 6.1A (All), 6.1A (I), 6.9A (All), 6.9A (I), 8.1A , 8.2A , 8.3A , 9.1A (All), 9.1A (C), 9.1A (F), 9.2A	> 150kg
Diesel Fuel	3.1D, 6.1E, 6.3B, 6.7B, 9.1B	Not required
Sodium Hypochlorite	5.1.1B , 6.1E (I), 8.2C , 8.3A, 9.1A (All), 9.1A (C), 9.1A (F), 9.1D (A)	Not required
Hydrogen peroxide 20-60% aqueous solution	5.1.1B, 6.1D, 6.9B, 8.2B, 8.3A, 9.1D, 9.3C	>500 litres
Carbon Dioxide(CO <sub>2</sub> ) – Food Grade		Refer to the Hazardous Substances (Compressed Gases) regulations 2004

# SECTION 10: CHEMICAL HANDLING

A Test Certifier approved by the New Zealand Environmental Protection Authority (EPA) will issue the Location Test Certificate. A register of test certifiers is available on the EPA website [www.epa.govt.nz](http://www.epa.govt.nz).

## 10.3 HAZARDOUS ZONES

Hazardous zones are required under the HSNO Act if flammable liquids and gases are present. The Person in Charge must manage sources of ignition in these areas. Hazardous zones may be required for small quantities, depending on whether containers are closed, opened occasionally, or always open.

## 10.4 APPROVED HANDLERS

Approved Handlers must be on-site if:

- There are sufficient quantities of flammable liquid and gas.
- Toxic chemicals such as “pickling paste” are used.

An Approved Handler is a person who is competent and certified to handle certain hazardous substances. To become an Approved Handler you must meet the requirements of the Hazardous Substances and New Organisms (Personnel Qualifications) Regulations 2001. It is an easy process, particularly if you have handled the substances before.

## 10.5 TRACKING

Tracking is required for the most highly hazardous substances, such as explosives and vertebrate poisons, like 1080. Substances that require tracking are listed in Schedule 1 of the Hazardous Substances (Tracking) Regulations 2001, available on the New Zealand Legislation website.

Tracking is a system of recording when certain toxic chemicals are delivered to the site, when they are used and when they are disposed of.

Tracking records what happens to a hazardous substance throughout its lifecycle, from importation or manufacture to use or disposal. The Person in Charge must ensure necessary records are kept. If the substance is transferred to another location, the Person in Charge must ensure the new location has the necessary test certificate, if required, and has an Approved Handler.

## 10.6 STATIONARY CONTAINER TEST CERTIFICATES

Stationary container test certificates may be required for stationary container systems such as storage tanks.

# SECTION 10: CHEMICAL HANDLING

## 10.7 EMERGENCY MANAGEMENT PLANS FOR HAZARDOUS SUBSTANCES

There must be emergency management procedures to cover all classes of substances found in your workplace. For example, you need sufficient fire extinguishers, suitably located and of the right type.

For certain hazardous substances you will require specific Emergency Management plans to comply with the HSNO Act.

The HSNO Emergency Management requirements are primarily found in the Hazardous Substances (Emergency Management) Regulations<sup>1</sup>. These regulations list three levels of Emergency Management requirements and these depend on the quantities of hazardous substances that you hold. The levels include requirements for the provision of information (e.g. first aid instructions or spill response procedures), equipment (e.g. fire-extinguishers) and emergency response plans.

### LEVEL 1

- Information, for example first aid directions or emergency response contact details on labels, should be clear and readily available so people know the effects of the substance and the remedies.

### LEVEL 2

- Documentation, such as Safety Data Sheets, should be made available so that people will know in advance the properties of the substance and what to do in an emergency.
- Fire extinguisher requirements.

### LEVEL 3

- Signage requirements.
- Emergency response plans.
- Secondary containment, or bunding, to contain spills.

The level of emergency management required depends on the quantity of hazardous substances held at the location, and the requirements are cumulative with higher levels of Emergency Management required when larger quantities of hazardous substances are present.

The 'trigger quantities' for each hazardous substance classification for each level of Emergency Management are listed in the various schedules to the Emergency Management Regulations. Where a substance has more than one hazard classification, the required trigger is the lowest trigger quantity for those hazard classifications.

In the case of the fire extinguisher, emergency response planning and signage requirements, the trigger quantities are based on the aggregated quantity of all hazardous substances held at that location.

# SECTION 10: CHEMICAL HANDLING

## 10.8 PRACTICAL CONTROL MEASURES WITHIN THE MEAT INDUSTRY

You should always check what controls you are required to have under the HSNO Act for your specific workplace. Each site, depending on size, function and role, chemical storage facilities etc. will differ.

There are some common practical controls that are likely to be required. These include:

- ☐ **Correct storage** i.e. ensuring they are secure and unable to be accessed by unauthorized persons.
- ☐ **Segregation** of incompatible chemicals i.e. keeping chemicals apart that may react.
- ☐ **Staff Training** i.e. not only in their use but also emergency procedures. Workers also need to be trained in the correct use of PPE when handling chemicals.
- ☐ **Clear labelling.**
- ☐ **Bunding:** an environment that can hold the volume of stored chemical should it accidentally leak or the container or vessel rupture or fail.
- ☐ **Spill Kit:** for use if there is a chemical spill on site. NOTE: it is important that correct PPE always be worn if cleaning a chemical spill. This should best be stored with the spill kit.
- ☐ **Safety Data Sheets** specific to each chemical and located next to the chemical stored (previously referred to as a Material Safety Data Sheet – MSDS).
- ☐ **Clear and correct instructions** for dilution and use of chemicals.
- ☐ **Clear signage.** Often you will see signage with pictograms at the entrance to a meat processing facility indicating what type of chemicals are located on site i.e. Corrosives, Flammable agents etc.



# SECTION 10: CHEMICAL HANDLING



The **Person in Charge** of the hazardous substances needs to:

- Know their responsibilities under the HSE Act and the HSNO Act.
  - Find out if it's possible to do the job with safer products.
  - Ensure hazardous substance locations are set up in the workplace, and that these have a Location Test Certificate where needed.
- 
- Ensure hazardous atmosphere zones are established and sources of ignition (heat/fire) are managed.
  - Segregate incompatible substances.
  - Make sure that Approved Handlers are trained and appointed as required.
  - Get a Safety Data Sheet (SDS) from the supplier for each product used. Use the SDS to work out what safety precautions are needed:
    - Quantity allowed.
    - Storage needs.
    - Ventilation requirements.
    - Safe exposure levels.
    - Training and safety gear needed.
    - Emergency procedures.
  - Regularly check that exposure levels are safe.
  - Have a safety plan for dealing with accidents and emergencies. Think about:
    - Fire extinguishers and hoses.
    - Emergency showers or eyewash facilities.
    - First aid training and equipment.
    - Emergency communications (cell phone, radio telephone, VHF transceivers).
    - Distance from emergency services.
    - The safety of customers and visitors.



## THE LAW:

***The Hazardous Substances and New Organisms (HSNO) Act 1996*** – available from [www.epa.govt.nz](http://www.epa.govt.nz).

