

Working at Heights



MAJOR WORKPLACE HAZARDS



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INTRODUCTION

Falls from heights account for many workplace injuries in South Australia. This booklet has been prepared as part of Workplace Services "Major Hazards Strategy". The aim of the booklet is to provide information about safe work practices for workplaces where work at heights occurs.

GENERAL SAFETY OBLIGATIONS

The aim of the Occupational Health, Safety & Welfare Act 1986 (OHS&W) and Regulations is to ensure the health, safety and welfare of persons at work and apply to all workplaces.

A 'Workplace' is defined by the OHS&W Act as *'any place (including aircraft, shop or vehicle) where an employee works and includes any place where an employee goes while at work'*.

Although ultimate responsibility for compliance with the legislation rests with the owner/occupier, the legislation places responsibilities on both employer and employee. Emphasis is placed on consultation between all parties to achieve a safe and healthy work environment. To facilitate this occurring the legislation makes provision for workers to elect Health and Safety Representatives.

RESPONSIBILITIES

Employers are responsible for providing:

- ◆ a safe working environment
- ◆ safe systems of work
- ◆ safe plant and substances
- ◆ training, supervision and information
- ◆ welfare facilities such as first aid amenities etc and to:
- ◆ monitor working conditions and employees health
- ◆ keep work injury records.

Employees are responsible for:

- ◆ protecting their own health and safety

Occupational Health and Safety Regulations

Prevention of falls

DIVISION 2.13.1 (1) The purpose of this regulation is (a) to guard against falls that cause injuries due to the distances fallen; and (b) to guard against persons falling into enclosures or containers that contain a source of danger; and (c) to ensure safe access to elevated workplaces; and (d) to prescribe standards that must be observed in relation to the construction, maintenance and use of ladders; and (e) to prescribe standards that must be observed in relation to the performance of maintenance work carried out above ground level on permanent structures.

- ◆ avoiding adversely affecting the health and safety of others
- ◆ using equipment provided for health and safety
- ◆ obeying their employer's health and safety instructions
- ◆ complying with occupational health and safety policies
- ◆ not endangering health and safety by alcohol use or drug consumption.

WORKPLACE HEALTH AND SAFETY PLANS

A workplace health and safety plan is a tool that can be used to manage workplace health and safety.

Who should prepare a Workplace health and Safety plan?

- ◆ a principle contractor at a construction workplace (for the workplace); and an
- ◆ employer or self-employed person carrying out specified work (for the work).

The plan must state:

- ◆ hazards to health and safety
- ◆ assessment of the risks which may result because of the hazards
- ◆ control measures to be used to prevent or minimise the level of the risks
- ◆ how the control measures are to be monitored and reviewed.

The plan must state the control measures to be used to prevent the risk of injury where people, at or near a workplace, may be exposed to the risk of falling from height.

Control measures should be in place before a person starts working at heights. For example, ensure working platforms are in place before formwork is erected.

The three levels of control measure available to protect people from the risk of a fall, in order of preference, are:

- ◆ erecting a physical barrier
- ◆ providing personal fall protection
- ◆ measures to "catch" a person after they have fallen.

- (2) If
- (a) a person must work
 - (i) in an elevated workplace from which he or she could fall; or
 - (ii) in the vicinity of an opening through which he or she could fall; or
 - (iii) in any other place from which he or she could fall, and it is reasonably foreseeable that the person would be injured in such a fall due to the distance of the fall; or
 - (b) a person must work in the vicinity of an enclosure or container into which he or she could fall and there is a reasonable likelihood that the person would be injured in such a fall, reasonable protection against a fall must be provided
 - (c) by the provision of a safe means of access to the workplace; and
 - (d) by the provision of secure fences, covers or other forms of safeguarding or, if that is not reasonably practicable due to the nature of the work, by the provision and maintenance of safe systems of work.

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In some circumstances more than one control measure may be necessary.

Physical Barriers are the preferred method of preventing a person from falling from height. Other measures will not always prevent the person from being injured. For example, fall-arrest systems may prevent a person from falling to another working surface. However, the person using the system may suffer an injury as a result of the load placed on their body by the fall-arrest harness. A person may lose their balance and fall from a working platform and be caught by a catch net. However, because the fall was unexpected the person may suffer an injury through landing in the catch net awkwardly.

Examples of physical barriers include:

- ◆ edge protection systems
- ◆ fall protection covers
- ◆ working platforms.

Edge protection systems are barriers erected around the edge of a building, structure or hole. An edge protection system may consist of guard railing or vertical containment sheeting.

