

COURSE SCHEDULE

Here's our schedule of Rope Access Training Courses.
 To book your place, call us on **07 3862 2533**.

AUG/SEP August 28th - September 1st

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1		

SEPTEMBER

M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER October 9th - 13th

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER November 20th - 24th

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

NOTES

2017 COURSES





Fall Protection

Every worker's guide to
**Height Safety
Essentials.**



HEIGHT DYNAMICS
HEIGHT SAFETY SPECIALISTS

Authorised Distributor of
3M Fall Protection Products

**Developed in the interest of worker safety
by 3M Fall Protection**

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.

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The ABC's of Fall Protection

The ABC's 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.

Education

Education is essential to ensure at height workers are thoroughly trained, 3M Fall Protection offers a variety of free resources, training and consultative services to fit your needs.

Fall Protection for Tools

Fall protection for tools helps make work environments safer and more productive by reducing dropped object incidents.

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 11% of all fatalities in the workplace in Australia*

- 37% 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 2013.

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 a requirement under the standard! See Fundamental Fact #12, on page 9.

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 12 and 13.

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 and AS/NZS 5532 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 WH&S legislation.

Australian and New Zealand Standards also require that all fall arrest devices such as SRLs be subjected to a full service by a height safety equipment inspector as recommended by the manufacturer or every 12 months in the absence of any recommendations.

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 26.

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, 3M's Fall Protection Training provider, offers a range of internationally accepted courses nationally recognised by ASQA, refer to page 20 for more information.

Risk Assessment

Hazards & Risks

A Hazard can be defined as a situation which poses a level of threat to life, health, property or environment.

A Risk may be defined as a situation involving exposure to danger, harm or loss when exposed to a hazard.

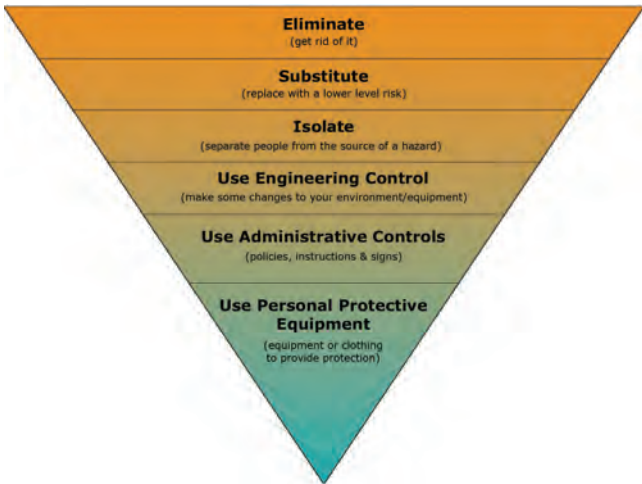
For example, an unprotected edge is a hazard, but falling from the unprotected edge is the risk.

Risk Assessment Matrix		Likelihood				
		Almost Certainly Will Occur	Good Chance Could Occur	Likely To Occur	Unlikely To Occur	Extremely Unlikely To Occur
Most Likely Consequence	Disastrous (5)	High	High	High	Med	Med
	Critical (4)	High	High	Med	Med	Low
	Serious (3)	High	Med	Low	Low	Very Low
	Significant (2)	Med	Low	Low	Very Low	Very Low
	Minor (1)	Low	Very Low	Very Low	Very Low	Very Low

Once the hazards have been identified and the risks assessed utilising the assessment matrix above, the appropriate control measures can be identified to either eliminate or reduce the risk using the 'Hierarchy of Control'.

Hierarchy Of Control

The 'Hierarchy of Control' is a series of control measures that can be implemented in order to eliminate or reduce the risk to an acceptable level. In order to provide the best fall protection available in a specific work environment, the control measure applicable should be selected in the order from highest to lowest, taking account of the most reasonably practicable solution available.