***Management of Substances Hazardous to Health (Approved Code of Practice)*** – available from [www.dol.govt.nz](http://www.dol.govt.nz).

***Working with Hazardous Substances*** – information on the HSNO Act on the Environmental Protection Authority (EPA) website [www.epa.govt.nz](http://www.epa.govt.nz)



# SECTION 10: CHEMICAL HANDLING



## EMPLOYER'S NEED TO:

- Make sure you are aware of the requirements of the HSNO Act for using, handling and storing these products.
- Keep a hazardous substances register.
- Make sure that everyone using hazardous substances is properly trained and follows the safety plan.
- Ensure there are systems in place for monitoring exposure levels and that they are followed.
- Arrange for a doctor to monitor the health of everyone exposed to the substances.
- Provide copies of Safety Data Sheets for all products used and make sure they are located where they are readily available to those who may need them.



## EMPLOYEE'S RESPONSIBILITIES:

- To wear PPE and safety clothing provided.
- Never use contents from an unlabelled container.
- Always read the information on the hazardous substance label.
- Ensure you are trained in how to use and store hazardous substances safely and that you know what to do should you spill chemicals in your work area.
- If you are unsure what to do, ASK.



## FURTHER INFORMATION:

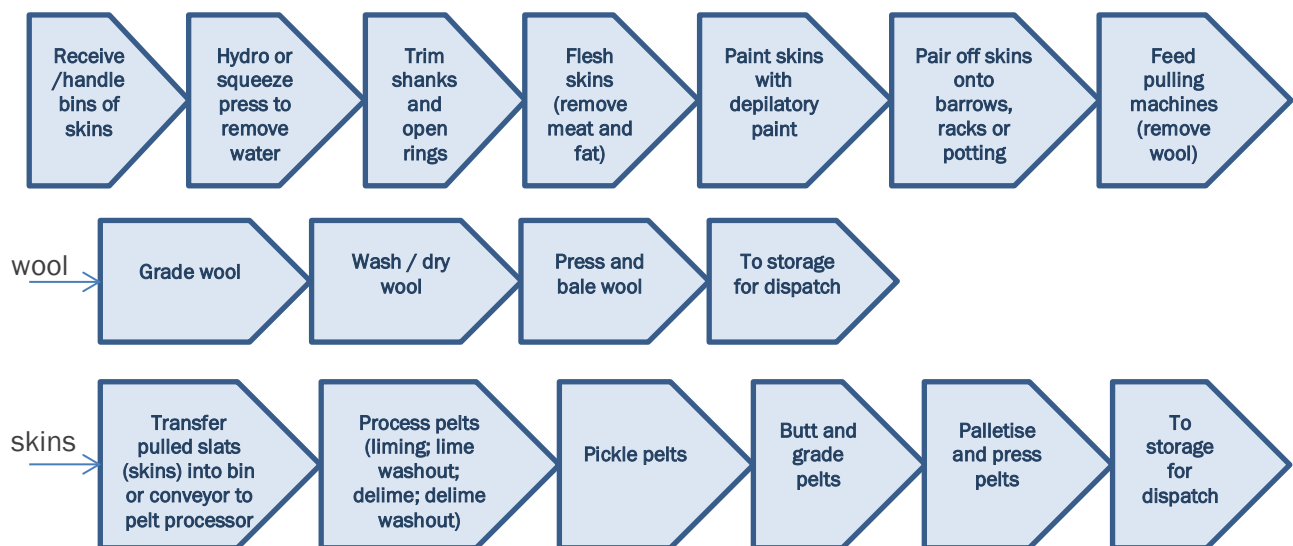
- *Controls under the HSNO Act – Safety Hints for Users* – available from [www.osh.govt.nz](http://www.osh.govt.nz).
- *HSNO Chemical Classification and Information Database* – available from [www.epa.govt.nz](http://www.epa.govt.nz).
- *Test Certifiers* – available from [www.epa.govt.nz](http://www.epa.govt.nz).
- *Workplace Exposure Standards (WES)* – available from [www.dol.govt.nz](http://www.dol.govt.nz).



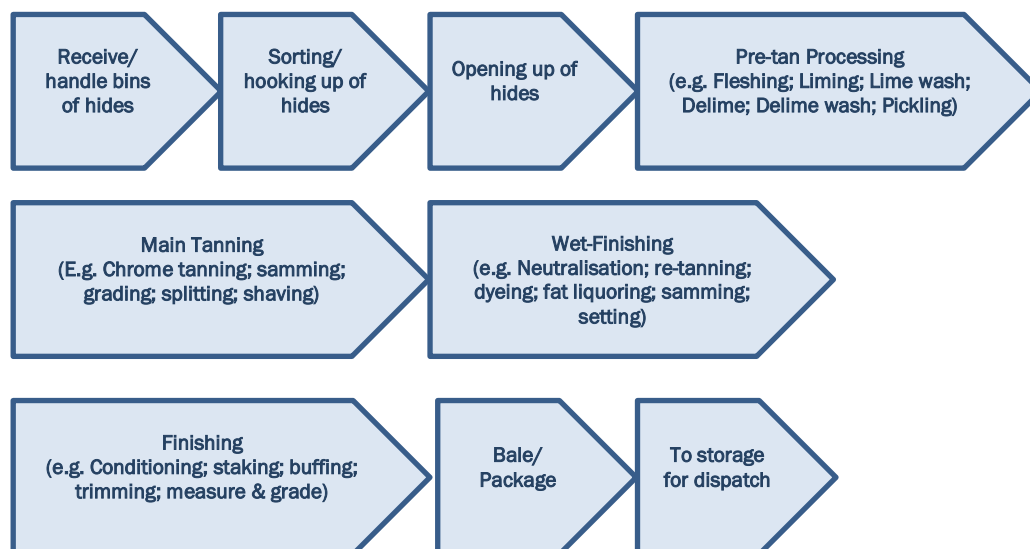
# SECTION 11: FELLMONGERY & TANNING

## 11 FELLMONGERY AND TANNING OPERATIONS

Fellmongery and tanning operations involve a lot of movement, physical activity, machinery, and chemicals. The operations are complex (see diagrams below) and vary depending on the level of mechanisation, automation, products and volumes handled at your plant. It is important that you are familiar with the processes and hazards in your plant.



GENERIC FELLMONGERY OPERATIONS



GENERIC TANNING OPERATIONS

# SECTION 11: FELLMONGERY & TANNING

## 11.1 CHEMICALS USED IN THE FELLMONGERY AND TANNING PROCESSES

The fellmongery and tanning processes both rely very heavily on chemistry and some very powerful chemicals are used. For this reason, this section will focus on hazards associated with the mixing and use of chemicals used in the fellmongery and tanning processes.

The actual chemicals used in your plant will depend on the processes used and the types of skins and hides that are processed.

Depilatory paint (for wool removal) will be a sodium sulphide solution containing sodium hydroxide and/or calcium hydroxide (lime). Other sulphides such as sodium hydrogen sulphide or calcium hydrogen sulphide may also be used. Special additives may also be included.

