EVERY WORKER'S GUIDE TO

# HEIGHT SAFETY ESSENTIALS

DEVELOPED IN THE INTEREST OF WORKER SAFETY BY
GLOBAL LEADER IN FALL PROTECTION

capital SAFETY

# CONTENTS

This booklet is written as an introductory guide to height safety. Use it when evaluating your fall protection requirements, however, always consult a fall protection specialist if you're unsure of any aspect of fall protection or fall protection equipment.

# THE A,B,C,D OF FALL PROTECTION

The A,B,C,D of Fall Protection covers the fundamental requirements of every personal fall protection system.

## Anchorage

Anchorage provides a secure point of attachment (to an existing structure) for the fall arrest system. Anchorage devices can be permanent or temporary and vary to suit the type of structure available.

## Body support

Full body harnesses connect the worker to the fall arrest system. They are specially designed to protect the worker against serious injury in the event of a fall whilst also remaining comfortable to wear.

## Connectors

Connectors are devices that connect the full body harness to the anchorage system. They can be single products or multiple devices working together.

## Descent/rescue

Descent & Rescue systems enable the retrieval of an injured or incapacitated worker. In the event of a rescue, this equipment facilitates rapid recovery of the worker without endangering other workers in the process.

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# 12 FUNDAMENTAL FACTS OF FALL PROTECTION

## 1 Gravity never takes a rest

A person can always:

- Fall through a gap or weak surface
- Fall over an edge, or
- Trip or slip down a slope

Gravity is there waiting for your "bad day" when you have a momentary "slip up".

## 2 It is not the fall that causes the death or injury

Injury is caused by the shock of suddenly stopping, or hitting objects or the ground during the fall.

If there is any risk of a fall, consideration should be given to clearance distances and the pendulum effect.

Australian and New Zealand Standards requires that when using a fall arrest system, the maximum fall arrest force that a person can be exposed to is 6kN (611kg).

## 3 Falls from height represent 16% of all fatalities in the workplace in Australia*

- 39% of these fatalities were in the construction industry
- Most fatal falls are from roofs, scaffolding and ladders

*Source: Safe work Australia - Notified Fatalities Statistical Report 2009-2010.

## 4 Writing a fall protection plan helps prevent fall-related injuries

An effective fall protection plan uses:

- Levels of control. This is called a hierarchy of control. It uses administrative (such as a "lock out" system) and engineering control measures. These measures are elimination, substitution, isolation and fall protection
- Hazard & Risk assessment. This is the investigation of the likelihood of an accident or injury occurring, versus the severity of the injury

Hazards need to be identified, assessed, evaluated, then eliminated or controlled. AS/NZS ISO 31000:2009 gives guidance on risk management. Risk assessment and control measures help decide:

- What hazards are involved with the task and who could be affected by the dangers
- What instructions (including rescue) need to be written
- What equipment needs to be used
- What training is necessary

The best type and combination of equipment that should be used can be very specific to the actual height safety situation. AS/NZS 1891.4: 2009 gives guidance on equipment selection for the right situation.

Fall protection plans are similar to work method statements. Work method statements should be clear, to the point and if helpful, include sketches.

**If in doubt ask!** A competent person must perform the risk assessment. You can become competent through a combination of reading, comprehending, gaining practical experience, observing and completing training. It's the law! See Fundamental Fact #12, on page 9.

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## 5 There is no such thing as a safe distance to fall

The further you fall, the faster your speed of descent and the higher the total forces that the safety system needs to absorb to prevent injuries. The further you fall, the more likely you are to hit the ground, or swing into a wall or hit the nearest obstacle below you.

You should use work-in-restraint techniques to remove the possibility of a fall, or to maintain a fall distance of less than 2 metres. You must never put yourself in a situation where you can free fall more than two metres.

Refer to the Shock Absorbing Lanyard and Self Retracting Lifeline Fall Clearance Calculations on pages 10 and 11.

## 6 You must be connected to a structure using your safety system at all times

Using double-action or triple-action connectors on your shock absorbing system helps prevent metal components from disconnecting.

Unintentional disconnection of hardware by itself is called forced rollout.

Do not disconnect from one safety system, unless you have connected to another or are in a secure location.

## 7 The anchor/connection point you connect to must be very strong

The anchorage you use must be capable of holding the weight of a family sized car. This is equal to at least 15kN (1,500kg), as required by AS/NZS 1891.4 for a single person anchorage, or 21kN for a 2 person anchorage point. The structure should be free from burrs and sharp edges that might damage your equipment when in use.

## 8 A belt should never be used for fall arrest or limited free fall

Belts are no longer recognised by Australian and New Zealand Standards as a legitimate fall protection device. A harness is better for any work situation where you can slip, trip, slide or fall. A full body harness distributes the fall arrest forces better around the body. A belt should never be used in a fall arrest situation.

## 9 The harness must be fitted and adjusted correctly

All safety equipment shall be used according to the instructions supplied by the manufacturer. Correct fitting and adjustment better distributes forces of a fall impact and lowers the risk of injury.

## 10 It is too late to plan a rescue after somebody has fallen and they are suspended in mid-air

The ability for a worker to hang in a fall arrest harness after a fall is limited if they are unconscious. Most standards worldwide recognise the need for a timely rescue within 15-30 minutes.

An effective rescue plan will ensure that there are procedures put into place to adopt in an emergency. Effective rescue can be performed by fellow workers if they are well trained. Safety first - do not put yourself at risk to save another person.

## 11 The inspection and maintenance instructions of height safety systems and equipment must be understood and followed

Inspection frequency requirements must be followed according to AS/NZS 1891.4 and the manufacturer's user instructions. All inspection and maintenance data must be recorded in an inspection and maintenance log kept by the company.