Guard rail systems should be used on the edge of:

- ◆ working platforms
- ◆ walkways
- ◆ stairways
- ◆ ramps
- ◆ landings

A guard rail should run parallel to the working surface and not be further than 100mm outside the edge of the working surface. The guard rail height should be between 900mm and 1100mm above the working surface.

Guard rails must have mid rails. A mid rail is a structural

(3) If a person at work must gain access to a place that cannot be reached conveniently from floor or ground level, and no appropriate means of mechanical access or fixed stairway is available, a suitable ladder or steps must be provided.

(4) Any safeguarding provided for the purposes of subregulation (2)(d) must be kept in good condition and must not be removed except so far as may be necessary to allow the access or egress of any person or the shifting of materials.



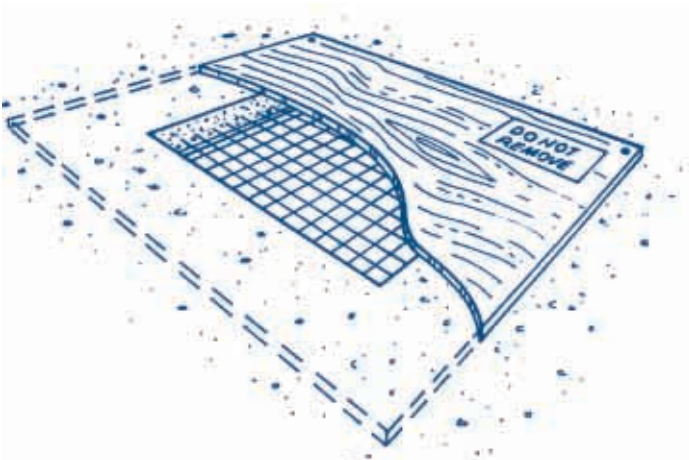
member secured midway between the guardrail and the working surface. It should run parallel to the working surface and be no further than 100mm outside the edge of the working surface.

Both the guard rail and the mid rail should be able to withstand the impact of a person falling against them.

A toe board is a vertical barrier used in conjunction with guard rails and mid rails to prevent a person from falling under the guard rail. Toe boards may be fully sheeted with timber or metal or made from mesh. They should be secured adjacent to the work surface and extend a minimum of 150mm above the work surface.



Fall protection covers are a protective structure placed over holes and openings to prevent falls. All holes and openings (except lift shafts and stairwells) should have fall protection covers in place.



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A cover should be capable of supporting the impact of a person falling onto it. Fall protection covers are usually sheeted with:

- ◆ solid sheeting (timber, plywood or metal) or
- ◆ mesh.

Holes or openings covered with wire mesh should not be used as a working platform. All covers should be securely fixed around the hole. Signs should also be attached to the cover to warn people that there is a hole underneath. For example, metal mesh is spread on top of purlins or battens to provide fall protection for roof installers from falling between the purlins or battens.

Elevating Work Platforms consist of a platform surrounded by an edge protection system. The elevating work platform is used to place workers in the correct position to carry out the task. Different types of elevating work platforms include telescopic, scissor, boom, articulated platforms or any combination of these.

PERSONAL FALL PROTECTION

Systems of work and equipment that secure a person to a building or structure are known as personal fall protection.

Personal fall protection discussed in this booklet include 'travel restriction devices', 'fall prevention systems' and 'fall arrest systems'.

Use personal fall protection systems when:

- ◆ within the confines of a working platform



- ◆ other forms of fall protection such as guardrails are not available
- ◆ used in conjunction with other measures of fall protection such as safety nets or fixed platforms.

The use of these systems requires active involvement to ensure the equipment is worn, attached and used in the correct way.

Where no other forms of fall protection can be used, personal fall protection systems should be used to minimise the risk of:

- ◆ a person from falling from a height (travel restriction devices)
- ◆ injury to a person after a person has fallen from a height (fall arrest systems).

Travel restriction devices restrain a person from reaching an unprotected edge by tethering them to an eye-bolt or other suitable anchorage point. This type of personal fall protection system is preferred over those that arrest a person after they have fallen.

The anchorage points should be capable of taking the load.

Personal fall protection devices which restrict travel include:

- ◆ industrial rope access systems and
- ◆ fall-prevention systems.

An industrial rope access system is a twin rope system used to provide access to a work area. A work positioning harness or seat is attached to one rope and a fall arrest harness is attached to the other rope. The system should be used in accordance with the designer's and/or the manufacturer's instructions.

Fall prevention systems consist of a restraint belt or work positioning harness connected to a restraint line and attached to



a fall-prevention static line or an anchorage point which prevents a person getting into a situation where they could fall.