For pelt and hide processing, a variety of chemicals may be used such as sodium sulphide, carbon dioxide, ammonium chloride, ammonium sulphate, sodium metabisulphite, hydrogen peroxide or sodium percarbonate, and Bate (enzyme). For deliming, the use of carbon dioxide instead of ammonium chloride or ammonium sulphate is gaining in favour because it can be easily automated. For pickling, a variety of chemicals may be used such as sulphuric acid, salt and fungicide. For tanning, chromium salts are used along with other tanning agents and chemicals for pH adjustment.



### HAZARDS:

- The main hazards associated with receipt and storage of bulk chemicals are inadvertent mixing and spillage.
- The hazards associated with mixing and use of the chemical solutions will depend on the types of chemicals, equipment and methods used but the **main hazards are hydrogen sulphide fumes, dust from powdered chemicals and chemical contact burns to skin or eyes.**
- Note that hydrogen sulphide is a colourless gas with the characteristic foul odour of rotten eggs; it is heavier than air, very poisonous, corrosive, flammable and explosive. Note that at high concentrations, there is a loss of the sense of smell. This means that the gas can be present at dangerously high concentrations, with no perceivable odour. Prolonged exposure to lower concentrations can also result in loss of ability to smell. This property of hydrogen sulphide makes it extremely dangerous to rely on the sense of smell to warn of the presence of the gas.
- Other chemical fumes may also be given off, such as sulphur dioxide from reaction of sodium metabisulphite and acid; and ammonia from the Delime wash.

# SECTION 11: FELLMONGERY & TANNING

- The main chemical hazard associated with manual handling of painted skins, slats and pelts and lime split hides is chemical contact burns to skin or eyes.
- Note that inadvertent mixing of acid and alkali can result in a hazardous chemical reaction such as production of hydrogen sulphide fumes. This could occur if an incorrect sequence is followed during mixing of the processing solutions, or incorrect mixing or use of cleaning chemicals.
- Not also that dilution of a concentrated chemical with water can result in a hazardous chemical reaction. When diluting concentrated chemicals, always gradually add the chemical to the water.



## EMPLOYER'S RESPONSIBILITIES:

- Ensure you meet the HSN0 Act requirements for Test Certificates, Hazardous zones , Approved Handlers and Emergency Management Plans for Hazardous Substances (see Section 10: Chemicals and other hazardous substances).
- Ensure correct storage and segregation of incompatible chemicals.
- Ensure Safety Data Sheets specific to each chemical are provided and located where they are readily obtainable from points of use.
- Ensure there is clear labelling and signage for each type of chemical.
- Ensure staff are trained in the hazards of the chemicals being used, safe procedures for their use and also emergency procedures for first aid and spillage.
- Ensure staff are provided with the correct type of personal protective equipment in accordance with the relevant Safety Data Sheets.
- Ensure effective ventilation and monitoring of hydrogen sulphide and other hazardous gas emissions from pelt or hide processing.

# SECTION 11: FELLMONGERY & TANNING



## EMPLOYEE'S RESPONSIBILITIES:

- Ensure you are trained in the correct procedures for safe use of the chemicals you are using or may come in contact with.
- Always wear the appropriate PPE as per the relevant Safety Data Sheet (generally impermeable gauntlet-type gloves, apron, gumboots); a respirator may be required when mixing powdered chemical solutions.
- Know the location of relevant chemical Safety Data Sheets or safety information.
- Know the location of safety showers and eye-wash stations.



## FURTHER INFORMATION:

Refer to *Section 10: Chemicals and other hazardous substances*.

## 11.2 OTHER HAZARDS

There are many other hazards associated with fellmongery and tanning operations. The main hazards are:

### MANUAL HANDLING – SPRAINS AND STRAINS

There is a lot of manual handling involved in fellmongery and tanning operations.

For example, with fellmongery operations there is handling of skins; trimming of skins; spreading of skins onto the paint table; pairing off skins; feeding of fleshing and pulling machines; feeding of bins and conveyors; and butting, grading, packing and pressing of pelts. For tanning operations, there is sorting of hides, opening up of hides, feeding fleshing machines, trimming and weighing, splitting hides, feeding sammer machines, grading, crust trimming, baling and many more.

Ensure you use correct manual handling procedures; rotate tasks as much as practicable, make use of micro-pauses and report early warning signs of strains.

# SECTION 11: FELLMONGERY & TANNING



## FURTHER INFORMATION:

Refer to ***Section 4.2: Manual Handling: Sprains and Strains.***

## MACHINERY

There is a lot of machinery involved in both fellmongery and tanning operations. In fellmongery operations there is machinery such as hydro machines or squeeze presses for removal of water; fleshing machines; depilatory paint applicators, conveyors, wool pulling machines; wool driers; and vessels for pelt processing such as Challenge Cookers. In tanning operations there are a lot of machines such as conveyors, fleshing machines, tanning drums, splitting machines, sammer machines, shaving machines, dryers, stakers and so on.

Always follow the correct operating and cleaning procedures for the machinery and equipment that you are operating and know the location of emergency stop buttons. Machine malfunctions and breakdowns must be reported immediately. Ensure machines are correctly locked out before attempting to clean, clear or fix them.



## FURTHER INFORMATION:

Refer to ***Section 9: Mechanical Equipment.***

## USE OF KNIVES

Knives are used for trimming of shanks and opening of rings (sheep skins) and for brisket and leg opening, removal of head pieces and trimming of hides. Always wear your PPE (mesh glove on the non-knife hand and cut-resistant glove on the knife-hand); keep your knife sharp and follow knife safety procedures.



## FURTHER INFORMATION:

Refer to ***Section 4.1: Use of knives.***

# SECTION 11: FELLMONGERY & TANNING

## FORKLIFTS

Forklifts are used for materials receipt, transfers, storage and dispatch. LPG powered forklifts are more likely to be used in fellmongery and tanning operations than electric battery power. Any forklift powered by LPG, diesel or petrol emits carbon monoxide when operating.



### HAZARD:

- Carbon monoxide is a dangerous gas that can cause headaches, dizziness, unconsciousness and even death.
- It has no smell, no taste, doesn't irritate your nose, mouth or skin and it is invisible.
- It is impossible to detect carbon monoxide without the use of monitoring equipment.
- It can quickly build up in areas with limited ventilation.
- The risk of carbon monoxide exposure increases when forklifts are left to idle when not in active use in or near enclosed areas.

Correct maintenance of catalytic converters and good ventilation is essential. A safety plan to prevent carbon monoxide poisoning must be put in place. The safety plan will depend on the degree of risk but is likely to include regular testing of emissions, checking of ventilation and carbon monoxide monitoring.

The other main hazard is being struck by a forklift. Always take care around forklifts.



### FURTHER INFORMATION:

Refer to *Section 4.4: Forklifts*.

# SECTION 11: FELLMONGERY & TANNING

## SLIPS, TRIPS AND FALLS

Slips, trips and falls are another hazard involved in fellmongery and tanning operations. Always wear non-slip footwear; walk – don't run; and keep the work area clean and tidy.



