



The Building

Construction Industry

Productivity through Safety

Industry Guide
Safe Work at Heights:
Evaporative Air-conditioning
Systems

February 2003

SAFER
INDUSTRIES



Industry Guide for Safe Work at Heights

**Evaporative
Air-conditioning
Systems**

Preface

Safer Industries is a South Australian WorkCover Corporation initiative created to involve all industry stakeholders in a forum for the improvement of health and safety at the workplace.

As part of the Building Construction Industry OHS&W Committee's strategy to address areas of high risk it was agreed that the creation of appropriate industry guidelines for safe work at heights was a priority.

Together, the two South Australian leading manufacturers of evaporative air-conditioning systems, Seeley International Pty Ltd and Climate Technologies Pty Ltd, recognised the need of such a guideline for their industry.

It was further agreed that related guidelines, existing in other states of the Commonwealth and operating effectively, could be utilised in the development of a similar resource for South Australia.

Accordingly, the Working Party utilised where appropriate the structure and technical content of the WorkCover Authority of NSW Code of Practice, Safe Work on Roofs, Part 1 Commercial and Industrial Building 1993.

The Objectives of this Industry Guide are to:

- provide manufacturers, employers, employer and employee associations and their members with an industry specific guideline
- contribute to the development of consistent high standards for safe work in the construction industry that is conducive to best practice at the workplace.

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- The use of material from WorkCover NSW
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Disclaimer

Information provided in this publication has been prepared by industry representatives and is designed to address the issues of safe working at heights associated with evaporative air-conditioning systems. This publication is correct at the time of printing and is provided as general information only. In utilising general information about workplace health and safety, the specific issues relevant to your workplace should always be considered.

This industry guide, on any particular aspect of legislation, is not to be taken as a statement of law and must not be construed to waive or modify any legal obligation.

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I. Introduction

I.1 Purpose

This Industry Guideline sets out practical guidelines to assist in ensuring the safety and health of persons engaged in work on evaporative air-conditioning units whilst at heights.

I.2 Scope

This Industry Guideline covers the planning, preparation and conduct of work for the installation and maintenance of evaporative air-conditioning units at height.

I.3 Endorsement

This Industry Guideline has been developed and endorsed by the South Australian Building Construction Industry OHS Committee under WorkCover Corporation's SAfer Industries program.

2. Planning and Preparation

The first essential step to ensure work is conducted safely is to plan and prepare for it to be done safely. Planning and preparation should involve consultation with all persons engaged in the work, including worker representatives.

2.1 The SAFER Approach

The SAFER Approach needs to be applied as early as possible in the design and planning stage. This will ensure safety considerations are factored into the initial project design and not added later.

The SAFER Approach: See it, Assess It, Fix It, Evaluate It and Review It. Although employers have the primary responsibility for providing a safe workplace, the most effective means of doing this is for employers and workers to work together using the SAFER approach.

See it – identify the hazards

A hazard is anything that may cause injury or illness. Plant and machinery, chemicals, noise and electricity are some examples. Less obvious hazards include the way we organise and do our work, workplace design, how we lift and move things or how we work on roofs. Take a good look at your workplace – employer and worker working together is best – to make a list of the hazards. Watch out especially for the things everyone has ‘worked around’ for years.

Assess it – assess the risk

The risk relates to the likelihood that someone will be hurt, made ill, or dies due to exposure to a hazard and also how bad the resulting injury or illness might be. You have to work out how a person will be exposed, how much, how long and how often.

This should lead to one of the following conclusions:

- no risk exists

- there is a possibility of risk, but adequate control measures are in place
- a risk exists and something needs to be done now to control it
- more information or assistance is needed before making a decision.

Fix it – control the risk

Now it's time to do something about the problem. The OHS&W Regulations outline a hierarchy of controls, the following examples are provided to assist selecting the most appropriate control for your specific situation, some or all of these controls may be needed:

- it is best to **eliminate** the hazard altogether – for example by replacing faulty wiring or a missing safety rail, or removing a dangerous item
- **substitution** – replace the hazardous process with a less hazardous process, eg use a cherry picker rather than a ladder
- **modify** the work practice with a safe **engineering** control – modify tools and equipment, enclose it, or put in guards
- **administrative** control – introduce alternative ways of working to minimise exposure to the risk by the development and use of work instructions
- **personal protective equipment** – footwear, safety glasses or hearing protection are important.

