

CPCCLRG4001A

Licence to Perform Rigging Advanced Level

Learner Guide Instructions

Who is this document for?

The learner.

What is in this document?

- Course information that matches the PowerPoint presentation.
- Review questions.

What do you need to do before you use it for the first time?

1. Rebrand the document.
2. Review the document as part of your validation process.

See the 'Read Me First' document for a complete set of instructions on how to use these resources.



LEARNER GUIDE

CPCCLRG4001A Licence to Perform Rigging Advanced Level

Learner Name:	
Learner ID:	
Learner Contact Number:	
Learner Email Address:	
Date Training Commenced:	

This Book Contains:

- Course Information.
- Review Questions.

The review questions can be retained by the trainer/assessor as proof of formative assessment if required.

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1.1 Introduction

This training course is based on the National High Risk Licence Unit of Competence **CPCCLRG4001A Licence to Perform Rigging Advanced Level**.

You will learn about:

- ◆ Planning out your work.
- ◆ Selecting and inspecting equipment.
- ◆ Setting up for the rigging task.
- ◆ Erecting and dismantling structures and plant.



1.1.1 What Types of Work Can You Do with a Rigging Advanced Level Licence?



A person with an advanced rigging high risk work licence is allowed to complete the following range of tasks:

- ◆ All tasks that an intermediate rigger is qualified to do.
- ◆ Erection of flying foxes.
- ◆ Erection of cableways.
- ◆ Erection of gin poles.
- ◆ Erection of shear legs and tripods.
- ◆ Erection of guyed derricks and structures.
- ◆ Erection of suspended and fabricated hung scaffolds.

1.1.2 High Risk Work and WHS Legislation

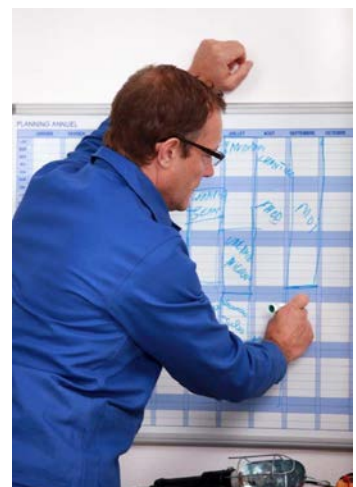
Once you pass your assessment you will have 60 days to apply for your licence.

You must renew your licence within 12 months of its expiry otherwise:

- ◆ Your licence can't be renewed.
- ◆ You need to repeat the course and re-apply for your licence.
- ◆ You need to enrol in the course again and be supervised by somebody who has a current licence for the same class.

You can still do high risk work without a licence as long as:

- ◆ You are enrolled in a high risk course for the class, and
- ◆ You are being supervised by somebody who has a licence for the same class.





Any licensed worker must take reasonable steps to make sure the way they work does not impact on the safety of themselves or any other worker. This is their legal duty of care. Failing to work safely can result in the health and safety regulator:

- ◆ Suspending or cancelling your licence.
- ◆ Refusing to renew your licence.
- ◆ Ordering that you are reassessed to ensure you are competent.

Your employer might ask you for evidence that you have a high risk licence before you start any high risk work. You can show them:

- ◆ Your licence.
- ◆ Proof from the training company that you have passed your assessment.
- ◆ Proof that you are currently completing a course for high risk work.



1.2 Plan Job

It is important that you are aware of the requirements relating to your work. Before you begin your tasks ensure that you access the relevant documentation and plan your work.

Requirements relating to your work may include:

- ◆ WHS requirements.
- ◆ Duty of care.
- ◆ Safe Work Method Statements.



1.2.1 Work Health and Safety Requirements

Work Health & Safety (WHS) is defined as laws and guidelines to help keep your workplace safe.

These can be broken down into four main types:

Law	Description
Acts	Laws to protect the health, safety and welfare of people at work.
Regulations	Gives more details or information on particular parts of the Act.
Codes of Practice	Are practical instructions on how to meet the terms of the Law.
Australian Standards	Give you the minimum levels of performance or quality for a hazard, work process or product.

1.2.2 Duty of Care



All personnel have a legal responsibility under duty of care to do everything reasonably practicable to protect others from harm by complying with safe work practices.