Types of fall-prevention systems include:

- ◆ A restraint belt, or work positioning harness. This is worn by a person connected to a restraint line, and this restricts the horizontal distance the wearer is able to travel.
- ◆ A fall-prevention static line is a horizontal line connected to a fixed anchorage point, on which a restraint line can be attached to increase the area that can be covered by a person wearing a fall-prevention system.
- ◆ A fall-prevention anchorage point is a secure point of attachment to a structure or static line to which a restraint line is attached. An anchorage point of a fall-prevention system should be positioned to ensure that the restraint line does not allow the person wearing the system to free fall.



(“Note: Any fall arrest system must be installed by an accredited installer and in accordance with AS/NZS1891 Industrial fall-arrest systems and devices –Fall arrest systems.”)

Fall arrest systems are designed to arrest the fall of a person.

Types of fall arrest systems include:

- ◆ (where there is a risk of free fall) a fall arrest harness connected to a lanyard assembly and attached to a fall-arrest static line or an anchorage point; or
- ◆ (where there is a risk of a free fall of not more than 600 mm) a ladder belt connected to a lanyard of not more than 300 mm in length attached to a ladder fall-arrest device.

An important factor in the safe use of a fall-arrest system is to reduce the free fall distance as far as possible. Correctly installed fall-arrest equipment will only safely arrest a fall if there are no obstructions in the fall path. The longer the free fall distance, the greater the risk of the person hitting obstructions. Before a fall-arrest system is used, the work area should be inspected to

- (5) In determining the appropriate system of work for the purposes of subregulation (2)(d), consideration must be given to
- (a) if a safe working platform cannot reasonably be provided, the use of a safety harness or a pole safety belt (if appropriate), attached to a secure structural support (either directly or if that is not reasonably practicable, through the use of an adequate static-line system);
 - (b) the use of a fall-arresting device (where appropriate);
 - (c) the undertaking of training in relation to the hazards that may be encountered in the performance of the work;
 - (d) the provision of supervision by a competent person;
 - (e) the provision of assistance by another person.

ensure there are no obstructions in the potential fall path. Any obstruction should be removed from the fall path area.

Immediate action should be taken to retrieve persons from fall arrest systems.

Fall arrest harnesses, lanyards and static lines provide a satisfactory degree of fall protection provided the following points are taken into account:

- ◆ Persons should be properly trained and supervised in the use of the equipment.
- ◆ Persons using fall protection such as a fall-arrest harness, should not work in isolation.
- ◆ A lanyard assembly should be as short as possible and the working slack length not more than 2m when used in conjunction with a fall-arrest system to minimise the pendulum effect (belaying).
- ◆ The fall-arrest anchorage point (fixed or travelling on static lines) should be located so that the lanyard can be attached before the user moves into a position where he or she would be at risk from a fall. Anchorage points should have a force capacity of 15kN.
- ◆ The components of a fall-arrest system should be compatible. The use of non-compatible components should lead to ineffective equipment that present a risk of injury from falling to the person using the equipment.

The following points describe the different components of a fall arrest system:

- ◆ A fall-arrest harness is an assembly of interconnected shoulder and leg straps, with or without a body belt designed to spread the load over the body and to prevent the wearer from falling out of the assembly.
- ◆ A lanyard is a line used, usually as part of a lanyard assembly, to connect a fall-arrest harness to an anchorage point or static line.
- ◆ A lanyard assembly consists of a lanyard and a personal energy absorber.
- ◆ The lanyard assembly should be as short as practicable and the working slack length not more than 2m.

(6) Without derogating from a preceding provision of this regulation, if

- (a) a person carries out maintenance work on a structure; and
- (b) the person must work in an elevated workplace; and
- (c) it is reasonably foreseeable that the person would be injured if he or she fell due to the distance of the fall, reasonable protection against any fall must be provided
- (d) by the use of a building maintenance unit installed by a competent person; or
- (e) by the use of scaffolding or another type of working platform; or
- (f) if compliance with paragraph (d) or (e) is not reasonably practicable by the use of a safety harness attached to a safety line that is in turn attached to an appropriate anchorage (taking into account the situation of the work and the construction of the building).

LADDERS

Ladders should be designed in accordance with:

- ◆ AS 1892.1 - Portable Ladders Part 1 - Metal
- ◆ AS 1892.2 - Portable Ladders Part 2- Timber
- ◆ AS 1657 - Fixed platforms, walkways, stairways and ladders - Design, construction and installation
- ◆ designed and constructed to have a load rating of not less than 120kg and marked "industrial use only".

Portable Step-Ladders should:

- ◆ not be used on working platforms to gain height above the protected edge, for example next to floors with penetrations or the edge of the floor
- ◆ only be used in the fully opened position
- ◆ be of a length that ensures a person's feet are not positioned any higher than the third highest tread.