Evaluate It – does the Fix work?

Once the hazard has been fixed then it is important that there be an evaluation of the success of the hazard fix. Has the hazard been eliminated or reduced?

Review It

There is also an ongoing review task, which will form the basis for regular inspections. These inspections will re-visit this process from the start when the work environment, work practices or equipment changes.

Don't stop there

Anything that avoids the shock, distress, morale and productivity blow of a workplace-related injury or illness is an investment in your workplace.

By working together, and making health and safety our business, we can all get on with the job and enjoy safe work. After all, if you don't talk about health and safety in your workplace, who will?

2.2 Planning by system designer

System designer is defined as 'the person who undertakes the design, layout, sizing and location of the installation of the system'.

The design of the air-conditioning system including the placement of the air-conditioning unit, the location and placement of the ductwork and the outlets must take into account whether the work practices necessary to carry out the installation and maintenance of the designs are safe. Two scenarios can be considered:

2.2.1 Building: Under Construction

- Undertake Risk Assessment (refer centre pages of this handbook).
- Provide anchorage points for static lines, inertia reel lines (refer Section 3.4.a for legal requirements).
- Ensure likely load bearing requirements are met.
- Ensure safe access for maintenance (refer to Section 9 for legal requirements).
- Consider the proximity of power lines.

2.2.2 Building: Existing

- Undertake Risk Assessment (refer centre pages of this handbook).
- Provide anchorage points for static lines, inertia reel lines (refer Section 3.4.a for legal requirements).

- Ensure likely load bearing requirements are met.
- Ensure safe access for maintenance (refer Section 2.4 for legal requirements).
- Consider the proximity of power lines.
- Consider type of roofing material.
- Consider pitch of roof.
- Ensure suitable access for equipment.
- Check for special health and safety issues if fragile roof materials are encountered, or if the work involves removal of asbestos cement sheets. OHS&W Regulations 1995, Division 4.2, Asbestos, contain specific requirements for the removal of asbestos products.

2.3 Planning by installer

When planning the on site works and sequence of installation (eg mechanical services, plumbing, electrical supply) the installer should undertake a risk assessment and consider such factors as:

- The number of people on the roof at any one time.
- Access for both personnel and equipment to the roof area, including provision and placement of ladders, cat walks and guardrails at openings and the perimeter.
- Preparation of a firm level surface below the work area, including the perimeter, to facilitate any use of ladders, scissor hoists or mobile scaffolds.
- Availability or provision of anchorage points for static lines or inertia reel lines.
- The most appropriate method of preventing falls by workers carrying out:
 - the roof work – eg re-laying the roof sheets
 - accessory work – eg penetrations
 - manual raising or lowering of materials, tools and equipment.

- Provision of personal protective equipment for sunlight (eg for glare), heat or cold.
- Assessment of manual handling tasks which could cause back strains and other injuries.
- Provision of safe access including elimination of trip and slip hazards.
- Electrical safety, including the location of nearby power lines, maintenance/testing of electrical plant and systems of work which comply with the South Australian OHS&W Regulations 1995, Division 2.5 – Electrical.
- Positioning of materials to minimise the need for installers to lift or carry them to the installation area.
- Special health and safety issues if fragile roof materials are encountered or the work involves removal of asbestos cement sheets. South Australian OHS&W Regulations 1995, Division 4.2 – Asbestos contains specific requirements for the removal of asbestos products.
- Special health and safety issues when insulation of an unknown or known hazardous type is encountered.
- Location of power supply throughout the roof space.
- Contingency plans in the event of an emergency, eg fire or the need to remove an injured or sick worker from the roof.

2.4 Planning for maintenance

When planning on site maintenance work, the maintenance contractor should undertake a risk assessment, consider all of the aspects listed under installation and consider other factors such as:

- The competence of the personnel carrying out the maintenance task.
- The number of personnel necessary to undertake the task in a safe manner.
- The availability of the correct equipment.

- Accessibility of equipment to the area in which the maintenance is to be undertaken.