All fall protection equipment must be inspected prior to and after each use by the user and periodically by a height safety equipment inspector as defined by Australian Standard AS/NZS 1891.4*. Australian and New Zealand Standards provide guidelines for the frequency of inspection, as does local OH&S legislation.

Australian and New Zealand Standards also require that all fall arrest devices such as SRLs be subjected to a full inspection and service by factory Accredited Service Centres, or every 12 months in the absence of any instructions/recommendations from the manufacturer.

They must also be re-certified by the manufacturer or their accredited service agent after they have been used to arrest a fall.

* **Note:** AS/NZS 1891.4 defines a competent person as: A person who has, through a combination of training, qualification and experience, acquired knowledge and skills enabling that person to correctly perform a specified task. Levels of competency are now defined in the informative appendix in AS/NZS 1891.4, refer to the definitions in the Glossary, on page 28.

## 12 You must be competently trained

If you are required to perform any tasks at height, you must be competently trained as per AS/NZS 1891.4.

A successful fall protection training program should cover the following:

- Requirements of standards and legislation
- Identification of relative hazards
- Application of the hierarchy of control and other measures to minimise and control risk
- Rescue plans and procedures
- The use, fit, inspection and maintenance of fall protection equipment

When selecting your training provider, ensure they are a Registered Training Organisation (RTO) certified and accredited under the VET Quality Framework and /or the AQTF. This is an indicator that the organisation is a credible training provider that meets nationally recognised standards. Also, choose a course that carries a competency relevant to the work tasks being completed.

All employers and employees have a duty of care to maintain a safe working environment.

Workers must be competently trained to identify the hazards and when required, use fall protection equipment and systems safely, to reduce or eliminate the risk of injury.

**This guide is not a substitute for competent training.** Capital Safety offers a range of internationally accepted courses nationally recognised by ASQA, refer to page 18 for more information.

# FALL CLEARANCE & SWING FALL HAZARDS

## SHOCK ABSORBING LANYARD FALL CLEARANCE CALCULATION

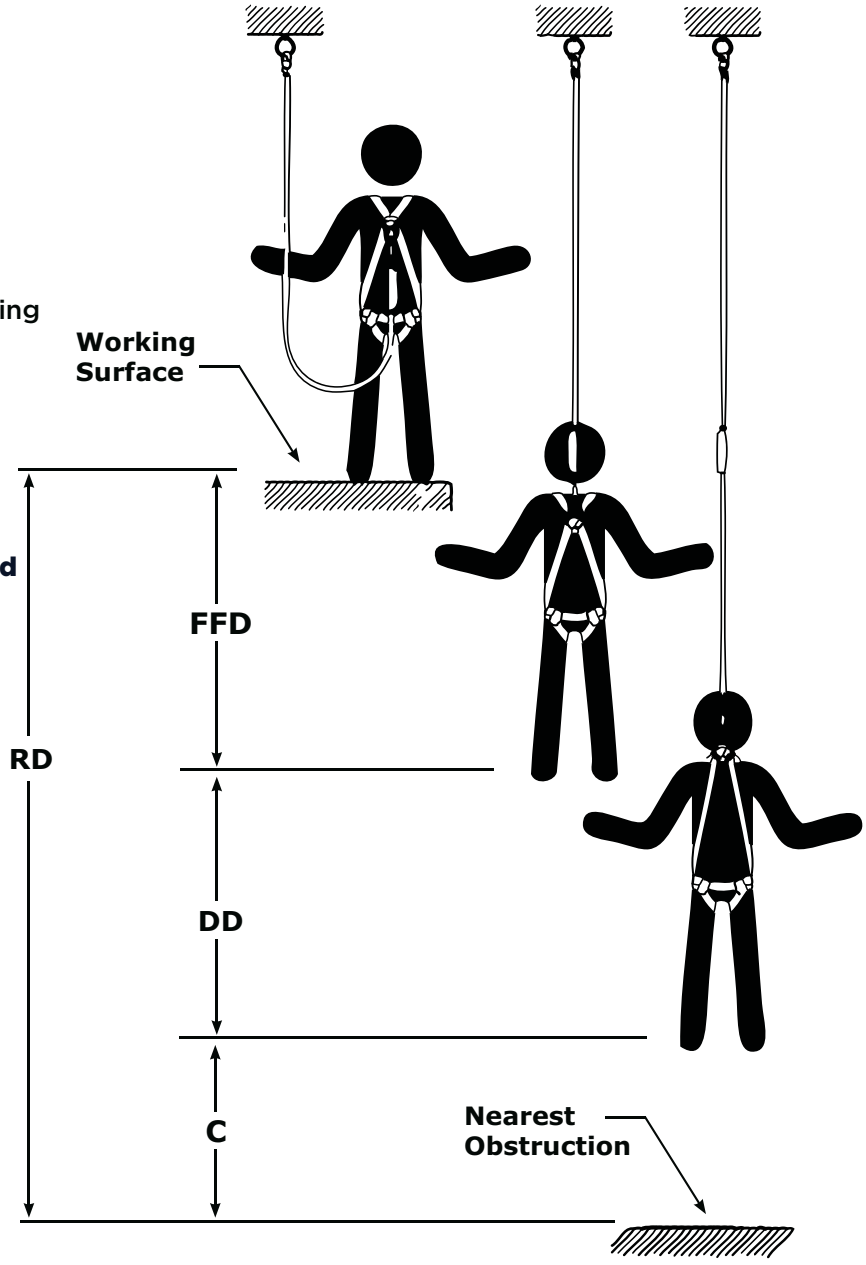
**RD =** Required Distance Below Working Surface to Nearest Obstruction

**FFD =** Free Fall Distance (2.0m maximum allowed)

**DD =** Energy Absorber Deceleration Distance
**When using a DBI-SALA lanyard**
(1.75m for users up to 136kg)
(1.95m for users from 136kg to 160kg)
**+** D-ring Slide and Harness Stretch (0.25m)

**C =** Clearance to Obstruction During Fall Arrest (1.0m minimum safety factor required)

$$\frac{FFD + DD + C}{RD}$$




**As per AS/NZS 1891.4, DD can be estimated based upon FFD in order to reduce RD.**

| FFD | Extension |
|---|---|
| 600 mm | 300 mm |
| 1000 mm | 500 mm |
| 1500 mm | 600 mm |
| 2000 mm | 900 mm |

Fall clearance is the vertical distance needed to safely arrest a fall so that the worker does not hit the ground. To determine the required **Fall Clearance** add the appropriate factors together, this will give you the safe **Required Distance** (RD) below the working surface for work which is to be carried out where there is any risk of falling.