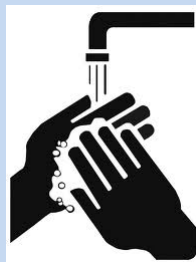
### FURTHER INFORMATION:

Refer to *Section 3.9: Housekeeping*.

## ZOO NOTIC DISEASES

Many diseases can be transferred from animal to human. These are referred to as zoonotic diseases. They can be transferred through contact with skin, wool, hair, blood, saliva, urine and faecal products. The main risks are from leptospirosis, campylobacter, salmonella, cryptosporidium and orf.

Of these diseases, the most serious is leptospirosis. Leptospirosis can make you feel unwell with general flu-like symptoms that include: headaches, aching muscles, bright lights hurting your eyes, fever or chills, nausea and vomiting. If not treated quickly, serious illness and even death can occur.



### To protect yourself from leptospirosis:

- Always wear protective gloves when handling skins.
- Carefully wash your hands and forearms before eating, drinking, smoking or touching your lips, face or eyes.
- Wash your face as well if you have a moustache or beard.
- Cover cuts and abrasions with waterproof plasters.
- Report any flu-like illness to your doctor and remember to mention that you're a meat worker.



# SECTION 11: FELLMONGERY & TANNING



## FURTHER INFORMATION:

For further information regarding diseases that can be transferred from animals to humans during meat processing, refer to ***Section 4: High Risk Areas – Work contributing to zoonotic diseases.***

## NOISE

Constant exposure to noise can lead to hearing loss. As a standard rule of thumb, if a co-worker is about a metre away from you and they have to shout to be heard, then hearing protection is required. Hearing protection must be worn correctly in order to protect you from hearing loss.

Note that noise-induced hearing loss is permanent and hearing aids are not a substitute for natural hearing.



## FURTHER INFORMATION:

Refer to ***Section 3.4: Noise.***

## OTHER HAZARDS

Other hazards involved in fellmongery and tanning operations are covered elsewhere in these Guidelines, e.g.: Section 3: Working Environment and Section 4.5: Working at Heights; Section 4.6: Confined Space Entry and Section 11: Emergency Management.

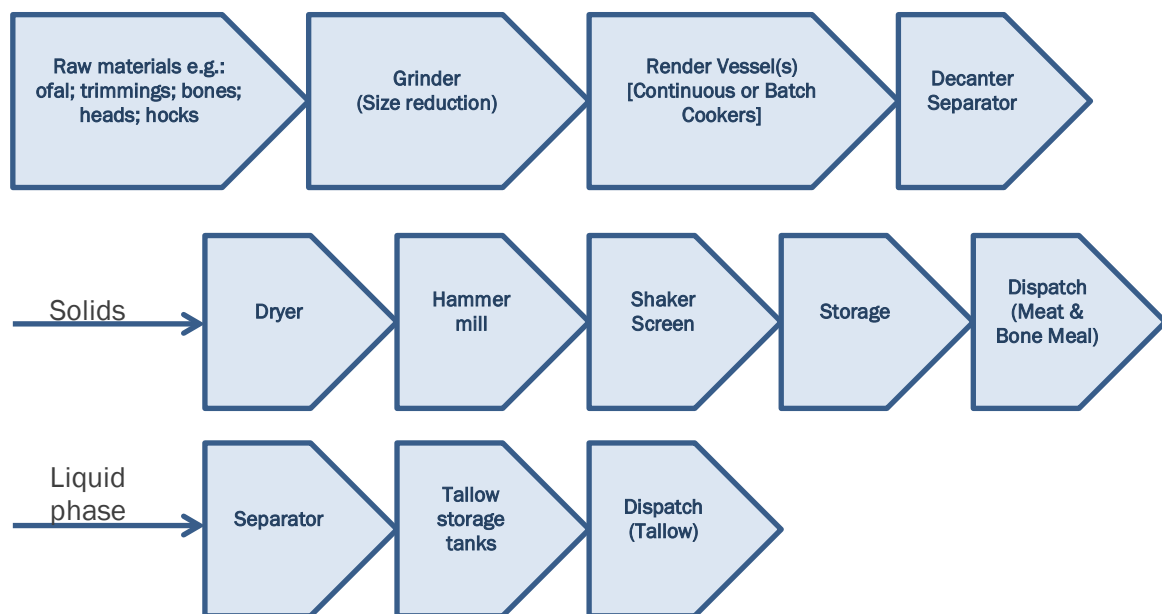
# SECTION 12: RENDERING

## 12 RENDERING OPERATIONS

Rendering involves the processing of those parts of the animals that are not used for human consumption. These parts include heads, hocks, bones, offal parts, blood and various other tissues which we cannot or choose not to eat. Rendering is a cooking and separating process which involves size reduction, high temperatures, separation, drying and conveying equipment.

The operations are complex (see diagram below) and will vary depending on whether using continuous or batch cookers, the products and the volumes handled at your plant.

It is important that you are familiar with the processes and hazards in your plant.



Simplified Generic Rendering Process diagram



Simplified Generic Blood Processing and Drying Process

It can be seen that a rendering plant is an industrial environment with many hazards. It is important that you are familiar with the processes and hazards in your plant. The main hazards are:

### MACHINERY

There is a lot of machinery involved, such as screw-conveyors, grinders, cookers, decanter separators, centrifugal disk separators, screw presses, evaporators, condensers, dryers, shaker screens, hammer-mills, and pumps.

# SECTION 12: RENDERING

Always follow the correct operating and cleaning procedures for the machinery and equipment that you are operating and know the location of emergency stop buttons. Machine malfunctions and breakdowns must be reported immediately. Ensure machines are correctly locked out before attempting to clean, clear or fix them.



## FURTHER INFORMATION:

Refer to *Section 9: Mechanical Equipment*.

## NOISE

Constant exposure to noise can lead to hearing loss. As a standard rule of thumb, if a co-worker stands about a meter away from you and they have to shout to be heard, then hearing protection is required. Hearing protection must be worn correctly in order to protect you from hearing loss.

Note that noise-induced hearing loss is permanent and hearing aids are not a substitute for natural hearing.



## FURTHER INFORMATION:

Refer to *Section 3.4: Noise*.

## HOT LIQUIDS, STEAM AND VAPOURS

Temperatures involved in cooking vary between 90°C to 135°C depending on whether using low-temperature or high temperature rendering. The temperature of steam depends on pressure; the temperature of saturated steam at 10 bar is 180°C. It can be seen that vapour from steam, cookers and hot water vessels will be very hot and can cause severe burns.

Pipes carrying hot liquids, steam and vapours should be clearly identified and lagged. Take particular care when opening inspection hatches and ensure vessels and pipes have been cooled and isolated before undertaking any work on these items.

# SECTION 12: RENDERING



## FURTHER INFORMATION:

*Approved Code of Practice for the design, safe operations, maintenance and servicing of boilers* – available from [www.business.govt.nz](http://www.business.govt.nz)

*Approved Code of Practice for pressure equipment (excluding boilers)* – available from [www.business.govt.nz](http://www.business.govt.nz)

## CHEMICALS

Various chemicals are used in the rendering process for hydrolysing, pH adjustment and for cleaning. Always wear the appropriate personal protective equipment, following the safety procedures and know the location of safety showers and eye-wash stations.