This includes activities that require licences, tickets or certificates of competency or any other relevant state and territory WHS requirements.

This includes:

- ◆ Employers and self-employed persons.
- ◆ Persons in control of the workplace.
- ◆ Supervisors.
- ◆ Designers.
- ◆ Manufacturers.
- ◆ Suppliers.
- ◆ Workers.
- ◆ Inspectors.



1.2.3 Safe Work Method Statements

A Safe Work Method Statement (SWMS) details how specific hazards and risks, related to the task being completed, will be managed and is developed by the employer.

SWMS fulfill a number of objectives:

- ◆ They outline a safe method of work for a specific job.
- ◆ They provide an induction document that workers must read and understand before starting the job.
- ◆ They assist in meeting legal responsibilities for the risk management process, hazard identification, risk assessment and risk control.
- ◆ They assist in effectively coordinating the work, the materials required, the time required and the people involved to achieve a safe and efficient outcome.
- ◆ They are a quality assurance tool.

Safe Work Method Statements may also be referred to as Safe Work Procedures (SWP) or Job Safety Analysis (JSA).

An example of a Safe Work Method Statement can be found in Appendix A.



1.2.4 Assess the Task

Before you start any work or planning, look to see what the task actually is.

- ◆ Does the task require lifting or moving of materials?
- ◆ Will you be assembling or disassembling plant or equipment?
- ◆ What equipment will you need and is it available?
- ◆ What is the weather doing and is it safe to carry out the work?

All of these factors will introduce different hazards and requirements to the work.



1.2.5 Gather Site Information

Planning the job before you start is an important step in any high risk work.

If there are any task plans or schedules available, you should also make sure you are familiar with them. Structural plans will also need to be referred to throughout the job planning.



When planning out the task, some things you may consider are:

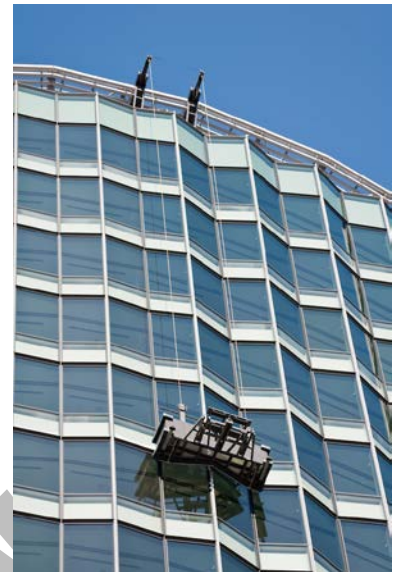
- ◆ Workplace-specific issues.
- ◆ Safe and adequate communications.
- ◆ Access and egress to/from work area.
- ◆ Location of the task.
- ◆ Specific information required to complete the task, such as:
 - ◇ Job or task requirements.
 - ◇ Priorities and job sequencing.
 - ◇ Site rules and regulations.
 - ◇ Safe Work Method Statements (SWMS), Job Safety Analysis (JSA) and other hazard identification procedures such as 'Take-5'.
- ◆ Permits and procedures required for the task.
- ◆ Equipment required for the task and it's availability.
- ◆ Capability or capacity of cranes and associated rigging equipment.

1.2.6 Forces and Loads

A 'load' is any type of force exerted on an object. It is important to understand the relevant forces and loads that are associated with the rigging work you will be doing.

Forces and loads apply to structures, equipment and plant such as:

- ◆ Gin poles.
- ◆ Flying foxes.
- ◆ Shear legs.
- ◆ Cable ways.
- ◆ Guyed derricks.
- ◆ Suspended scaffolds.
- ◆ Fabricated hung scaffolds.
- ◆ Other structures.



Forces and loads can be divided up into the following types:

Load Type	Explanation
Dead Load	The weight of a crane, hoist or scaffold before it is carrying a load.
Static Load	Any load that does not change in size, weight or position over time (does not move or change).
Dynamic Load	These include loads that are moving or changing. This includes: <ul style="list-style-type: none">◆ Live load: The load being lifted by a crane or hoist.◆ Wind load: The total force exerted by the wind on a structure or part of a structure. See AS 2550 for more information on wind loads.