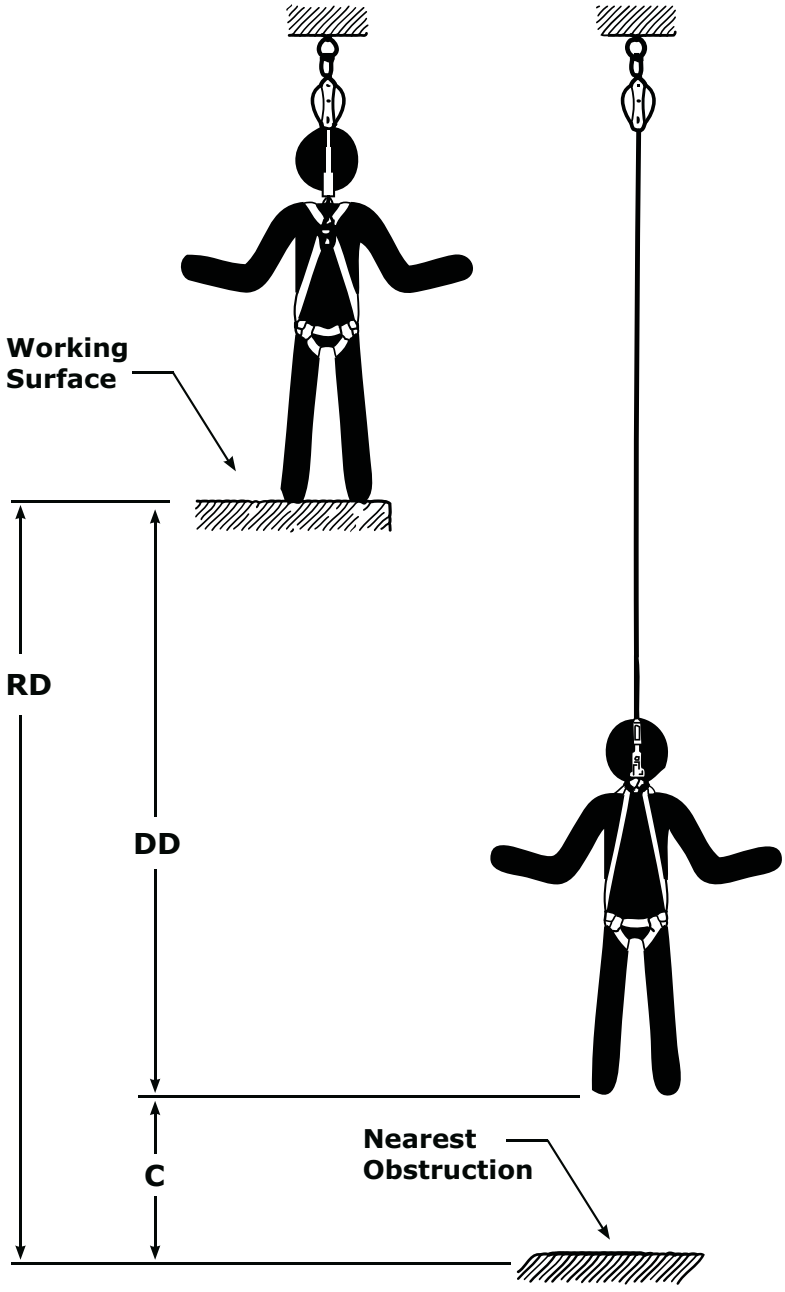
## SELF RETRACTING LIFELINE FALL CLEARANCE CALCULATION

**RD =** Required Distance Below Working Surface to Nearest Obstruction

**DD =** Free Fall, Lock Off and Deceleration (1.4m Max.) + D-ring Slide and Harness Stretch (0.25m)

**C =** Clearance to Obstruction During Fall Arrest (1.0m minimum safety factor required)

$$\frac{DD + C}{RD}$$




**As per AS/NZS 1891.4, DD can be estimated at 700mm. 250mm must be added for D-ring slide.**

## SWING FALL HAZARDS

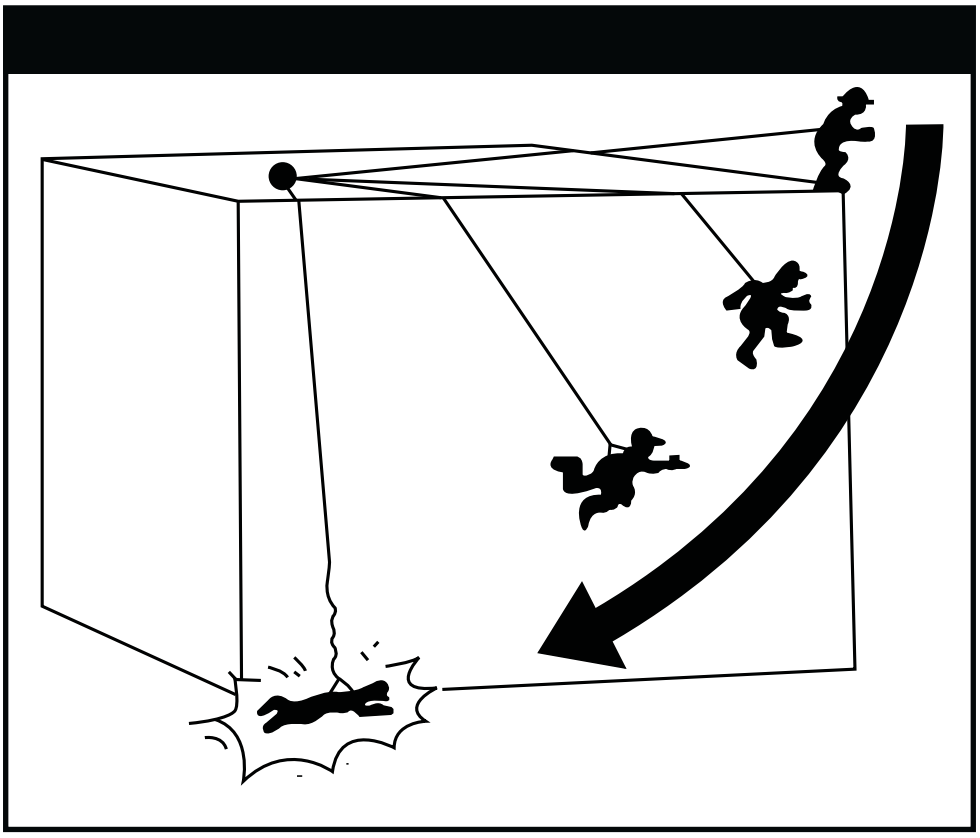
Swing Fall can occur when using a shock absorbing lanyard or self retracing lifeline (SRL) whilst working at height.

A swing fall is a pendulum-like motion that can occur when the operator falls and their connector device is in a position located horizontally away from the anchorage point. This is most likely to occur when connected to an anchorage point that is not positioned directly overhead.