## FURTHER INFORMATION:

Refer to ***Section 10: Chemicals and other hazardous substances.***

## FORKLIFTS/LOADERS/VEHICLE TRAFFIC

Take care where vehicles are operating. Keep clear of these vehicles and always follow your company's safety procedures.



## FURTHER INFORMATION:

Refer to ***Section 4.4: Forklifts.***

## SLIPS, TRIPS AND FALLS

Slips, trips and falls are another hazard involved in rendering operations. These can arise from animal grease on floors, uncovered drains and objects on the floor. Always wear non-slip footwear; walk – don't run; take care on stairways and platforms and keep the work area clean and tidy.

# SECTION 12: RENDERING

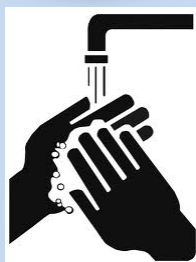


## FURTHER INFORMATION:

Refer to *Section 3.9: Housekeeping*.

## ZOO NOTIC DISEASES

You are at risk from contracting zoonotic diseases when handling the raw materials for the rendering process. Zoonotic diseases are diseases that can be transferred from animals to humans. The main risks are from leptospirosis, campylobacter, salmonella, cryptosporidium and orf.



- Always wear protective gloves when handling rendering raw materials.
- Carefully wash your hands and forearms before eating, drinking, smoking or touching your lips, face or eyes.
- Sanitise hands with alcohol. This not only sanitises your hands but will identify any cuts by stinging them.
- Cover cuts and abrasions with waterproof plasters.
- Report any flu-like illness to your doctor and remember to mention that you're a meat worker.



## FURTHER INFORMATION:

For further information regarding diseases that can be transferred from animals to humans during meat processing, refer to *Section 4: High Risk Areas – Work contributing to zoonotic diseases*.

## OTHER HAZARDS

Other hazards involved in rendering operations are covered in elsewhere in these Guidelines, such as Section 3: Working Environment and Section 4.5: Working at Heights; Section 4.6: Confined Space Entry and Section 11: Emergency Management.

# SECTION 13: EMERGENCY MANAGEMENT

## 13 EMERGENCY MANAGEMENT

The Health and Safety in Employment 1992 Act requires preparation to respond to emergencies in a place of work, to prevent harm or potential harm, to employees.

An emergency is described as 'a sudden state of danger'.



### THE LAW:

*The Health and Safety in Employment Act 1992 (Section 6)* – available from [www.legislation.govt.nz](http://www.legislation.govt.nz)

Emergencies may be natural or manmade and may arise from:

Internally-originating problems such as:

- fire;
- explosion;
- power failure;
- equipment failure;
- toxic gas leakage; and
- chemical spills.

External occurrences that may lead to emergencies include:

- storm and flood; and
- earthquake.

It is better to prepare for an emergency before it happens. Few people can think clearly and logically in a crisis, so it is important to do so in advance, when you have time to be thorough.

It is likely that your site will already have a fire or evacuation plan (see later in this section). But this will not cover all emergencies. A broad approach is required to identify all emergency hazards that may arise on the site.

The goal of an emergency plan is to ensure the safety of all occupants of the affected area and to minimise damage.

Emergency plans should include:

- Identification of all relevant potential hazards.
- An early warning system.
- Response to the emergency including an evacuation plan and shut down procedures.
- Training to ensure all personnel are aware of the procedures to be followed.
- Practise of evacuation procedures.
- Maintenance of all equipment including fire extinguishers, warning systems, emergency lighting and exits.

# SECTION 13: EMERGENCY MANAGEMENT

- Training in the use of emergency equipment such as fire extinguishers.

Emergency procedures need to be appropriate for the potential dangers of the workplace, including safety of people lawfully in the place of work. It is also important that the relevant people understand and have practised their roles in emergencies.



- Posting of Emergency Action Flip-charts in strategic locations is a practical means of ensuring people have ready access to emergency action plans.



## FURTHER INFORMATION:

- ***Hazard Assessment*** – available from [www.civildefence.govt.nz](http://www.civildefence.govt.nz)
- ***Planning and Preparedness*** – available from [www.civildefence.govt.nz](http://www.civildefence.govt.nz)
- ***Audit for Business*** – available from [www.civildefence.govt.nz](http://www.civildefence.govt.nz)
- ***Emergency Response Flipchart*** – available from <http://www.epa.govt.nz/publications/emergency-procedures-stop.-think.-act.pdf>
- ***Quick Guide to Emergency Management*** – available from [www.epa.govt.nz](http://www.epa.govt.nz)



# SECTION 13: EMERGENCY MANAGEMENT

## 13.1 FIRE SAFETY AND EVACUATION

A building owner must ensure the building complies with the Fire Service Act 1975 and the Fire Safety and Evacuation of Buildings Regulations 2006. Many of the buildings in the meat industry will require a New Zealand Fire Service approved evacuation scheme.

An evacuation scheme describes the measures that have been put in place to enable safe and timely evacuation in the event of a fire (or suspected fire), including:

- Evacuation procedure.
- Training.
- Signs and notices.
- Fire fighting equipment.
- Places of safety.
- Automatic sprinkler systems.
- Provision for persons with a disability.
- Means of warning.
- Maintenance of the scheme.

Note that the Fire Safety and Evacuation of Buildings Regulations 2006 also include measures building owners must take for prevention of fires, such as:

- Safe use of appliances in the building.
- Control of open flames.
- Packing and unpacking of goods packaged in flammable materials.
- Storage of certain materials inside and outside buildings.
- Fire fighting equipment.



### THE LAW:

- *Fire Service Act 1975; Fire Safety and Evacuation of Buildings Regulations 2006; Building Act 2004; Hazardous Substances and New Organisms Act 1996* - available from [www.legislation.govt.nz](http://www.legislation.govt.nz)



### EMPLOYER'S RESPONSIBILITIES:

- Ensure all workers are trained and have regular fire drills and their effectiveness evaluated.
- Ensure fire wardens and emergency crews are trained.
- Make sure that all fire fighting equipment is maintained to a high level so that it stays reliable.

# SECTION 13: EMERGENCY MANAGEMENT

- Test alarm systems regularly.
- Make sure the batteries and power supplies to alarm systems are checked and maintained regularly.
- Make sure false alarms are followed up and the cause rectified.



## EMPLOYEE'S RESPONSIBILITIES:

- Know the emergency procedures relevant to your workplace and responsibilities.
- Know the location of emergency exit routes and assembly areas.
- If you see a fire or emergency situation, follow the relevant emergency procedure or warden instructions.
- Note that it may not necessarily be a fire emergency; it could be a toxic gas release, flooding, earthquake or other emergency.
- For building evacuations, go calmly to the designated assembly area and remain there until the all-clear is given.
- Fire-fighting should only be attempted if it is safe to do so.