Portable Single and Extension Ladders should be:

- ◆ be pitched at a slope of not less than an angle of 1 horizontal to 4 or of not less than an angle of 1 horizontal to 6
- ◆ extend 900 mm above the last surface where a person can gain access

and should not be used:

- ◆ in access areas or within the arc of swinging doors
- ◆ on working platforms to gain height above the protected edge
- ◆ to support a working platform.

If a series of ladders are used to gain access to a surface, landing platforms should be provided at every 6m interval. The ladder should be secured against movement and supported from a firm, level, non-slip surface.



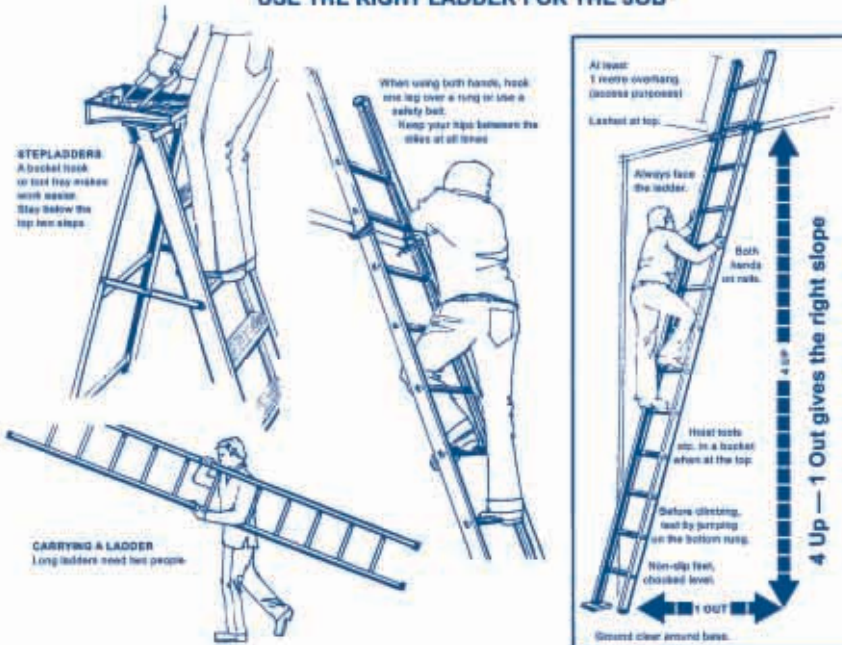
Fall arrest systems should be used by person using a ladder as a working surface.

Portable Trestle Ladders should be used only by a person painting and should only be used in the fully opened or closed position. Trestle ladders should not be used where a person can fall 4m or more.

Fixed Ladders are vertical or near vertical ladders fixed to a structure. The ladders should have ladder cages or persons using the ladder should use fall arrest systems. If a series of ladders are used to gain access to a surface, landing platforms should be provided at every 6m interval.



USE THE RIGHT LADDER FOR THE JOB



WORKING AT HEIGHTS

LIGHTING

Lighting at the workplace should be not less than:

- ◆ 200 lux for a working area,
- ◆ 50 lux for stairs or other areas providing access to a working area.

HOUSEKEEPING

Materials, tools and equipment on working platforms should be stored so as to leave at least 450mm clear access.

ACCESS

Exposure to the weather should be given consideration when establishing the area for an access way. For example, rain may make surfaces slippery or strong winds may cause loss of balance.

WARNING SIGNS

Warning signs should be erected to warn persons of the risk of falling from a height. The signs should be positioned where they will be clearly visible to persons working in the area.

PROTECTIVE CLOTHING

Footwear that minimises the risk of slipping should be worn when working where there is a risk of falls from heights. Consideration should be given to the surface being worked on. For example, a surface slippery from wet conditions.

Safety helmets should be fitted and attached to the person's head so that they remain in place should they be arrested by fall protection equipment during a fall.

FORK-LIFT WORK PLATFORMS

These are used to elevate personnel for various working activities, using the lifting ability of a fork-lift or similar industrial truck. A work platform is specially designed for mounting on the

(7) A safety harness or line supplied or used for the purposes of this regulation must be inspected on a regular basis and a harness or line that shows wear or weakness to an extent that may affect the integrity of the harness or line must not be used.

(8) An anchorage or system of anchorages must be inspected on a regular basis and, in the case of an anchorage that is permanently fixed to a structure, at least once in every six months.

(9) If the load-bearing capacity of the anchorage may be impaired, the anchorage must immediately be made inoperable so as to prevent accidental use.

elevating device of a high lift fork-truck for the purpose of providing a safe working place for personnel.