Precautions to avoid this hazard include removing working slack from the rope working line, using restraint techniques and ensuring the person does not approach a leading edge such that they may be subjected to an unplanned fall.

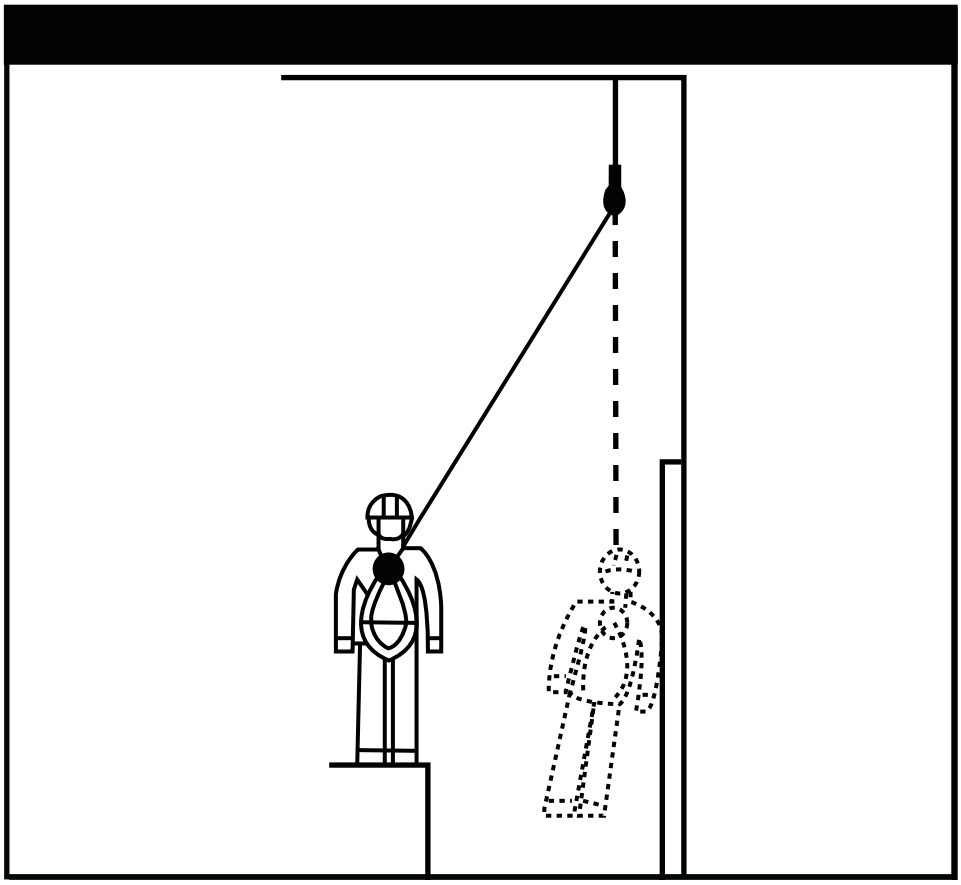
Operators should ensure they do not subject themselves to swing fall by taking measures to avoid the risk. Refer to Figure One and Two for examples of swing fall hazards.

FIGURE ONE: swing fall as a result of incorrect anchorage line positioning.



**Note:** It is important to position your anchor point directly overhead to minimise Swing Fall Hazards. Particular attention is required when using self retracting lifelines due to the extra mobility they provide.

FIGURE TWO: Self Retracting Lifeline swing fall.