Fall Clearance & Swing Fall Hazards

Shock Absorbing Lanyard Fall Clearance Calculation

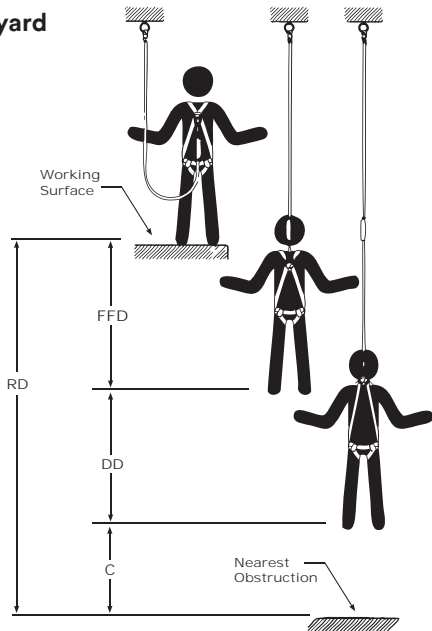
RD = Required Distance Below Working Surface to Nearest Obstruction

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)

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



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.

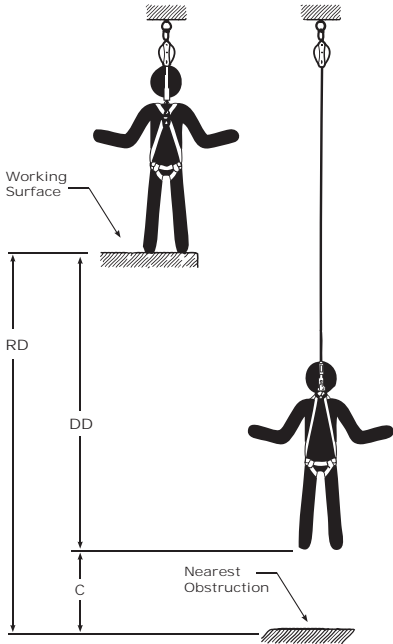
Self-Retracting Lifeline Fall Clearance Calculation

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

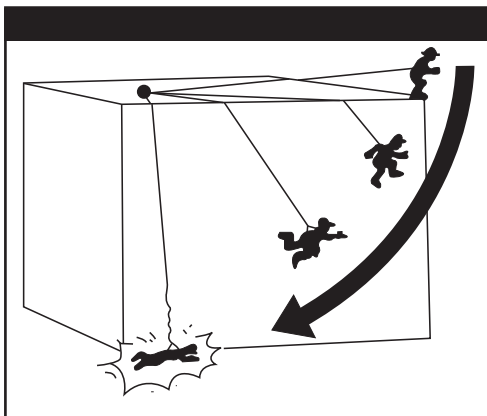
Swing Fall can occur when using a shock absorbing lanyard or self retracting lifeline (SRL) whilst working at height.

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.

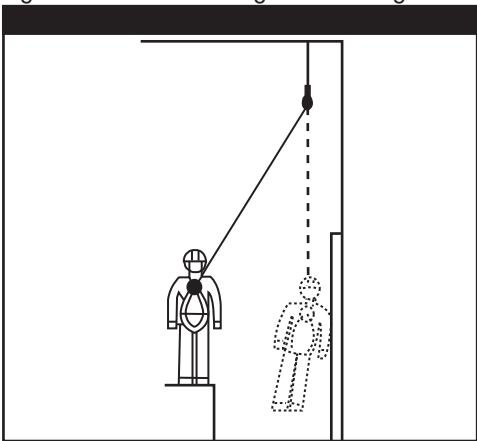
Operators should ensure they do not subject themselves to swing fall by taking measures to avoid the risk. Refer to Figure One and Two for examples of swing fall hazards.

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 equipment 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
Anchorage—drilled-in type or attached to timber frames	Clause 9.3.3
Anchorage—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^{1,4}

Inspection by a Height Safety Operator and/or Height Safety Equipment Inspector² before and after each use.