Many serious accidents and injuries occur when people fail to use a correctly designed work platform, or if they use it in an inappropriate manner. These occur either from falls, or being trapped by moving parts of the fork-lift elevating system. Standing on the fork-lift tynes, on pallets or in unsuitable stillages, are common causes of falls from height.

Design and Construction of working platforms is required to be manufactured in accordance with Australian Standard 2359, "Powered Industrial Trucks" and the safe work procedures must also comply with this Standard and the Occupational Health, Safety & Welfare Regulations.

- ◆ Work platforms must be provided with duplicate, independent locks to securely attach the platform to the fork-lift, and be clearly visible to personnel in the platform.
- ◆ The work platform must be designed only to be located on the fork-lift in the correct position.
- ◆ Work platforms shall have a slip resistant floor surface not larger than 1200mm x1200mm, and with 100mm high toe boards on all sides.
- ◆ The front and sides shall have guard rails at least 900mm high with a back guard 2000mm high with a mesh infill barrier to prevent access to any moving parts of the fork-lift lifting mechanism.
- ◆ The self-closing access gate shall be sliding or inward opening, and be securely fastened while in use.
- ◆ A warning notice visible to personnel in the work platform shall be attached to identify the load weigh limit and the two person load limit.

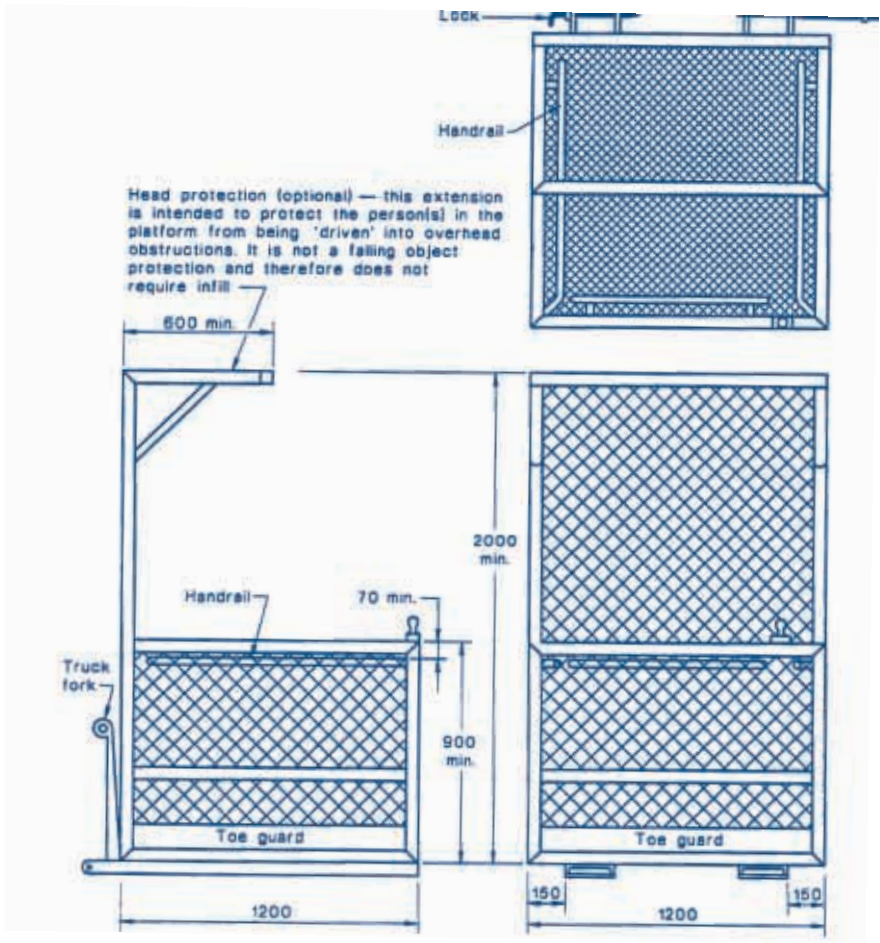
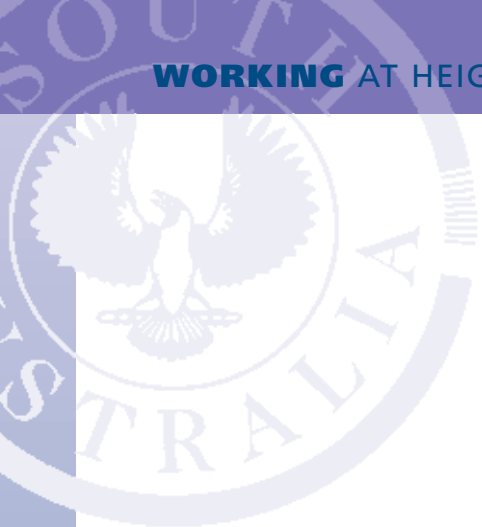
Safe Use of Work Platforms

- ◆ Prior to the use of a fork-lift, operators must be assessed as competent by a registered assessor or have proof of training/experience.
- ◆ The work platform must be secured to the fork-lift.
- ◆ The driver of the fork-lift must remain seated at the controls of the fork-lift at all times while personnel are elevated in the work platform.