Please complete section 1 review questions 1 to 5.

1.3 Identify and Control Hazards



HAZARDS CREATE RISK. CHECK FOR HAZARDS.

A **RISK** is the chance of a hazard hurting you or somebody else or causing some damage.

A **HAZARD** is the thing or situation that causes injury, harm or damage.

If you can remove or at least control a **HAZARD** you can reduce the **RISK** involved.

1.3.1 Consultation and Communicating with Others

Communication and consulting with others is an important part of doing your job safely.

Make sure you talk to the right people. They will be able to give you the best information to safely carry out your work. This can include:

- ◆ Safety officers who can tell you about:
 - ◇ Workplace-specific hazards.
 - ◇ Workplace-specific hazard controls.
 - ◇ Workplace policies.
- ◆ Engineers who know about:
 - ◇ Plans and drawings.
 - ◇ Load bearings (of ground and suspended surfaces).
 - ◇ Purpose of installations.
 - ◇ Suitability of the roof.
 - ◇ The correct anchorage to be used.
- ◆ Supervisors who can provide you with guidance for:
 - ◇ Job specifics.
 - ◇ Local, job and workplace knowledge.
 - ◇ Information relating to contractors and work area arrangements.
- ◆ Colleagues.
- ◆ Managers who are authorised to take responsibility for the workplace or operations.



It is important to communicate with workplace personnel and safety officers before starting on a worksite to ensure that any workplace policies and/or site-specific procedures are adhered to.

1.3.2 Risk/Hazard Identification

When identifying hazards always remember to check:



- ◆ **Above head height** – Remember the load may be moving above your head.
- ◆ **At eye level** – Look around to see if there is anything in the way of where you want to move the load.
- ◆ **On the ground (and below)** – Have a look at the ground conditions and think about where the load is being moved to. Will it support the weight of the load?

Common workplace hazards include:

- ◆ Ground conditions:
 - ◇ Underground services.
 - ◇ Non-weight bearing surfaces.
 - ◇ Recent excavations.
 - ◇ Soil conditions (e.g. recently filled trenches)
- ◆ Overhead hazards:
 - ◇ Power lines.
 - ◇ Overhead service lines.
 - ◇ Bridges.
- ◆ Poor lighting.
- ◆ Surrounding structures:
 - ◇ Buildings.
 - ◇ Obstructions.
 - ◇ Facilities.
 - ◇ Trees.
- ◆ Traffic:
 - ◇ Pedestrians.
 - ◇ Personnel.
 - ◇ Vehicles.
 - ◇ Mobile plant.
- ◆ Weather:
 - ◇ Wind.
 - ◇ Lightning.
 - ◇ Rain.
- ◆ Other worksite-specific hazards:
 - ◇ Dangerous materials.



If you were required to set up a flying fox to shift loads you would need to consider any hazards in the proposed path of movement of the load. Hazards that are specific to this situation could include:



- ◆ **Obstructions** – Anything that the load could come into contact with during its movement.
- ◆ **Overhead power lines** – These are a very serious hazard and may require specific control measures or re-planning of the task.
- ◆ **Pedestrians** – Any workers, personnel or site visitors must be kept away from, and made aware of the path of movement of loads.
- ◆ **Surrounding structures** – Make sure there is nothing too close to the path of movement. Consider the effect of the wind on the load during movement as well.

1.3.2.1 Working Near Power Lines



Working near power lines can be dangerous if you are not careful.

It is very important that you know the safe operating distances for different types of power lines and the steps you must take if your job needs you to work closer than the safe distances.

Generally, if you need to work closer than the safe work distance you must:

- ◆ Contact the local electrical authority for permission to work closer (this is called an exemption).
- ◆ Have the power lines shut off. If this is not possible then have the power lines insulated.
- ◆ Use a spotter (depending on local laws and rules).

Distances are different depending on the state or territory you are working in and the voltage of the power lines. You should check with the local electrical authority for information and advice to find out the voltage of power lines in your work area.

Queensland

The Queensland Electrical Safety Regulation breaks down the distances in detail. Exclusion zones are broken down not only by size of power line but also by the competency level of the operator. This means that the requirements should be clarified with the electrical authority before work commences even if the distance appears to be outside the zones.