6 monthly inspection by a Height Safety Equipment Inspector³.

6 monthly inspection by a Height Safety Equipment Inspector³.

6 monthly inspection by a Height Safety Equipment Inspector³.

12 monthly inspection by a Height Safety Equipment Inspector³.

Up to 5 yearly inspection if recommended by the manufacturer.

12 monthly inspection is recommended by 3M Fall Protection.

Up to 5 yearly service if recommended by the manufacturer. 3M Fall Protection recommends: Type 1 - yearly, sealed type 2 and type 3 devices - two yearly, unsealed type 2 and type 3 - yearly.

3M Fall Protection recommends: 5 yearly inspection for systems installed by a 3M Fall Protection accredited installer, all other systems - yearly.

6 monthly inspection by a Height Safety Equipment Inspector³.

Inspection by a Height Safety Equipment Inspector on entry or re-entry into service.

Inspection by a Height Safety Equipment Inspector before further use³.

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 3M Fall Protection, 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

Courses are available via open enrolment and onsite.

Capital Safety, 3M's Fall Protection Training provider, is accredited by the National VET Regulator, ASQA, to deliver the following nationally recognised units of competency:



- RIIWHS204D - Work Safely at Heights
- RIIWHS202D - Enter and Work in Confined Spaces
- MSMPER205 - Enter Confined Space
- MSMPER200 - Work in Accordance with an Issued Permit
- MSMWHS217 - Gas Test Atmospheres
- MSMWHS216 - Operate Breathing Apparatus
- PUASAR022A - Participate in a Rescue Operation
- PUASAR032A - Undertake Vertical Rescue
- HLTAID001 - Provide Cardiopulmonary Resuscitation
- HLTAID002 - Provide Basic Emergency Life Support
- HLTAID003 - Provide First Aid
- HLTAID006 - Provide Advanced First Aid
- HLTAID007 - Provide Advanced Resuscitation
- MEM11011B - Undertake Manual Handling
- MEM15004B - Perform Inspection
- UETDRRF06B - Perform Rescue from a Live LV Panel
- PUAWER008B - Confine Small Workplace Emergencies

Our industry specific training programs meet the needs of end users and educate workers in the principles of working safely at heights and post fall recovery. Our range of specialist courses include: Height Safety Supervisor, Height Safety Manager, Post Fall Recovery, Bridge/Rooftop Rescue, Jump Form Rescue, Swing Stage Rescue, Tower Crane Rescue & Evacuation and Tower Rescue.

Training of any kind should engage the participant and entice them to learn. By creating courses that demand active participation, students are more involved in the learning process which increases both understanding and retention.



Regulations & Authorities

Relevant Regulatory Authorities & Legislation

Australia National

Authority: Safe Work Australia

Phone: 1300 551 832

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: WorkSafe ACT

Phone: 02 6207 300

Website: www.worksafe.act.gov.au

Acts/Regulations/Codes of Practice:

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

New South Wales

Authority: Safework NSW

Phone: 1300 736 722

Website: www.safework.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 Queensland
Phone: 1300 369 915
Website: www.worksafe.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: SafeWork SA
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: WorkSafe Tasmania
Phone: 1300 366 322
Phone: 03 6166 4600
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

Phone: 08 9327 8777

Website: www.commerce.wa.gov.au/worksafe

Acts/Regulations/Codes of Practice:

Occupational Safety & Health Act 1984

Occupational Safety and Health Regulations 1996

New Zealand

Authority: WorkSafe New Zealand

Phone: 0800 030 040

Website: www.worksafe.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 and devices.

Part 1: Harnesses and ancillary equipment

AS/NZS 1891.2 Industrial fall-arrest systems and devices.