(10) The following requirements must be observed in relation to the use of ladders at work, or to gain access to or egress from a workplace

- (a) a ladder must be of sound construction and maintained in a safe condition; and
- (b) a ladder must not be used in a manner that endangers the safety of any person; and

- (d) if a portable single ladder or extension ladder is used, the ladder must be
 - (i) placed so that the horizontal distance between the top support point of the ladder and the foot of the ladder is approximately one quarter of the supported length of the ladder; and
 - (ii) located on a firm footing and effectively secured in position to prevent slipping and sideways movement; and
- (e) no ladder other than a trestle ladder may be used to support planks for a working platform, and any such platform may only be used for light duty work.



- ◆ No more than two people shall be lifted in a work platform.
- ◆ Personnel shall only be carried in the work platform during raising or lowering, and must not be moved from place to place other than for small positional adjustments.
- ◆ The load capacity of the platform shall not exceed 250kg. Unless the type and design of the fork-lift is manufactured in accordance with AS 2359 and the appropriate hazard identification and risk assessment has been done.

ELEVATING OPERATOR TYPE TRUCKS

Australian Standard 2359.1 specifies the requirements for elevating operator type trucks including:

- ◆ Control systems
- ◆ Load supports
- ◆ Elevating cabins and
- ◆ Elevating load platforms.



WORKING ON FRAGILE ROOFING

The Occupational Health, Safety and Welfare Act Regulations provide for specific safety measures to be taken with fragile roofing.

Signs must be fixed to the walls of buildings where access can be made to fragile roofs. These signs should be made of sheet metal or other approved material that is at least 600mm by 450mm with wording and layout as shown.



Great care must be taken to ensure that all persons are aware of the dangers of standing or treading on unprotected fragile roofing.

Any person required to be on a roof covered with fragile roofing materials must use the walkways and crawl boards provided. Serious accidents and fatalities have occurred where workers have been misled by the appearance of roof coverings that appear more solid than they are. This is most likely to occur if the roof is discoloured with age, by weathering or from being painted.

This false sense of security may be reinforced by the fact that the roof takes substantial distributed load, and therefore gives the impression that it will bear the weight of a worker. However, a concentrated load such as that applied by the heel of a person walking or by a person stumbling and falling, and the weight of the tools and equipment a worker may carry must also be taken into account.

Fragile roofing materials fracture without warning, leaving jagged edges that can cause injury, even though wire mesh may be fitted. Experience has shown breakages occur so rapidly that a person falling through fragile roofing materials such as asbestos-cement sheeting have no opportunity to save themselves.

If you are unsure whether safety mesh is fitted, then consider the roof as unmeshed and dangerous.

Walking is not permitted on any roof unless crawl boards or grids are laid across the purlins and where advisable, screwed into position. Where it is necessary to cross the roof crawl boards must be used.

Alternatively, planks should be laid across the full pitch of the roof and in the box gutters to provide lengthwise access. Suitable footwear must be worn when working on or near fragile roofs to avoid slipping.

Work platforms provide a permanent or temporary surface for people to carry out work.

The platform should be secured against uplift or displacement to a structure and be installed with an edge protection system. The area of the working platform should be of a size and strength to safely support the tools, materials and people who may be working on it.

When using a working platform:

- ◆ Platforms supported by a crane or hoist that are designed for the carrying of materials, should not be used for carrying people. For example, a lift box.
- ◆ A person's body should not protrude from the confines of the working platform while it is moving. For example, a mast climber.
- ◆ Working platforms should not be used in wind conditions that may result in the working platform becoming unstable. For example; a boatswain's chair or work boxes.
- ◆ Working platforms should not be less than 450mm in width or length.
- ◆ Plant used to support working platforms should be used in accordance with the designer and/or manufacturer's instructions. For example, an elevated working platform.