## FURTHER INFORMATION:

- *New Zealand Fire Service Online Services* – available from <https://onlineservices.fire.org.nz>
- *NZS 4503:2005—Hand operated firefighting equipment*
- *NZS 4541:2007—Automatic fire sprinkler systems*.

# SECTION 13: EMERGENCY MANAGEMENT

## 13.2 ESTABLISHMENT OF EMERGENCY RESPONSE TEAMS

On some sites, an emergency response team with more specialised skills and equipment may be required to supplement local emergency services, or where help may be delayed or where specialised emergency response equipment and/or skills are not otherwise available.

When determining whether to rely on external emergency services for equipment such as Self Contained Breathing Apparatus (SCBA), fire, chemical or gas suits to perform rescue operations, the response time of the local emergency services must be considered. For example, time for:

- Reaction to the emergency call.
- Travel.
- Conducting a facility assessment on arrival.
- Setting up a SCBA station and donning equipment.
- The entry to perform the search and rescue.

The establishment of a site emergency response team requires solid planning:

- There should be an evidence-based rationale for setting up and maintaining the team, based on identified needs, known gaps in current response capabilities and collaboration with all local emergency response agencies.
- The team needs to be set up in a manner that avoids unnecessary duplication or uncertainty about roles and responsibilities.
- Costs need to be identified early and provision made for on-going budgetary needs and long-term sustainability.
- Provision for training and equipment must be made and scheduled over appropriate time periods.
- Training needs to be based on scenarios that are realistic enough to verify that procedures, equipment and skills are sound and that important components have not been overlooked.
- Note that the team needs to be given a continuing high level of support to maintain the level of training and morale necessary for effective deployment, considering the aim is that these emergencies will not eventuate.
- There must be suitable governance with clearly designated accountabilities and command structure.
- All requirements for governance, daily management and response services must be documented in the team's Standard Operating Procedures (SOPs).
- The team must record and provide reports on capability, finance, personnel, training, incident response, equipment and Health and Safety on a regular basis.



### FURTHER INFORMATION:

- *Guidance for Establishing and Operating New Zealand Response Teams* - available from [www.civildefence.govt.nz](http://www.civildefence.govt.nz)

# SECTION 13: EMERGENCY MANAGEMENT

## 13.3 TOXIC FUMES AND GASES EMERGENCY ACTION PLANS

Toxic fumes and/or toxic gas releases have the potential to cause multiple injury and fatalities. In the meat industry, these are most likely to result from fire or release of toxic gases such as anhydrous ammonia (e.g. refrigerant) and chlorine (e.g. water treatment). Other potential toxic gas sources may also exist on your site and these need to be identified and managed in the Emergency Action Plans.

When developing emergency action plans for toxic fumes and gases, give consideration to the following issues:

- Obtain appropriate information and advice from relevant Safety Data Sheets, Suppliers and Emergency Service personnel.
- Ensure the plans meet the HSNO Emergency Management requirements which are primarily found in the Hazardous Substances (Emergency Management) Regulations<sup>1</sup>. These regulations list three levels of Emergency Management requirements and these depend on the quantities of hazardous substances that you hold. The levels include requirements for the provision of information (e.g. first aid instructions or spill response procedures), equipment (e.g. fire-extinguishers) and emergency response plans.
- Characteristics of the hazardous substance and exposure limits.
- Detection and alarm systems. Ensure detection systems are appropriate to the type and concentration of the gas hazard. Ensure gas alarms are differentiated from other emergency alarms, as appropriate. For example, it may be that people should be protected in place in the first instance rather than evacuate.
- Means for manual raising of the alarm and obtaining emergency service support.
- Means of assessment of the situation to provide initial information on the type and scale of the emergency (local area; site-wide; beyond site boundary).
- Means for identification of wind direction e.g. strategically placed wind-socks.
- Means for identification of products e.g. placards and class labels and location of Safety Data Sheets.
- Means for identification and securing the hazard zone.
- Establishment of command posts and lines of communications.
- Guidelines for whether to protect people in place or evacuate.
- Instructions for protection in place (e.g. remain indoors; turn off air conditioning/ventilation; close windows and doors; block air gaps into room; extinguish heat sources; advise others of your location).
- Instructions for evacuation (e.g. Do not run; move across wind – then upwind to safe Assembly Point).
- Respiratory and skin protection (e.g. Self-Contained Breathing Apparatus (SCBA) and chemical or gas suits) including guidelines for the level of personal protective equipment required.
- Equipment and procedures for rescue of a person or persons from the contaminated area.
- Emergency shutdown procedures (e.g. closing of valves to isolate the system; equipment shutdown; dealing with power outage; isolation of electrical equipment).

# SECTION 13: EMERGENCY MANAGEMENT

- Equipment and mitigation procedures (e.g. water fogging; neutralising agents; high expansion foam; product transfer equipment and containment).
- Communication equipment.
- First aid care and procedures for calling medical emergency support.
- Decontamination of equipment, clothing and personnel.
- Dealing with pools of liquefied gas and protection of run-off to the environment.
- Replenishment of used equipment.
- Debriefing and review of the effectiveness of the emergency action plan.
- Training and equipment effectiveness.



## FURTHER INFORMATION:

- *Controls under the HSNO Act – Safety Hints for Users* – available from [www.osh.govt.nz](http://www.osh.govt.nz).
- *HSNO Chemical Classification and Information Database* – available from [www.epa.govt.nz](http://www.epa.govt.nz).
- *Test Certifiers* – available from [www.epa.govt.nz](http://www.epa.govt.nz).
- *Workplace Exposure Standards (WES)* – available from [www.dol.govt.nz](http://www.dol.govt.nz).
- *An occupier's guide to emergency planning for ammonia-based refrigeration systems* – available from [www.worksafe.qld.gov.au](http://www.worksafe.qld.gov.au)
- *SAA/SNZ HB 76:2010 Dangerous Goods – Initial Emergency Response Guide* – available from [www.Standards.co.nz](http://www.Standards.co.nz)

# SECTION 14: SELF-CHECK

## 14 SELF-CHECK

The following checklist outlines a number of issues that can be relevant to a red meat processing plant. Of course, the checklist will need to be modified to suit your particular workplace. This checklist should be used as just one of the methods of identifying hazards in your workplace. It is not suggested that it take the place of systematic hazard identification processes or daily or weekly housekeeping inspections.

Managing health & safety	Yes	No	N/A
Does the workplace have a H&S policy?			
Is there a workplace system to identify hazards?			
Is that system reviewed regularly?			
Is there a system that informs all workers about new hazards?			
Does the workplace have a system that informs contractors about hazards and monitors their performance?			
Are the codes of practices, regulations and standards that are applicable to your workplace or type of work available?			
Are workers involved in the continual development of H&S systems?			
Is there a process for checking that workers are adequately trained before they are tasked with a job?			
Is there a record of training and qualifications for all workers?			
Have you got a register of all accidents in your work place?			
Have all accidents and incidents been investigated?			