Part 2: Horizontal lifeline and rail systems

AS/NZS 1891.2 Supp 1:2001 Industrial fall-arrest systems and devices. Part 2: Horizontal lifeline and rail systems

Supplement 1: Prescribed configurations for horizontal lifelines
(Supplement to AS/NZS 1891.2:2001)

AS/NZS 1891.3 Industrial fall-arrest systems and devices.
Part 3: Fall-arrest devices

AS/NZS 1891.4 Industrial fall-arrest systems and devices.
Part 4: Selection, use and 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 1892.5 Portable Ladders Part 5: Selection,
Safe Use and Care

Scaffolding

AS/NZS 1576 Scaffolding

AS/NZS 4576 Guidelines for Scaffolding

Elevating Work Platforms

AS1418 Cranes, Hoists and Winches (Design)

AS2550 Cranes, Hoists and Winches (Safe Use)

Platforms, Walkways & Stairs

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

Anchor Point Devices

AS/NZS 5532 Manufacturing requirements for single-point
anchor device used for harness-based work at height

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:

$$1000N = 1kN, \quad 1kN = 100kg, \quad 10kN = 1000kg.$$

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 a 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 3M.com.au/FallProtection and click on the Safety Resources tab.

Bringing Every Worker at Height Home Safely:

Your equipment comes from 3M Fall Protection, the world's premier fall protection company. This poster demonstrates that you've chosen the very best.



ABC's of Fall Protection:

Fall protection need not be complicated. This ABC's poster explains how to meet the basic requirements of a personal fall protection system.



3M | OSHA | Fall Clearance Calculation Charts.

Check Anchoring Layout. Fall Arresting Methods.

The sky is the limit. www.3m.com www.osha-slc.gov www.enr.com www.enr.com www.enr.com

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.

3M | OSHA | Inspection & Maintenance Of Fall Protection Equipment.

Inspection & Maintenance

The sky is the limit. www.3m.com www.osha-slc.gov www.enr.com www.enr.com www.enr.com

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.

3M | OSHA | Glossary Of Fall Protection Terminology.

Glossary

The sky is the limit. www.3m.com www.osha-slc.gov www.enr.com www.enr.com www.enr.com

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.

3M | OSHA | Harness Inspection & Fitting Guide.

Harness Inspection & Fitting Guide

The sky is the limit. www.3m.com www.osha-slc.gov www.enr.com www.enr.com www.enr.com

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

3M Fall Protection'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, we offer all of our open enrolment courses, as well as many customised courses at your site through our 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.



Technical Bulletins

Technical Bulletins address the technical issues relating to 3M Fall Protection products. Please check bulletins frequently, as updates are made on a regular basis.



They can be found at 3M.com.au/FallProtection under the Safety Resources tab.

Catalogues and Product Literature

Our literature is 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 3M Fall Protection to obtain your copies.



Mobile Demonstration Unit

As part of our ongoing commitment to safety, 3M Fall Protection 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 your Regional Sales Manager or our Customer Service Centre on 1800 245 002 (AUS) 0800 212 505 (NZ) to arrange a booking or for more information.



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. Talk to our technical team for more information about electronic tagging options and 3M™ Active Safety

RFID tracking systems that can be highly customised to track fall protection equipment and manage your safety inspection program.

Equipment Inspection Checklists

Your safety whilst working at height depends on effective inspection of your fall protection equipment, before and after use. 3M Fall Protection has developed a series of comprehensive Equipment Inspection Checklists available at no cost from our website. Go to 3M.com.au/FallProtection and simply click on the Safety Resources tab to access and download your copy.



Resource Centre App

Our resource centre app provides industry professionals with a singular access point to a host of height safety tools, product information and educational resources.

- Once downloaded, any tool or catalogue inside the app is also available offline so it's always available on your device.
- The comprehensive eCatalogue contains the entire range of fall protection products to explore in depth and share with others



Search for our Resource Centre App
in your app store



Working At Height Association (WAHA)

3M Fall Protection is proud to be a member of the Working At Height Association (WAHA) of Australia. WAHA is dedicated to the ongoing development of the highest standards of equipment and competency of all persons involved in working at height.