Different types of working platforms include:

- ◆ Working platforms on scaffolds consist of planks or prefabricated platforms secured against uplift or displacement.
- ◆ A fall-arrest static line is a horizontal or vertical line made of metal tube, metal rod, steel wire rope and synthetic webbing or synthetic rope, for a ladder fall-arrest system. The line is connected to a fixed anchorage point at each end, to which a lanyard can be attached.
- ◆ A personal-energy absorber is used in conjunction with a fall-arrest harness and lanyard to reduce the deceleration force imposed by a suddenly arrested fall and correspondingly reduces loading on the anchorage. The energy absorber may

(11) In this regulation "structure" means a permanent structure (including a building).

* * * * *

NOTE: The following standards and publication are approved codes of practice under the Act and are relevant to the subject-matter of this Division:
AS 1418: SAA Crane Code Part 10 Elevating Work Platforms
Part 13 Building Maintenance Units
AS 1576: Scaffolding Parts 1-4
AS 1657: Fixed Platforms, Walkways, Stairways and Ladders
AS 1891: Industrial Safety Belts and Harnesses
AS 1892: Portable Ladders
AS 2626: Industrial Safety Belts and Harnesses Selection, Use and Maintenance
The Approved Code of Practice for the Safe Erection of Structural Steelwork

be a separate item or included as part of the lanyard.

- ◆ A ladder belt is a belt connected to a lanyard, then attached to a ladder fall-arrest device.
- ◆ A ladder fall-arrest device is one that travels along a fall-arrest static line parallel to a ladder and locks to the line when loaded. The device can only be loaded in the direction of the line.

CONTROL METHODS TO 'CATCH' a person after they have fallen should only be used where it is not possible to provide any other more reliable means of fall protection. For example, the erection of physical barriers, or personal protection systems. Control measures which "catch" a person after the person has fallen are:

- ◆ catch platforms and
- ◆ safety nets.

RISK MANAGEMENT

Risk management is the process of finding out what can cause an injury, deciding what could happen as a result and doing something about it.

The steps of risk management are:

- ◆ identify the hazards
- ◆ assess the risks
- ◆ determine and implement control measures
- ◆ monitor and review the effectiveness of the control measures.

IDENTIFYING THE HAZARDS

Identify Hazards prior to commencing work. There are a number of ways to identify potential sources of injury. The selection of the appropriate procedure will depend on the type of work processes and hazards involved.

Consultation with workers is one of the easiest and most effective means of identifying hazards. Based on their experience with a job, workers are usually aware of what can go wrong and why. Specialist practitioners and representatives of industry associations, unions and government bodies may be of assistance in gathering health and safety information relevant to falls from heights.

Factors that can cause a person to fall include:

- ◆ sudden acceleration or deceleration
- ◆ moving from one surface to another
- ◆ the capability of the surface to support the load
- ◆ openings or holes that are not identified or protected
- ◆ open edges that are not protected
- ◆ change of levels
- ◆ loss of hand grip
- ◆ slippery surfaces (eg surfaces are wet, polished or oily)
- ◆ unsuitable footwear
- ◆ equipment, tools, or rubbish obstructing work areas
- ◆ incorrect use of ladders
- ◆ clothing 'catching'
- ◆ moving surfaces
- ◆ unsatisfactory lighting
- ◆ bad weather conditions (eg heavy rain or wind)
- ◆ being struck by moving or falling object and
- ◆ lack of, or incorrect use of fall-arrest systems and devices not provided or are used incorrectly.

ASSESSING THE RISK

Risk Assessment allows appropriate control measures to be developed. Once hazards have been identified, they should be assessed in terms of their potential to do harm.

To assess risk, consideration should be given to the:

- ◆ likelihood that harm will occur and
- ◆ severity of the harm should it occur.

Various techniques can be used to carry out a risk assessment.

The 'Risk Assessment Calculator' is an example of one technique that can be used to assess risk.

Factors to consider when assessing the likelihood and severity of risk include the:

- ◆ potential sources of injury and illness
- ◆ number of people who may be exposed
- ◆ location of the work area
- ◆ location of access routes
- ◆ type of work to be carried out
- ◆ work practices in use

- ◆ scheduling of work
- ◆ type of plant, machinery and equipment and
- ◆ training and experience of the people carrying out the work.

CONTROLLING THE RISK

Risk Control is the process of eliminating or reducing the risk factors. Control measures should be chosen and implemented to eliminate or reduce the risks as far as possible.

When deciding on the most appropriate measures to use, practicability and acceptance of the control measures should be considered.

The most effective ways of managing the risk of injury from falls from heights at a workplace, listed in order of effectiveness, are:

- ◆ Eliminate the hazard
- ◆ Minimise the risk
 - > substitute the material or process with a less hazardous one
 - > modify the system of work or equipment
 - > isolate the hazard
- ◆ Provide “back-up” controls
 - > adopt administrative controls so the time or conditions of exposure to the risk is reduced
 - > use personal protective equipment.