The following minimum distances are provided as guidance:

Power Line Type	Distance
Up to 132kV	3.0m
132kV up to 330kV	6.0m
330kV and above	8.0m

New South Wales

In New South Wales, for anyone who is not accredited, equipment operation may not be any closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 132kV	3.0m
Above 132kV up to and including 330kV	6.0m
Above 330kV	8.0m

To work closer than these distances requires authority from the relevant electrical authority and adherence to cl.64(2)(e) of the regulations.

Australian Capital Territory

In the ACT mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Power Line Type	Distance
Less than 33kv	4.0m
33kV or more (transmission lines)	5.0m

Victoria

In Victoria the Framework for Undertaking Work Near Overhead and Underground Assets states that equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Distribution lines up to and including 66kV (power poles)	6.4m (or 3.0m with a qualified spotter)
Transmission lines greater than 66kV (towers)	10m (or 8m with a qualified spotter)

Tasmania

In Tasmania equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 133kV (poles)	6.4m (or 3m with a safety observer)
Greater than 133kV (towers)	10m (or 8m with a safety observer)

South Australia

In South Australia mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Power Line Type	Distance
Up to 132kv (including 132kv poles)	6.4m (or 3.0m with a spotter)
132kv or more (including 132kv towers)	10.0m (or 8.0m with a spotter)

Western Australia

In Western Australia this falls under Regulation 3.64 from the OSH Regulations and states the following as the minimum distances:

Power Line Type	Distance
Up to 1kV (insulated)	0.5m
Up to 1kV (uninsulated)	1.0m
Above 1kV and up to 33kV	3.0m
Above 33kV	6.0m

Northern Territory

In the Northern Territory equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 132kV (distribution lines)	6.4m (or 3m with a spotter)
Greater than 132kV (transmission lines)	10m (or 8m with a spotter)

Tiger Tails

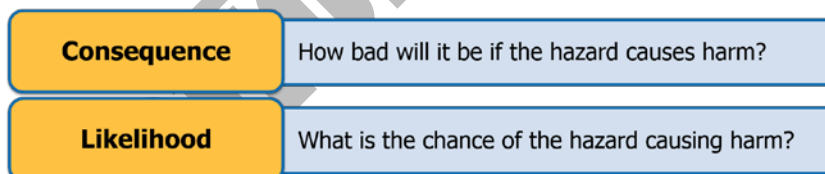
Tiger tails are used to clearly show the location of overhead power lines. Tiger tails **DO NOT** insulate the power lines so exclusion zones and safe operating distances must still be used, even when tiger tails are in use.



1.3.3 Risk Assessment

Once you have identified the hazards on site or related to the work you will be doing you need to assess their risk level.

Risk levels are worked out by looking at 2 factors:



You can use a table like the one shown here to work out the risk level:

Likelihood	Consequence				
	1. Insignificant	2. Minor First Aid Required	3. Moderate Medical Attention and Time Off Work	4. Major Long Term Illness or Serious Injury	5. Catastrophic Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

For example, a hazard that has a **Major** consequence and is **Almost Certain** to occur has a risk level of **Extreme**.




Likelihood	Consequence				
	1. Insignificant	2. Minor First Aid Required	3. Moderate Medical Attention and Time Off Work	4. Major Long Term Illness or Serious Injury	5. Catastrophic Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

The risk level will help you to work out what kind of action needs to be taken, and how soon you need to act.

The table below is an example of a site risk policy:

Risk Level	Action
Extreme	This is an unacceptable risk level The task, process or activity must not proceed .
High	This is an unacceptable risk level The proposed activity can only proceed, provided that: <ol style="list-style-type: none"> 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk controls must include those identified in legislation, Australian Standards, Codes of Practice etc. 3. The risk assessment has been reviewed and approved by the Supervisor. 4. A Safe Working Procedure or Work Method Statement has been prepared. The supervisor must review and document the effectiveness of the implemented risk controls.
Moderate	This is an unacceptable risk level The proposed activity can only proceed, provided that: <ol style="list-style-type: none"> 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk assessment has been reviewed and approved by the Supervisor. 3. A Safe Working Procedure or Work Method Statement has been prepared.
Low	The proposed task or process needs to be managed by documented routine procedures, which must include application of the hierarchy of controls.