WAHA recognises that working at height is a high risk operation and the highest possible standards must be applied, if you are involved with height safety equipment in any way why not consider becoming a member and see how WAHA can assist you.

For more information visit:
www.waha.org.au



3M Fall Protection Website

Visit our fall protection website to view enhanced product details including: specifications, literature, technical bulletins, manuals, videos and more... all at your fingertips.



3M.com.au/FallProtection

Inspection Reporting Service



Is your site safe to work at height?

- The law requires that you provide a safe work environment for staff, visitors and contractors.
- How long has it been since your last site inspection?

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.

Our trained technicians will utilise our exclusive Inspection Reporting Tool to develop a thorough report, making recommendations that employ world's best practice regarding fall protection in your workplace.

Contact your Regional Sales Manager or our Customer Service Centre on 1800 245 002 (AUS) 0800 212 505 (NZ) to book your site inspection or for more information.



Fall Protection Training

Capital Safety, 3M's Fall Protection Training provider, is a Registered Training Organisation accredited under the National VET Regulator, ASQA, to conduct nationally recognised training.



RTO Provider No: 91276

For course details or to book online visit

3M.com.au/FallProtection

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

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



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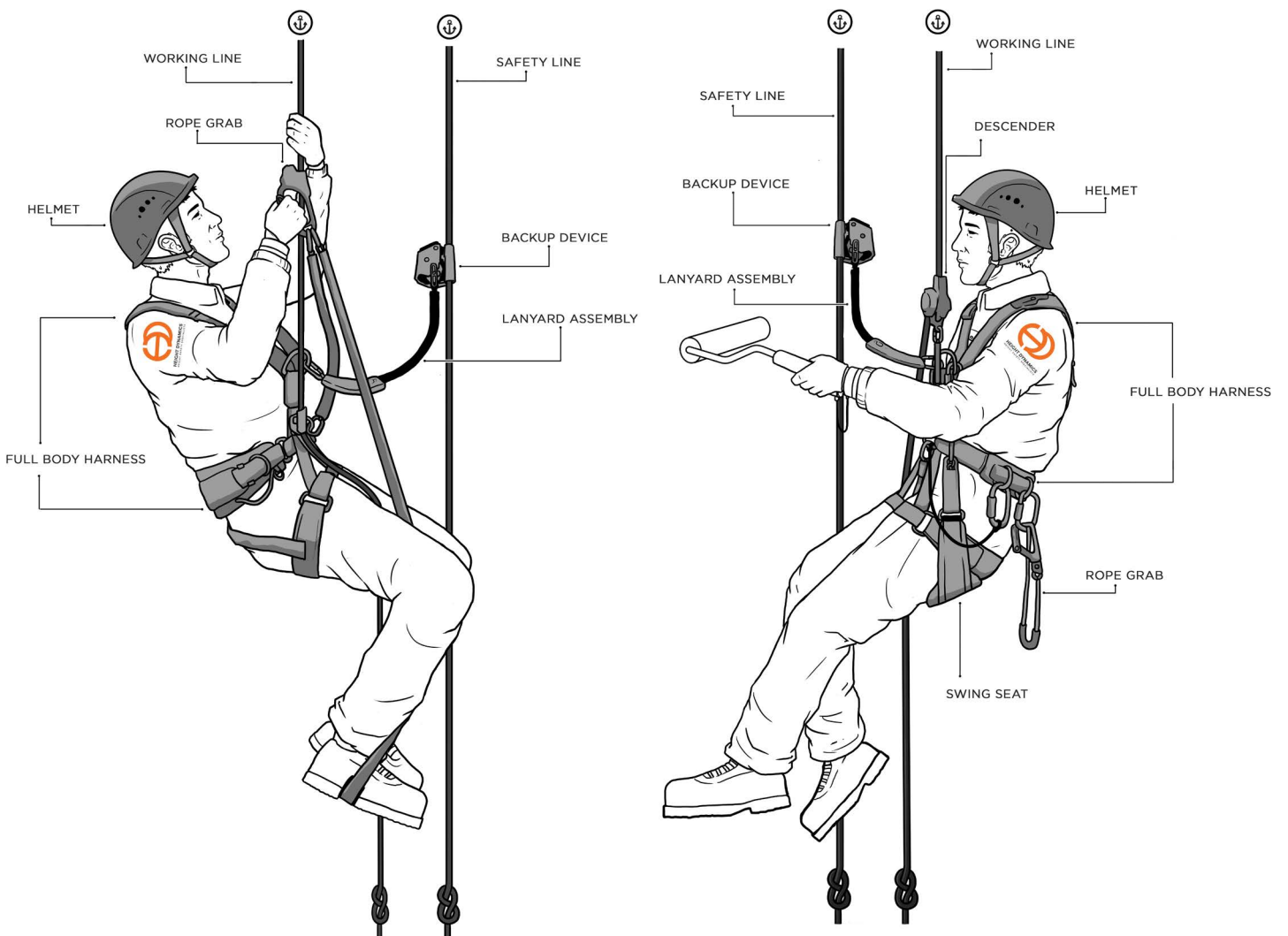
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www.heightdynamics.com.au