Working environment	Yes	No	N/A
Access			
Have safe traffic routes been put in place - preferably with one-way systems and, if needed, pedestrian crossing points?			
Are vehicles and pedestrians kept safely apart by, for example, provision of safe pedestrian routes both outside and, where possible, inside buildings?			
Do vehicles and pedestrians have separate doors into buildings with suitable barriers where required?			
Are appropriate speed limits enforced and, where required, speed bumps installed?			
Are adequate signs in place, e.g. indicating direction, speed limit, no entry, etc., and mirrors fitted on blind corners?			
Are vehicles, including private cars, parked in designated areas?			
Is access to loading yards restricted to essential personnel and are they wearing high visibility clothing where necessary?			

# SECTION 14: SELF-CHECK

Are all roads, manoeuvring areas and yards adequately lit, with particular attention being given to areas near junctions, buildings, plant, pedestrian areas and places where there is regular movement of vehicles or mobile equipment?			
Are all emergency exits well marked, free of obstruction, unlocked and able to be opened from the inside?			
Are walkways, guard rails and, stairs in good condition?			
Are all road and pedestrian markings and signs well maintained?			
Are all employees and contractors made aware of the location of escape routes from all work areas?			
<i>Heat – Wet &amp; Cold</i>			
Are workers aware of the signs of dehydration and what to do if they think they are dehydrated?			
Are workers provided with the appropriate protection against heat and dehydration?			
Are workers provided with the appropriate clothing when they work in conditions of extreme heat or cold?			
Are ventilation and exhaust systems of adequate capacity, located correctly and working?			
Are workers who work in cold environments aware of the risks of hypothermia and the need to wear suitable clothing?			
<i>Noise</i>			
Have noise levels been checked and adequate control measures implemented?			
Is noise reduced at the source?			
Are hearing tests conducted regularly (at least annually)?			
Is appropriate hearing PPE provided and worn?			
Do floors, ramps and inclines have good surface conditions with no holes or irregularities?			
Is non-slip floor covering in good condition?			
Are tripping hazards promptly removed?			
Is there regular cleaning of floors to reduce slips, trips and falls, especially in high traffic areas?			
<i>PPE</i>			
Are all employees provided with appropriate personal protective equipment and trained in correct use and limitations?			
Are regular checks made to ensure employees wear their PPE when and as required?			



# SECTION 14: SELF-CHECK

<i>First Aid</i>			
Are there good first aid kits and facilities available?			
Are first aid kits checked at regular intervals and kept stocked?			
Are there sufficient first aid trained personnel in the work place?			
<i>Cleaning</i>			
Are all staff trained in the hazards associated with cleaning, appropriate precautions and how to clean and sanitise correctly and in a safe manner?			
Is safety information for the cleaning chemicals used readily available, particularly details about the potential hazards, the precautions to be taken, first aid action and the proper method of use?			
Are there regular checks made to ensure all staff wear the correct wash-down PPE and follow safe cleaning procedures?			
Are eye wash stations and drenching facilities appropriately located and regularly checked?			
<i>Personal hygiene and housekeeping</i>			
Are regular audits carried out to ensure hygiene requirements and standards are maintained?			

High risk activities	Yes	No	N/A
<i>Use of knives</i>			
Is there a policy in place that covers selection of the correct knife for the task, including considerations such as comfort; fit; handle diameter and material; blade shape and length?			
Is appropriate PPE provided for knife-hands such as protective gloves; arm guard; protective aprons; scabbards?			
Is training provided by a suitably qualified person on sharpening techniques; steeling techniques; general handling of knives; safe work techniques and muscle exercises to restore blood flow?			
<i>Physical design questions for reduction of MSD:</i>			
Can the layout be improved to keep the load close to the body?			
Is it possible to reduce handling distances and twisting actions?			
Is there sufficient space to perform the task?			
Can more space be provided?			
Are there mechanical aids that can be provided that will reduce hazards?			
Can vibration be reduced?			

# SECTION 14: SELF-CHECK

Can the need for squatting, kneeling or crouching be avoided?			
<i>Organisational design questions for reduction of MSD:</i>			
Are employees consulted and informed about hazards and how to avoid them?			
Is there a plan for new starters and those returning to work after illness or injury?			
Are there more staff who can be provided to cover sickness, deadlines or holidays?			
Could more information or incentives be provided to encourage safe work practices?			
Are people sufficiently fit and capable of carrying out the task?			
<i>Job design questions for reduction of MSD:</i>			
Can people be motivated to carry out tasks as safely as possible?			
Can additional appropriate personal protective equipment be provided and its use ensured?			
Can repetitive actions be avoided or the work varied to rest different muscle groups?			
Is it possible and practicable to provide more rest breaks?			
Can the duration of manual handling be reduced?			
Can maintenance systems be improved?			
<i>Training design questions for reduction of MSD:</i>			
Could more training be provided specific to the tasks being performed?			
Could more training about the hazards associated with the job be carried out?			
Could people be better trained to recognise hazardous manual handling in a task?			
Is it possible and practicable to provide regular training updates?			
<i>Zoonotic Diseases</i>			
Are staff trained on how they can become infected and the PPE and task precautions that must be taken to prevent against infection?			
Is there appropriate warning signage in the relevant parts of the plant?			
Are random audits conducted to ensure the correct PPE is being worn and safety precautions are being followed?			
Are staff provided with a wallet card to indicate to the doctor that they work in the meat processing industry?			
<i>Forklifts:</i>			
Are all workers using forklifts fully trained and competent to operate them safely?			

# SECTION 14: SELF-CHECK

Are there safe systems for working with forklifts in place and is their effectiveness regularly reviewed?			
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<i>Working at heights:</i>			
Have all work platforms including rise and fall platforms had risk assessments carried out and controls put in place?			
Are there procedures for workers and contractors who are required to work at heights?			
Are those who work at heights trained in the use of the relevant "working at height" equipment?			
<i>Confined Spaces:</i>			
Have all confined spaces and their associated foreseeable hazards in the workplace have been identified?			
Are those involved in confined space work trained for work in confined spaces?			
Is there a confined space entry permit system in place?			

<b>Yards and stock handling</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
Are stock yards well designed and appropriate to the stock processed?			
Where required, are there escape refuges where handlers can shelter?			
For large stock, are there raised catwalks alongside forcing pens, races and loading ramps?			
Do all gates swing freely and are latches effective using minimal effort?			
Do walkways and catwalks have adequate safety railing?			
Are all railings fully secure and able to withstand the impact of agitated stock?			
Are there any sharp objects that can injure stock or handlers?			
Is there sufficient drainage in all areas?			
Are floor surfaces and grating clean and in good condition to minimise slipping by livestock or handlers?			
Are floor surfaces of pens, races and yards self-draining and easily cleaned to prevent the build-up of body fluids and water?			
Is the ground surface free of tripping hazards?			
Are all switches, plugs and light fittings in good condition and where necessary waterproof?			