**Coming into contact with an object while swinging during a fall can lead to serious injuries.**

# INSPECTION & MAINTENANCE

As per AS/NZS 1891.4:2009 and manufacturer usage instructions, fall protection equipment users must carry out a full inspection on their gear before and after each use to ensure that the items are in good working order.

| Items | Reference |
|---|---|
| Personal equipment including harnesses, lanyards, connectors, fall-arrest devices including common use devices | Clause 9.2 |
| Harnesses, lanyards, associated personnel equipment | Clause 9.3.2 |
| Fall-arrest devices (external inspection only) | Clause 9.3.4(a) |
| Ropes and slings | Clause 9.7 |
| Anchorages—drilled-in type or attached to timber frames | Clause 9.3.3 |
| Anchorages—other types | Clause 9.3.3 |
| Fall-arrest devices—full service | Clause 9.3.4(b) |
| Horizontal and vertical lifelines: Steel rope or rail (Ladder Safety Systems) | Clause 9.3.5 |
| Horizontal or vertical lifelines: Fibre rope, Webbing | Clauses 9.3.5 & 9.7 |
| All items of personal and common use equipment | Clause 9.4 |
| All items which have been stressed as a result of a fall | Clause 9.5 |

*NOTES:*
*1. Manufacturer's or supplier's recommendations where provided, take precedence over the frequencies listed. Where used in harsh conditions, more frequent inspection may be required.*
*2. If the user or operator of the equipment is not competent to carry out this inspection it is to be undertaken by another person who is competent, see Clause 9.2.*

**Always remember: If in doubt, tag it out!**

| Inspection Frequency (Note 1) |
|---|
| Inspection by a Height Safety Operator and/or Height Safety Equipment Inspector (Note 2) before and after each use. |
| 6 monthly inspection by a Height Safety Equipment Inspector (Note 3). |
| 6 monthly inspection by a Height Safety Equipment Inspector (Note 3). |
| 6 monthly inspection by a Height Safety Equipment Inspector (Note 3). |
| 12 monthly inspection by a Height Safety Equipment Inspector (Note 3). |
| Up to 5 yearly inspection if recommended by the manufacturer.<br>12 monthly inspection is recommended by Capital Safety. |
| Up to 5 yearly service if recommended by the manufacturer. Capital Safety recommends: Type 1 - yearly, sealed type 2 and type 3 devices - two yearly, unsealed type 2 and type 3 - yearly. |
| Capital Safety recommends: 5 yearly inspection for systems installed by a Capital Safety accredited installer, all other systems - yearly. |
| 6 monthly inspection by a Height Safety Equipment Inspector (Note 3). |
| Inspection by a Height Safety Equipment Inspector on entry or re-entry into service. |
| Inspection by a Height Safety Equipment Inspector before further use (Note 3). |

*3. All inspections other than those by the operator are to be documented.*
*4. Consult with local and state regulations as some inspection requirements for items such as anchor points may require more frequent inspection.*

As recommended by Capital Safety, inspection scheduling for other fall protection equipment is given below.

| Equipment | Before & After Use |
|---|---|
| Winches, Salalift I & II, Advanced | YES |
| Rescue Positioning Devices (RPD's) | YES |
| Rescue and Rescumatic Controlled Descent Devices | YES |
| Tripod, Davit Arms, Support Structures | YES |

Records of inspections and maintenance must be recorded in an inspection and maintenance log maintained by the company.

| Item to be Recorded | Harnesses, Lineworkers Body Belts & Assemblies | Lanyard Assemblies & Pole Straps |
|---|---|---|
| Manufacturer's supplier's or installer's name & address | YES | YES |
| Manufacturer's batch number | YES | YES |
| Serial or identifying number | YES | YES |
| Year of manufacture | YES | YES |
| Details of recommended connection to belts or harnesses | - | YES |
| Type of anchorage line to be used | - | - |
| Suitability & limitation on various usages | YES | YES |
| Date of purchase | YES | YES |
| Date first placed into service | YES | YES |
| Date & details of inspection & services | YES | YES |

| 6 Monthly Height Safety Equipment Inspector | Service Period |
|---|---|
| YES | 2 Year |
| YES | 1 Year |
| YES | 1 Year |
| YES | 1 Year |

| Type 1 Fall-Arrest Devices Including Anchorage Line | Type 2/3 Fall-Arrest Devices | Mobile Attachment Devices | Fixed Anchorages, Horizontal Life Lines & Life Rails |
|---|---|---|---|
| YES | YES | YES | YES |
| YES | YES | - | - |
| YES | YES | YES | YES |
| YES | YES | YES | - |
| YES | YES | - | - |
| YES | - | - | - |
| YES | YES | YES | YES |
| YES | YES | YES | YES |
| YES | YES | YES | YES |
| YES | YES | YES | YES |

# TRAINING

**“Because having the best equipment in the world doesn’t help if you don’t know how to use it.”**

“Training is essential in providing persons with the competence to successfully implement and comply with legislative obligations and to manage tasks while working at height.” (AS/NZS 1891.4, Appendix E)

All users of fall protection/height safety equipment, or people taking part in harness-based work at heights, are required to be trained and assessed in accordance with the requirements of the standard, as set out below:

- Training and competency assessment conducted at 5 levels:
  1) Height safety theory
  2) Height safety operator
  3) Height safety supervisor
  4) Height safety equipment inspector
  5) Height safety manager
- Competency reassessment at appropriate intervals
- Records of training and competency shall be kept and recorded for each person trained

Capital Safety is accredited by the National VET Regulator, ASQA, to deliver the following nationally recognised units of competency:


- HLTCPR211A Perform CPR
- HLTFA211A Provide Basic Emergency Life Support
- HLTFA311A Apply First Aid
- MEM11011B Undertake Manual Handling
- MEM15004B Perform Inspection
- MSAPMPER200C Work in Accordance with an Issued Permit
- MSAPMPER205C Enter Confined Space
- MSAPMOHS217A Gas Test Atmospheres
- PUASAR022A Participate in a Rescue Operation
- PUASAR032A Undertake Vertical Rescue
- RIIOHS202A Enter and Work in Confined Spaces
- RIIOHS204A Work Safely at Heights
- RIIRIS201B Conduct Local Risk Control
- RIIRIS301A Apply Risk Management Processes

Capital Safety continues to provide training programs meeting the needs of end users and educating workers in the principles of working safely at height. Training of any kind should engage the participant and entice them to learn. By creating courses that demand active participation, the student becomes involved in the learning process increasing the information understood and their retention.