ROPE ACCESS EQUIPMENT



The list covers a select range of Rope Access equipment that is commonly used in Australia by rope access technicians.

There is a large range of equipment not listed that is suitable for rope access. Care must be taken when selecting rope access that it is fit for purpose and meets relevant standards. Training to ensure that the user is competent in the correct use of this equipment must also be undertaken.

ITEM	MODEL	STANDARD	COMMENTS	
HARNESS	SKYLOTEC Rescue Pro 2	AS/NZS 1891.1	Comes with built in chest ascender.	VIEW PRODUCT
	FERNO Centerpoint 2	AS/NZS 1891.1	Chest ascender can be retrofitted.	VIEW PRODUCT
	SALA Exo-fit Suspension	AS/NZS 1891.1	Comes with chest ascender model.	VIEW PRODUCT
	PETZL Avao Bod Croll Fast	ANSI Z359.11 NFPA EN 361, 358, 813	Popular harness but doesn't meet AS standard.	VIEW PRODUCT
DESCENDER	PETZL ID S	EN 341, 12841 ANSI Z359.4, NFPA	Industry standard. Certificate of conformance available.	VIEW PRODUCT
	ISC D4	EN12841, ANSI Z359, NFPA 1983	Rated to 240kg. Ideal for rope access and rescue.	VIEW PRODUCT
	FERNO FDU200	AS/NZS 4488.1-2	Has limited function for rope access. Rated 2 person rescue.	VIEW PRODUCT
	ROLLGLISS No-Worries	AS/NZS 4488.1-2	Has limited function for rope access. Rated 2 person rescue.	VIEW PRODUCT
BACK-UP DEVICE	CT Sparrow	EN 341:2011/2A	Alternative descender. Rated to 210kg.	VIEW PRODUCT
	PETZL ASAP Lock Absorbica	CE EN 353-2, CE EN 12841 type A	Industry standard. Suitable for two person rescue.	VIEW PRODUCT
	PETZL ASAP Absorber	CE EN 353-2, CE EN 12841 type A	Trailing back-up not rated for two person rescue.	VIEW PRODUCT
ASCENDERS	SAFE TEC Duck R	EN 12841:2006	Functions like the shunt but rated as a back-up device.	VIEW PRODUCT
	PETZL Ascension	CE EN 567, CE EN 12841 type B NFPA	Industry standard.	VIEW PRODUCT
	ROLLGLISS Explorer Ascender	EN 567, AS/NZS 4488, NFPA 1983	Heavy duty, well featured.	VIEW PRODUCT
CARABINERS	KONG 411 Screwgate	CE EN 12275, CE EN 362/B	Industry standard. Steel, screwgate, keylock 50kN.	VIEW PRODUCT
	KONG 414 Triple action	CE EN 12275, CE EN 362/B	Steel, triple lock, keylock 50kN.	VIEW PRODUCT
	ROCK EXOTICA Pirate S/gate	CE 0120, EN12275 EN362	Quality alloy karabiner. Screwgate, keylock 24kN.	VIEW PRODUCT
	ROCK EXOTICA Pirate Trilock	CE 0120, EN12275 EN362	Quality alloy karabiner. Triple-action, keylock 24kN.	VIEW PRODUCT
STATIC ROPE	DONAGHY'S Response XT 11mm	EN1891, AS/NZS 4142.3	Meets AS standard for Static Life Rescue Line.	VIEW PRODUCT
	EDELRID Safety Static 11mm	EN1891, AS/NZS4488.1-2	Meets AS standard for rope access only.	VIEW PRODUCT
	NBI Arresta 11.5mm	EN1891, AS/NZS4142.3	Meets AS standard for Static Life Rescue Line.	VIEW PRODUCT