The action you take will depend on:

-  The organisation's policies.
-  The worksite's procedures.
-  Relevant laws and regulations.

1.3.4 Risk Treatment

The Hierarchy of Hazard Control is the name given to a range of control methods used to eliminate or control hazards and risks in the workplace. The Hierarchy has 6 levels:

It is important to understand what each level in the Hierarchy stands for and how they can be implemented into your work.



Hierarchy Level	Explanation	Example
1. Elimination	Completely remove the hazard. This is the best kind of hazard control.	Setting up equipment a safe distance from excavations, trenches, buildings and structures.
2. Substitution	Swap a dangerous work method or situation for one that is less dangerous.	Applying safety distances and spotters when working near power lines.
3. Isolation	Isolate, segregate or restrict access to the hazard.	Pedestrian, personnel and vehicle exclusion zones including barriers.
4. Engineering Controls	Use equipment to lower the risk level.	Installing temporary lighting in the work area to increase visibility.
5. Administrative Controls	Site rules and policies attempt to control a hazard. Includes Safe Work Practices	Use of a lift plan or safe work method statement to plan for and conduct tasks.
6. Personal Protective Equipment	The least effective control. PPE should be used in addition to other hazard control techniques. Use PPE while you carry out your work. This should be selected at the planning stage of your work, and checked before starting the job.	Hard hats, steel capped boots and hi-vis clothing are used during all tasks.









You may need to use a number of control strategies in conjunction to reduce the risk level to an acceptable level.

1.3.4.1 Personal Protective Equipment Used during Rigging Work

Riggers often have to wear helmets, gloves, eye protection, face masks and respirators, and steel-capped boots to protect themselves from injury.

It is the responsibility of your employer to provide the necessary protective equipment. It is the responsibility of riggers to wear and use the equipment properly.



Sign	Explanation	Sign	Explanation
	<p>Safety helmets with chin straps must be worn wherever there is a risk of objects falling from above and on any worksite where the hard hat sign is displayed.</p>		<p>Hearing protection must be worn where there are high volumes of noise such as trucks and equipment.</p>
	<p>Riggers should wear close fitting pigskin gloves to protect hands from:</p> <ul style="list-style-type: none"> ◆ Heat and abrasion. ◆ Molten metal. ◆ Sharp edges. 		<p>Riggers should be careful to choose footwear that is comfortable, gives maximum grip and provides protection from pinching, jamming and crushing.</p>
	<p>Wear eye protection if you are likely to be exposed to:</p> <ul style="list-style-type: none"> ◆ Physical damage. ◆ Chemical damage. ◆ Radiation damage. 		<p>To prevent permanent damage caused by ultra violet rays always wear a hat, long sleeves, long trousers and use sun block cream when working outside.</p>
	<p>Riggers should wear respiratory protective devices if exposed to:</p> <ul style="list-style-type: none"> ◆ Toxic gases and vapours. ◆ Irritating dusts, such as silica. 		<p>It is important to wear the appropriate high visibility clothing to make sure other operators know where you are.</p>

Please complete section 1 review questions 6 and 7.

1.4 Identify Equipment Requirements

Once you have worked out exactly what the job requirements are you can begin to decide on the equipment you will use to do the work.

Riggers may use, or work with, any of the following equipment to carry out their job:

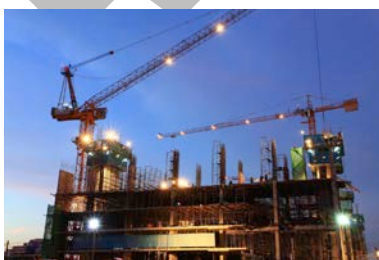
Plant & Associated Equipment:

- ◆ Scaffolds (including suspended and fabricated hung scaffolds at an advanced rigging level).
- ◆ Elevating work platforms (EWPs).
- ◆ Stages.
- ◆ Personnel boxes/workboxes.
- ◆ Cantilevered crane loading platforms.
- ◆ Hoists and mast climbing equipment.
- ◆ Safety screens and shutters.
- ◆ Powered winches.
- ◆ Gin poles.
- ◆ Flying foxes.
- ◆ Cable ways.
- ◆ Shear legs.
- ◆ Tripods.
- ◆ Guyed derricks.