Please contact Capital Safety for further information and a list of training course licensees able to deliver this training.

**Courses are available via open enrolment and onsite.**

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# REGULATIONS & AUTHORITIES

## RELEVANT REGULATORY AUTHORITIES & LEGISLATION

## AUSTRALIA

### National

**Authority:** Safe Work Australia
**Phone:** 02 9121 5317
**Website:** www.safeworkaustralia.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011

### Australian Capital Territory

**Authority:** WorkCover/WorkSafe ACT
**Phone:** 02 6205 0200
**Website:** www.ors.act.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety Act 2011
Work Health and Safety Regulation 2011

### New South Wales

**Authority:** WorkCover NSW
**Phone:** 13 10 50
**Website:** www.workcover.nsw.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety Act 2011
Work Health and Safety Regulation 2011

## Victoria

**Authority:** Worksafe Victoria
**Phone:** 1800 136 089
**Phone:** 03 9641 1444
**Website:** www.worksafe.vic.gov.au
**Acts/Regulations/Codes of Practice:**
Occupational Health & Safety Act 2004

## Queensland

**Authority:** Workplace Health & Safety QLD
**Phone:** 1300 369 915
**Website:** www.dir.qld.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health & Safety Act 2011
Work Health and Safety Regulation 2011
Managing the Risk of Falls at Workplaces Code of Practice 2011

## South Australia

**Authority:** Safe Work S.A.
**Phone:** 1300 365 255
**Phone:** 08 8303 0400
**Website:** www.safework.sa.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety Bill 2011
Occupational Health, Safety & Welfare Regulations 2010

## Tasmania

**Authority:** Workplace Standards Tasmania
**Phone:** 1300 366 322
**Phone:** 03 6233 7657
**Website:** www.wst.tas.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety Act 2012

### Northern Territory

**Authority:** NT WorkSafe
**Phone:** 1800 019 115
**Website:** www.worksafe.nt.gov.au
**Acts/Regulations/Codes of Practice:**
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations

### Western Australia

**Authority:** Department of Commerce (Worksafe WA)
**Phone:** 1300 307 877
**Website:** www.worksafe.wa.gov.au
**Acts/Regulations/Codes of Practice:**
Occupational Safety & Health Act 1984
Occupational Safety and Health Regulations 1996

## NEW ZEALAND

**Authority:** Department of Labour - Te Tari Mahi
**Phone:** 04 915 4400
**Website:** www.dol.govt.nz
**Acts/Regulations/Codes of Practice:**
Health and Safety in Employment Act 1992 (HSE Act)
Health and Safety in Employment Regulations 1995

## RELEVANT STANDARDS

### Fall Arrest Equipment

AS/NZS 1891.1 Industrial Fall Arrest Systems & Devices Part 1: Safety Belts & Harnesses
AS/NZS 1891.2 Industrial Fall Arrest Systems & Devices Part 2: Horizontal Lifeline and rail systems
AS/NZS 1891.3 Industrial Fall Arrest Systems & Devices Part 3: Fall Arrest Devices

AS/NZS 1891.4 Industrial Fall Arrest Systems & Devices Part 4: Selection, Use & Maintenance

### Rope Access

AS/NZS4488.1 Industrial Rope Access Systems – Specifications
AS/NZS4488.2 Industrial Rope Access Systems – Selection, Use & Maintenance

### Portable Ladders

AS/NZS 1892.1 Portable Ladders Part 1: Metal
AS/NZS 1892.2 Portable Ladders Part 2: Timber
AS/NZS 1892.3 Portable Ladders Part 3: Reinforced Plastic
AS/NZS 1892.4 Portable Ladders Part 5: Selection, Safe Use and Care

### Scaffolding

AS/NZS 1576 Scaffolding
AS/NZS 4576 Guidelines for Scaffolding

### Elevating Work Platforms

AS1418.10 Cranes, Hoists and Winches (Design)
AS2550.10 Cranes, Hoists and Winches (Use & Maintenance)

### Platforms, Walkways & Stairs

AS1657 Fixed platforms, walkways, stairways and ladders – Design construction and installation

# GLOSSARY OF FALL PROTECTION TERMINOLOGY

**Anchorage**
A secure point of attachment for lifelines or deceleration devices, e.g. lanyards & self retracting lifelines.

**Anchorage Connector**
Provides a connection point onto an anchorage or building structure in order to attach the rest of the fall arrest system.

**Arresting Force**
The force imposed upon the worker and the anchorage point the moment the fall arrest system stops the fall. It is measured in kilo newtons (kN), a maximum of 6kN is allowable.

**Connector**
A device used to join together components of a personal fall arrest system or parts of a component within the system.

**Compatibility**
Equipment is deemed compatible when they have been designed to work together in such a way that their size and shape do not cause them to separate inadvertently during use.

**Competent Person**
AS/NZS 1891.4 defines a Competent Person as: A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to correctly perform a specified task. Refer to Training Levels for detailed definitions of competency.


**D-ring/Attachment Point**
An attachment point on the harness which allows for the connection of other components of a fall protection/positioning system such as a lifeline or deceleration device.

**Deceleration Device**
Any device which utilises an energy absorption component to minimise the impact of the force created during a fall on the body, such as a lanyard or self retracting lifeline.

**Double or Triple Action Device**
A self-closing hook or karabiner with a keeper latch which will automatically close and remain closed until manually operated. These units have a minimum of two (double) or three (triple) distinct and deliberate consecutive actions to manually open them.

**Fall Arrest Systems**
Systems that protect the worker after a fall from hitting the ground and/or obstructions below the work platform.
*Passive systems* require little or no personal involvement from the worker.
*Active systems* require the worker to actively use the system in order for it to be effective. It is not always practical, cost effective or possible to employ passive systems. In these cases, a Personal Fall Arrest System is required.