2.5 Preparation

Installers, maintenance personnel and any other contractor or persons required to work on roofs should ensure the workplace and access to and egress from the workplace are safe before work starts, including:

- Assessment of wind and weather.
- Organisation of:
 - fall prevention equipment
 - crane placement schedule
 - access/egress
 - personal protective equipment on site
 - specific instructions for the workers
 - protection of portable electrical plant by Residual Current Devices (RCD's)
 - means of rescuing persons from safety harnesses following arrested falls.
- Inspection of existing roofs for:
 - integrity of existing safety mesh
 - structural soundness, including inspection from below
 - fragile roofs or fragile panels in solid sheet roofs (including identifying and highlighting them).

3. Work practices and preventive measures

3.1 Prevention of falls

Provision should be made to prevent persons falling if work is to be carried out on a new or existing roof from which any person could fall causing injuries due to the distance fallen (South Australian OHS&W Regulations 1995, Division 2.13 – Prevention of Falls).

The method selected is generally determined by individual job factors including the nature of the work, availability of equipment and interaction with other trades.

The need to minimise the risk of falls and the risk of injury when a fall occurs should also be taken into account when selecting protective measures.

The recommended method is the use of guardrails or perimeter scaffolding. Other available methods include individual fall arrest systems, scaffolding and safety nets or a combination of these methods.

These other methods should only be used if the recommended method cannot be used.

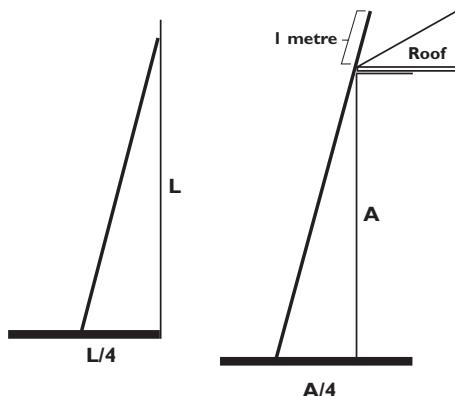
3.2 Access

The person who is in control of a workplace is responsible for ensuring that the access from the ground to the work area on the roof is safe and without risk to health.

Access requirements should take into account any tools and equipment the worker may be required to carry to and from the work site. Mechanical lifting aids should be provided where appropriate.

3.2.1 Ladders

- If temporary ladders are used for access:
 - ladders should be industrially rated and meet the requirements of AS 1892 Parts 1 & 2 Portable Ladders
 - ladders should have non-slip feet, be placed on a firm stable area and be tied/secured at the top to prevent movement
 - if it is necessary to work in the vicinity of 415V powerlines, a ladder must be positioned such that persons using it will always remain at least 1 metre away from the power lines. Care must be taken when positioning the ladder to ensure that it does not come into contact with the powerlines. (For exact clearances contact ETSA utilities or ElectraNet SA). Metal or ladders with wire bound styles must not be used whilst working on, or near, any live electrical equipment
 - access to the work site from the ladder or landing platform must be arranged so as to eliminate the risk of injury. Pay special attention to any openings or potential weak spots in the roofing structure or material.
- The recommended angle for use of extension ladders should be 4 meters vertical for every 1 metre horizontal.



- The last rung used before access to the roof must be a minimum of third rung / tread from the top rung or 1m from the top of the ladder.
- Any single extension ladder in excess of 15 meters in length should not be used.
- Where access to a roof is between 6 and 15 meters above the ground, a ladder access tower is recommended. Consider suitable alternative access when working above 15 meters
- Both hands should be used to ascend and descend and always face the ladder when doing so.
- Only one person on a ladder at one time.
- Hand tools and other items should be carried up in a tool belt or passed up separately eg using a rope and bucket.

3.3 Brittle and fragile roofs

- Before carrying out air-conditioning installation or maintenance on a roof containing brittle or fragile materials, the employer or person in control of the work should:
 - inspect the under-side of the roof to determine the extent of fragile roof material, existence of any safety mesh, and the structural soundness of the roof and safety mesh
 - provide temporary walkways where any person is required to work on or use as a means of access any part of the roof sheathed with brittle material and where permanent walkways are not provided

The walkways should be at least 450 mm in width for persons and hand tools only, and 675 mm in width for persons and materials, and should incorporate a guardrail.