Monitor and Review of Control Measures

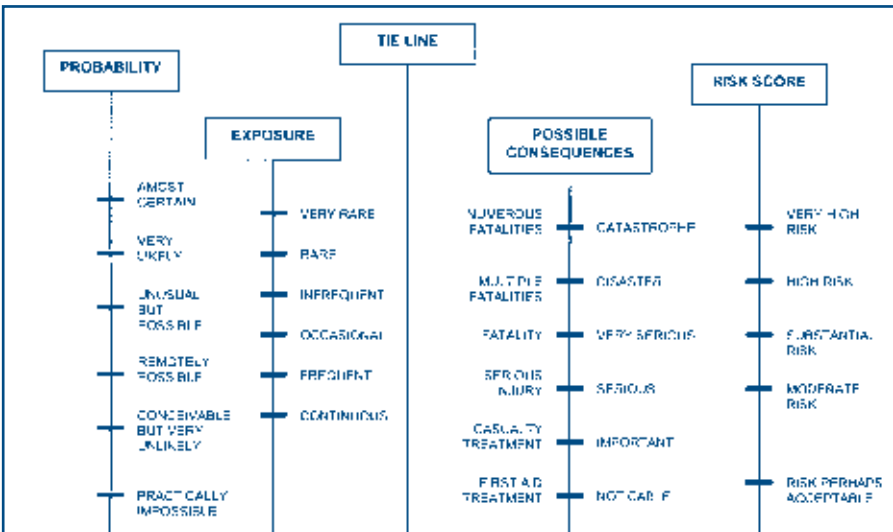
The risk management process requires regular monitoring to ensure the control measures that have been implemented have performed as intended. Regular reviewing also ensures that the risk management process continues to prevent or adequately control the risk of injury from falls from heights.

A written record that details when control measures were last reviewed should be kept.

The ‘Risk Assessment Calculator’ is a technique/tool that can be used to undertake a risk assessment. It is intended as a rapid guide to identify the level of risk.

To use the 'Risk Assessment Calculator':

- ◆ Select the appropriate point on the probability scale.
- ◆ Select the appropriate point on the exposure scale.
- ◆ Draw a line between the points chosen on the probability and exposure scales. Extend the line so that it intersects with the tie line.
- ◆ Select the appropriate point on the possible consequence scale.
- ◆ Draw a line from the point on the tie line to the point on the possible consequence line. Extend the line to the risk score scale.



The risk score obtained can then be used to make a judgement about whether the level of risk is acceptable or not. However, the risk score should only be used as a basis for reasoned judgement about a risk. It should be interpreted with caution, as it has certain limitations. For example, it is not possible to describe complex human behaviour by numerical means.

If the score falls between very high risk and risk perhaps acceptable, the risk must be reduced to the lowest possible level.

HEIGHT SAFETY CHECKLIST

The existence of any of the following risk factors indicates the need for further assessment or site visit/referral.

Work at height

1. Is work carried out at a height where a person could fall?
YES NO
2. Are fixed ladders in use at the workplace?
YES NO
3. Are portable ladders in use?
YES NO
4. Is scaffolding in use?
YES NO
5. Are elevated work-platforms used in the workplace?
YES NO
6. Are fixed walkways installed?
YES NO
7. Does an accredited person erect scaffolding?
YES NO
8. Are safety lines and harnesses provided?
YES NO
9. Are safety lines and harnesses inspected on a regular basis?
YES NO
10. Are elevated work-platforms maintained and serviced on a regular basis?
YES NO

AUSTRALIAN STANDARDS RELEVANT TO THE CONTROL MEASURES IN THIS DOCUMENT:

- Australian Standard Title
- AS/NZS 1576 Scaffolding
- AS/NZS 4576 Guidelines for scaffolding
- AS 1418 Cranes (including hoists and winches)
- AS 1657 Fixed platforms, walkways, stairways and ladders - Design, construction and installation
- AS/NZS 1891 Industrial fall-arrest systems and devices
- AS 1892 Portable ladders
- AS 1319 Safety signs for the occupational environment
- AS/NZS 2210 Occupational protective footwear
- AS 1801 Industrial safety helmets
- AS 2550 Cranes - Safe use.

WORKPLACE SERVICES

For further information when considering your working at heights needs contact Workplace Services for information or advice.

WORKPLACE SERVICES

Call us on
1300 365 255

Adelaide Office

Level 3, 1 Richmond Road
KESWICK SA 5035

Visit our website

www. **Eric** .sa.gov.au

Statewide Emergency

Serious accidents and incidents report number
1800 777 209 (24 hour service)