**Fall Indicator**
A visual indicator that shows the fall arrest system or device has been used to arrest a fall.

**Fall Prevention**
Refers to the systems and techniques that eliminate the possibility of a fall to a lower level. The most desirable method of fall prevention is to engineer out or modify the work plan to eliminate the hazard.

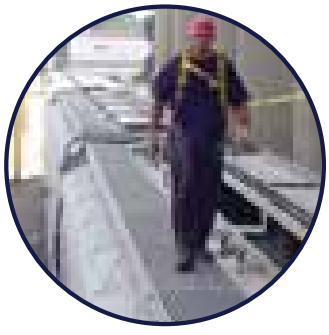
**Fall Protection**
Refers to the overall industry and process of protecting workers at height.

**Force**
Measured in technical terms in Newtons (N). The weight of something in Newtons (N) is calculated by multiplying its mass in Kilograms (kg) by the value of Gravity, which is 9.81 ($m/s^2$). A Kilogram (kg) is a unit of mass (i.e. the weight of a static object). Force = Mass x Acceleration.
For rough calculation purposes:
1000N = 1kN, 1kN = 100kg, 10kN = 1000kg.

**Harness (Full Body Harness)**
A webbing assembly that is worn by the user to distribute the arresting forces throughout the body in the event of a fall. The harness is equipped with attachment points to connect it to other components of a personal fall arrest system.

**Hierarchy of Control**
The hierarchy of control is a sequence of options which allow you to control a hazard from the highest level of control to the least preferred option. These measures, in order, are: identification, elimination, substitution and isolation. If these are not practical, fall protection equipment must be used.

**Horizontal Lifeline (HLL)/Rail System**
A flexible line supported by two or more anchorages, to which workers can connect a lanyard or SRL and travel safely along the line length. HLL's can be designed for total restraint or fall arrest.



**Karabiner**
A connector with a self-closing gate that can be manually locked or that automatically locks, and is used to attach to a fall protection component. Can be double action or triple action.

**Lanyard Assembly/**
**Shock-Absorbing Lanyard**
A line of rope, webbing or cable incorporating shock absorber and connectors at each end to connect the harness to the anchor device.

**Personal Fall Arrest Systems (PFAS)**
A combination of components that when used together will arrest a person in a fall from a working level. A PFAS typically consist of: an anchorage, full body harness, connectors and a deceleration device such as a lanyard or SRL.

**Pole Strap**
A work positioning strap designed to be placed around a pole/ structure and attached at two points, one on each side of a line worker's fall arrest harness while the wearer is working on the pole.

**Rescue**
The ability to retrieve or rescue an individual from confined spaces or heights. Rescue must always be a component of any fall protection program.

**Restraint Technique**
Control on a person's movement by connection to an anchorage to physically prevent the person from reaching a position at which there is a risk of a free or limited free fall.

**Risk Assessment**
The evaluation of hazards within the worksite which have the potential to cause frequent serious injury or illness to occur.

**Shock Absorber/Energy Absorber**
A webbing device that is designed to tear or extend, to reduce the forces on the worker in the event of a fall to less than 6kN.

**Snap Hook**
A connector with a hook shaped body that has an opening for attachment to a fall protection component and a self closing gate to retain the component within the opening. Hooks must be double-acting to be compliant.

**Sub-Pelvic Strap**
A strap incorporated into a full body harness which passes under the buttocks connecting the two leg loops. It is designed to distribute the forces from the inside of the legs to the outside to lessen the effect of injury following a fall.

**Total Restraint**
Control on a person's movement by means of connection to an anchorage using non-adjustable equipment in such a way that it will physically prevent the person from reaching any position at which there is risk of a fall, either over an edge, through a surface or due to a failed moveable platform.

**Training Levels (Levels of Competency)**
*Height Safety Operator* - A person who is able to perform harness based work at heights under the direct supervision of a height safety supervisor.

*Height Safety Equipment Inspector* - A person who is competent in the skills needed to detect faults in height safety equipment and to determine remedial action.

*Height Safety Manager* - A person who is competent in the selection, design, manufacture or installation of height safety systems or equipment, or the development of control measures or work practices.

*Height Safety Supervisor* - A person who is competent in the skills needed to perform harness based work at heights, to supervise other operators including those at entry level and to participate in first response rescue.

*Height Safety Theory* - A person who has undergone training in height safety theory to a standard equal to that of a nationally accredited general height safety course for operators.

## Type 1 Fall Arrest Device

Includes rope & rail grabs - A fall arrest device that travels along an anchorage line and, when loaded, locks to the line. The user is connected to the activating lever, which locks the device in the event of a fall. A typical use of a Type 1 device is as a ladder fall-arrest system, using a rigid rail or flexible line attached to the ladder.

## Type 2 & 3 Fall Arrest Device - Self Retracting Lifeline (SRL)

A deceleration device containing a drum-wound line which may be extracted and retracted under slight tension when the user moves vertically away from and towards the device. In the event of a fall, the device will quickly lock the drum and prevent the lifeline from paying out, thus arresting the user's fall and limiting the force to 6kN. When incorporating a retrieval winch, it becomes a type 3 fall arrest device.

## Vertical Lifeline System

A flexible line rigged from one or more anchors to which a worker can secure the components of their fall protection system in a vertical orientation. These systems provide freedom of movement whilst maintaining user protection from a fall from height.

## Work Positioning

Use of fall protection components in a way that allows a worker to be supported in a harness under tension, so that a fall is prevented, e.g. the use of a pole strap or lanyard.