	BEAL Industrie 11mm	EN1891, AS/NZS4488.1-2	Meets AS standard for rope access only.	VIEW PRODUCT
ROPE ACCESS CHAIRS	PETZL Podium	N/A	Rope access seat.	VIEW PRODUCT
	SKYLOTEC Skyboard	N/A	Available in two sizes.	VIEW PRODUCT
	HEIGHT DYNAMICS Comfort Seat	N/A	Height Dynamics seat. Manufactured in-house.	VIEW PRODUCT
HELMETS	PETZL Vertex Vent	CE EN 12492, ANSI Z89.1-2009	Industry standard for working at height.	VIEW PRODUCT
	PETZL Vertex Best	EN 397 EN 12492, ANSI Z89.1-2009	Industry standard for working at height.	VIEW PRODUCT
	KASK HP	AS/NZS 1801, CE EN 14052	One of the only working at height helmets certified to AS1801.	VIEW PRODUCT
COWSTAILS	Dynamic rope 11mm	N/A	Dynamic rope knotted to form short lanyards to attach to ascenders and back-up device.	
ROPE BAGS	Numerous	N/A	A large variety of rope bags are available. Used to protect and transport rope when it is not in use.	VIEW PRODUCT
ROPE & EDGE PROTECTORS	Numerous	N/A	Large range available depending on level of protection required.	VIEW PRODUCT
POD BAGS	Numerous	N/A	Tool and material bags.	VIEW PRODUCT
EQUIPMENT BAGS	Numerous	N/A	Used to transport and protect equipment.	VIEW PRODUCT
FOOT LOOPS	Numerous	N/A	Used to assist in ascending.	VIEW PRODUCT

Explanatory Notes – Standards

AS/NZS 1891.1 refers to Industrial fall-arrest systems and devices Harnesses and ancillary equipment. This standard is the manufacturing standard and sets the requirements and testing for the manufacture of harnesses, lanyards, polestraps and associated equipment.

Where the standard is stated as American and European or AS/ NZS, American and European it refers to the relevant standards from these countries. Most of these items will comply with the related Australian standard but will not have been through the certification process. Typically a Certificate of Conformance can be supplied with the product but due to different labeling requirements this may be limited to meeting the “performance criteria” only.

AS/NZS 4488.1-2 refers to Industrial rope access systems. This is the standard that provides test criteria for to the descenders, rope grabs and backup type devices. It also specifies the selection, use and maintenance of rope access equipment. Interestingly it allows for ropes that don't meet the marking or colour contrast that the AS/NZS Static Rope standard requires... this opens the door for the use of EN ropes for rope access.

AS/NZS 4142.3 is the standard for Fibre ropes - Man-made fibre rope for static life rescue lines and specifies design, performance and marking requirements for man-made fibre ropes intended for use as static life rescue lines by rescue and emergency services.



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