Cranes:

- ◆ Non-slewing cranes.
- ◆ Mobile slewing cranes.
- ◆ Vehicle loading cranes.
- ◆ Tower cranes.
- ◆ Self-erecting tower cranes.
- ◆ Portal boom cranes.
- ◆ Derrick cranes.
- ◆ Bridge and gantry cranes.



Tools & Lifting Equipment:

- ◆ Fibre ropes.
- ◆ Turnbuckles.
- ◆ Jacks.
- ◆ Flexible steel wire rope (FSWR).
- ◆ Wire and synthetic slings.
- ◆ Lever-action winches.
- ◆ Chains.
- ◆ Sheaves.
- ◆ Skates.
- ◆ Rigging screws.
- ◆ Spreader bars.
- ◆ Girder trolleys.
- ◆ Anchors.
- ◆ Lifting beams.
- ◆ Wedges.
- ◆ Levels.
- ◆ Shackles.
- ◆ Rollers.
- ◆ Eyebolts.
- ◆ Chain blocks.
- ◆ Bolts.
- ◆ Beam clamps.
- ◆ Tirfors.
- ◆ Braces.
- ◆ Load equalising gear.
- ◆ Plate clamps.
- ◆ Spanners.
- ◆ Rope grips.
- ◆ Levers.
- ◆ Podgers.
- ◆ Chain motors.
- ◆ Lifting clutches (swift lifts).



1.4.1 Safety Equipment

Depending on the requirements of the job, you may need to use safety equipment to reduce the risk to an acceptable level.

Safety equipment includes:

- Safety harnesses.
- Lanyards.
- Energy absorbers.
- Inertia reels.
- Static safety lines.
- Safety nets.

All safety equipment should be selected at the planning stage.

1.4.1.1 Safety Harnesses



In most cases when working at heights a full body harness should be worn.

Harnesses must be correctly fitted in accordance with the manufacturer's instructions to ensure effectiveness.

Workers should connect the fall-arrest line to the attachment point on their harness (dorsal attachment point in the middle of the back, or the chest connection) that will provide the best protection for the situation in which it is being used.

Safety harnesses must meet the requirements of AS/NZS 1891 Industrial fall-arrest systems and devices.

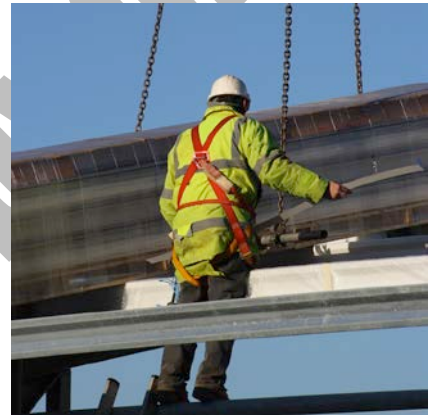
1.4.1.2 Lanyards and Energy Absorbers

There should be a minimum of slack in the fall-arrest lanyard between you and the anchor point, which should be as high as the equipment permits.

The length of the lanyard should restrict the fall distance to a maximum of 2 metres before the fall-arrest system takes effect.

Avoid work above the anchor point, as this will increase the free fall distance in the event of a fall, resulting in higher forces on the body and greater likelihood of the lanyard snagging on obstructions.

To reduce injuries caused by a fall, energy absorbers should be used as part of the lanyard.



1.4.1.3 Inertia Reels



Inertia reels provide a worker with a relatively free range of movement or extra reach compared to a lanyard, with the added safety feature of being able to lock in the event of a fall, arresting the descent of the worker.

Inertia reels should not be used in the following situations:

- ◆ While working on a sloped surface (e.g. a steeply pitched roof) or any other surface where a fall may not be a quick vertical one.
- ◆ Locked as a constant support for a worker during normal work.
- ◆ In conjunction with a lanyard.

Inertia reels must comply with AS 1891.3 Fall arrest devices.