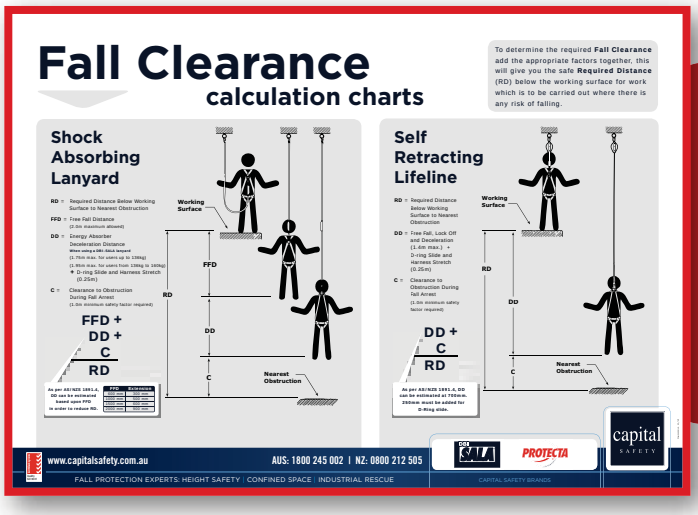
# WORKPLACE RESOURCES

## POSTERS

This range of **free** educational posters will improve your understanding of fall protection and enhance your safety when working at height. To order, please visit www.capitalsafety.com.au and click on the TOOLS tab.

**Absolute Confidence Poster:** Your equipment comes from Capital Safety, the world's premier fall protection company. This poster demonstrates that you've chosen the very best.


**ABCD of Fall Protection:** Fall protection need not be complicated. This A,B,C,D poster explains how to meet the basic requirements of a personal fall protection system.




## Fall Clearance:

Take the guesswork out of height safety. Use this poster to evaluate risks and safe operational distances. A few minutes of preparation can ensure you don't hit the ground before a fall is arrested!


## Inspection & Maintenance:

Inspection and maintenance of your fall protection equipment is mandatory and essential for working safely at height. Condensed into a single poster, you can review inspection & maintenance needs at a glance.


## Glossary:

It's essential that you don't mistake anchorage for anchorage connector. There are many important terms relating to fall protection and this poster defines the fundamental fall protection principles and terminology.


## Inspection & Fitting Guide:

A must-have poster wherever harnesses are used. This poster shows a step-by-step process of harness donning to ensure it's fit for service and being worn correctly.

## ONSITE TRAINING

Capital Safety's training department offers its training programs at the client's site to all locations across Australia, depending on availability. By teaching in and around the workers normal environment, we are able to ensure that the issues discussed are immediately applicable to the students.

Whether the training is done in your warehouse, on a drilling derrick, or mine, Capital Safety offers all of its open enrolment courses, as well as many customised courses at your site through its licensee network. Not only is this often a great cost saving, but the training is tailored to your site and workers, and the hands-on scenarios actually resolve fall protection hazards in and around your facility.

## SITE AUDITS

One of the biggest challenges facing many companies is understanding where the working-at-height risks exist on site and the types of measures that can be taken to minimise them. Whether you need an initial site assessment, site audit or full site survey, Capital Safety can provide guidance to your business to identify solutions to these measures. Contact us on 1800 245 002 (AUS) or 0800 212 505 (NZ) to see how we may be able to assist.

# PRODUCT CATALOGUES

Our range of product catalogues are designed to provide a product overview as well as solutions based information to key industry segments and applications relating to height safety, confined space and industrial rescue. Our range of literature is continually updated to reflect up to date information and product innovations, visit our website or contact Capital Safety to obtain your copies.

## MOBILE DEMONSTRATION UNIT

As part of our ongoing commitment to safety, Capital Safety offers extensive product and application tool-box talks and seminars across the country with our fleet of demonstration trailers.

Our Mobile Demonstration Units are fitted out with the latest fall protection equipment and systems that assist in the prevention of serious accidents or death in the workplace.

This is a complimentary service although availability is subject to demand. Contact us on +61 2 8753 7600 to arrange a booking through your local regional sales manager.

# EQUIPMENT INSPECTION AND TAGGING

Recording the details of equipment inspection and maintenance can be a challenging task, particularly when there are large volumes of items in a fleet. Consideration should be given to electronic means of recording data, either by way of electronic spreadsheets or RFID (Radio Frequency Identification) tagging systems to enable the company to both store and retrieve information quickly, safely and easily. For more information about electronic tagging options, talk to our technical team.

# EQUIPMENT INSPECTION CHECKLISTS

Your safety whilst working at height depends on effective inspection of your fall protection equipment, before and after use. Capital Safety has developed a series of comprehensive Equipment Inspection Checklists available at no cost from our website. Go to www.capitalsafety.com.au and simply click on the Tools tab to access and download your copy.


WORKPLACE RESOURCES

**WARNING: This booklet is a general reference guide and does not replace the requirement for competency based training.**

# FALL PROTECTION TRAINING

Nationally Recognised Training

**Capital Safety is accredited under the National VET Regulator, ASQA, to conduct the following nationally recognised training:**

- **HLTCPR211A Perform CPR**
- **HLTFA211A Provide Basic Emergency Life Support**
- **HLTFA311A Apply First Aid**
- **MEM11011B Undertake Manual Handling**
- **MEM15004B Perform Inspection**
- **MSAPMPER200C Work in Accordance with an Issued Permit**
- **MSAPMPER205C Enter Confined Space**
- **MSAPMOHS217A Gas Test Atmospheres**
- **PUASAR022A Participate in a Rescue Operation**
- **PUASAR032A Undertake Vertical Rescue**
- **RIIOHS202A Enter and Work in Confined Spaces**
- **RIIOHS204A Work Safely at Heights**
- **RIIRIS201B Conduct Local Risk Control**
- **RIIRIS301A Apply Risk Management Processes**

**Capital Safety is a Registered Training Organisation (RTO Provider No: 91276)**

For course details or to book online visit

**www.capitalsafety.com.au**

or call

**1800 245 002** (AUS) **0800 212 505** (NZ)

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