## SECTION 14: SELF-CHECK

Is there adequate lighting particularly where the receipt of livestock may occur in darkness or in areas such as sheds with low levels of natural light?			
Are building structures in sound condition?			
Where there is a possibility of escape of cattle, is there an escaped procedure in place and rehearsed for the site?			
Is the site securely fenced so that it will contain any cattle that escape from the pens or during unloading?			
Is there a safe system in place to humanely slaughter uncontrollable or lame animals?			
Are handlers trained and competent with the necessary stock handling skills?			
Are handlers trained not to use cattle prods indiscriminately and never to use them on the more sensitive parts of the animal?			
Do handlers have appropriate personal protective equipment (PPE)?			

Slaughter operations	Yes	No	N/A
Are stunners trained in the correct stunning procedure and how to confirm insensibility before releasing the stunned animal?			
Is electrical stunning equipment maintained in accordance with the manufacturer's specifications and kept clean to ensure the flow of current is optimal?			
Is there secure storage for portable stunning devices?			
Is there provision of barriers, bollards and escape routes in the work area to prevent improperly stunned animals endangering employees?			
Is there provision of back-up stunning equipment (e.g. a captive bolt gun) for use inside the slaughter area if the animal is inadequately stunned but not running around?			
Is there provision of an escape route and pen for an inadequately stunned animal that is running around?			
Is there provision of safe escape routes for workers in sticking pens?			
Is there appropriate PPE provided for those persons liable to reflex kick injury (e.g. when hanging the carcase onto the production chain)?			
Is a cradle, bench or table used to minimise bending when the stunned animal is presented for sticking?			
Is there is a safe system of work in place to protect workers from knife cuts and run through injuries when reflex kicking occurs when rodding and shackling animals?			

# SECTION 14: SELF-CHECK

For cattle, is rodding carried out on a flat surface to reduce lower back strain?			
Has manual handling been assessed in all slaughter tasks and wherever possible bending, twisting and working above shoulder height engineered out?			
Wherever possible, have heavy manual handling tasks (e.g. beef head removal, punching out of sheep) been eliminated through mechanisation or automation?			
Have hazards involved in evisceration been identified, assessed and controlled?			
Are chains and hooks used to hoist animals regularly checked and tested for twisted or bent links, stretched links, visible cracks or pitting, nicks or gauges or distorted or damaged attachments (shackles etc)?			
Is there a safe system of work for cleaning rails and overhead chains?			
Are workers rotated through a variety of tasks, where appropriate?			
Is there adequate space between workers to ensure that individuals do not come into contact with each other's knives, power saws, carcass splitters etc?			
Are workers trained in knife sharpening and safe knife handling?			
Where two knives are used interchangeably by the same operator, does the worker wear a scabbard that can accommodate both knives?			
Is access to sterilisers clear and does not require crossing an aisle?			
Are workers trained in the correct use of sterilisers?			
Are workers protected from burns while using hot water, including sterilisers and hot water hoses?			
Are there good housekeeping standards, which include regular cleaning of the floor due to spilled fluids?			
Do workers wear appropriate protective clothing (e.g. safety glasses or visors, waterproof gloves and boots) to protect from zoonotic diseases?			

# SECTION 14: SELF-CHECK

Boning and trimming operations	Yes	No	N/A
Are there good housekeeping standards, which include regular cleaning of the floor due?			
Is there a safe system of work for band saws and regular refresher training?			
Are tasks rotated to minimise repetitive movements?			
Have all tasks involving knives had risk assessments carried out controls put in place?			
Are workers trained and competent in their tasks and knife handling skills?			
Are workers provided with appropriate personal protective equipment (PPE)?			
Is work kept as close to the body as possible while boning on the rail and is working with the elbow elevated above shoulder height minimised as much as possible?			
Have the heights of product for boning on the rail been assessed, and where reasonably practicable product kept between eye level and shoulder level?			
Are work bench heights adequate to the task in hand?			
Have all trimming machines had risk assessments carried out and controls put in place?			
Are spaces in-between work benches kept free of obstacles and good housekeeping practiced?			
Are conveyor belts carrying product to packers set at an appropriate height and width to prevent lower back strain?			

Palletising, storage and loadout	Yes	No	N/A
Are there good housekeeping standards, which include regular cleaning of ice from blast-chiller and freezer floors?			
Are workers trained and competent in their tasks?			
Are those working in chilled environments warmly dressed for the conditions?			
Are workers provided with appropriate personal protective equipment (PPE)?			
Are mechanical aids such as scissor-lifts, turn-tables and vacuum-lifters provided to reduce manual handling?			
Are tasks rotated to minimise repetitive movements?			
Is pallet racking inspected regularly for bent or damaged racking?			
Are pallet frames/stillages inspected regularly for damage?			
Are pallet frames/stillages stacked vertically straight and no higher			

# SECTION 14: SELF-CHECK

than the permissible number?			
Are only battery operated forklifts used in cold stores or when loading containers?			

Mechanical equipment	Yes	No	N/A
Is there a system for regular checking of interlocks and emergency stops?			
Are there systems for ensuring guards are in place when machines are being operated?			
Are there lockout systems for use on any system that requires isolation before being worked on?			
Are people adequately trained in lockout procedures?			
Are there safety procedures in place where it is necessary to have equipment in motion for cleaning, maintenance or repair; are people trained in these procedures and are they always followed?			
Are all isolation points for maintenance or other tasks that may require the system to be made safe by locking out included in written operating procedures?			
Does all staff know where emergency stop buttons are positioned (for equipment they operate and for other equipment in their area)?			
Are all STOP buttons and levers kept free from obstruction?			
Are adequate signs displayed warning of machinery hazards and dangers of removing guards?			

Chemical handling	Yes	No	N/A
Is there a hazardous substances register in place?			
Have hazardous substance locations been set up and clearly marked?			
Have the relevant hazardous substances test certificates been obtained for locations, approved handlers, approved fillers and stationary container or storage systems?			
Are hazardous atmosphere zones in place and clearly marked?			
Are the appropriate personnel trained and certified as Approved Handlers?			
Are people filling gas bottles qualified Approved Fillers?			
Where required, are chemicals tracked from delivery to site, when used and when disposed of?			
Are there emergency management plans for hazardous substances in place for the three levels in accordance with the quantities of hazardous substances held?			
Are Safety Data Sheets specific to each chemical readily available			



## SECTION 14: SELF-CHECK

at point of use?			
Is there correct labelling, storage and signage for all chemicals?			
Is there correct segregation of incompatible chemicals?			
Is there correct bunding of chemicals where required?			
Are there spill kits of the appropriate type (with the correct PPE) provided where necessary?			
Is all staff trained in the correct handling and use of chemicals and also the emergency procedures?			

Emergency procedures	Yes	No	N/A
Are there emergency/evacuation plans and procedures in place for the workplace?			
Have workers been involved in the development of the emergency procedures?			
Are Emergency Action Flip-charts posted in strategic locations?			
Is everyone familiar with the emergency procedures?			
Are emergency exits clearly marked?			
Are fire extinguishers serviced, in good order and appropriately located?			
Is the workplace well equipped with fire detection systems?			
Are fire detection systems tested regularly?			
Are all extinguishers clearly marked and available?			
Are emergency drills regularly carried out and recorded?			
Are workers trained in using fire appliances?			