If the slope of the roof exceeds one vertical to six horizontal, timber cleats of not less than 50 mm by 12 mm should be fixed

**INSTALLATION, SERVICE AND MAINTENANCE OF
DOMESTIC AND COMMERCIAL EVAPORATIVE AIR-CONDITIONERS AT ROOF LEVEL
Site Risk Assessment**

Customer:		Address:
Type of Building, House / Unit / Shop / Offices / Hotel / Factory / Other		No. of Stories
Employees Name	Signature	Date
Reason for Access		

	Yes	/	No	Comment
• Site Inspection required before installation/service	<input type="checkbox"/>		<input type="checkbox"/>	
• Access will be by ladder and/or Elevated Work Platform	<input type="checkbox"/>		<input type="checkbox"/>	
• Can ladders be secured?	<input type="checkbox"/>		<input type="checkbox"/>	
• Any anchorage points on roof to secure safety line/fall arrest system / full harness.	<input type="checkbox"/>		<input type="checkbox"/>	
• Safe Footing. Are the roof surfaces slippery due to Moisture or Verdigris/Mould	<input type="checkbox"/>		<input type="checkbox"/>	
• Is any assistance needed to gain access or to lift tools, spares or Unit onto the roof level.	<input type="checkbox"/>		<input type="checkbox"/>	
• Is the access considered to be acceptable?	<input type="checkbox"/>		<input type="checkbox"/>	
• Electrical Safety: Proximity to Power Cables etc. Portable electrical tools checked for RCD protection.	<input type="checkbox"/>		<input type="checkbox"/>	
• Height from exposed edge to ground floor level				Approx. _____m

COMMENTS: _____
 _____ Date ___/___/___

NOTE : Access to roofs requires the wearing of suitable footwear, having good non slip soles. If suitable anchorage points are available, the use of a full harness and safety line / fall arrester should be worn as per AS/NZ1891.2. Certain sites will require the attendance of 2 personnel, due to the height of ladders, inadequate ladder securing points, difficulty in getting tools/spares up to the roof height.

RISK ASSESSMENT

A risk assessment of all hazardous tasks is required under the legislation. There is no need for this to be a complicated process, it is just a matter of looking at the job to be done and considering where it would be possible for the person doing the job to injure themselves. This should then be considered in terms of :

- What are the chances of this happening?
- What could the possible consequences be?
- What can we do to reduce or better still, completely get rid of this risk?

Some points to consider:

- ✓ What is the best and safest access to the roof and working area?
- ✓ If worker is alone, who knows they are there and if they get into difficulty, how can they get help? (Call someone on the ground? Mobile phone?)
- ✓ What condition is the roof itself in? Should we check the trusses and underside?
- ✓ Does the worker have appropriate footwear? (Flat sole jogger type is advisable)
- ✓ Are all ladders, tools and equipment in good order?
- ✓ Where temporary ladders are to be used is there a firm stable base for them to stand on? Can they be tied or secured in some other way at the top?
- ✓ Is there a roof anchor to attach a harness and lanyard to? If so workers should attach using an approved harness and ropes as soon as they get on to the roof.
- ✓ Are all tools and the materials being used, prevented from slipping and/or falling on to a person at ground level? Is the area below the work area fenced off to prevent persons walking in this area?
- ✓ Are workers attentive to what they are doing at all times? Where possible, walking on the main roofing supports? Avoiding valleys, hip and ridge capping on tiled roofs?
- ✓ Does the work schedule take into account weather conditions allowing for work to be suspended in high winds, thunder storms/lightning or other extremes of weather or wet, slippery roofing?
- ✓ Is there an on-going safety check system of harnesses, ropes, ladders, cherry pickers (especially those which are hired in) and where they exist on roofs, anchor points and anchors, which occurs regularly and particularly before work starts?

to the topside of the walkway planks and spaced no more than 350 mm apart, centre-to-centre. The walkway should be adequately secured

- provide individual fall arrest systems including anchorages for any person working on or near any brittle roof sheathing or from roof ladders, wherever safety mesh, safety nets or similar fall protection has not been provided
- while engaged in the work, persons should only walk or stand over the purlin line.
- Safety harnesses should be worn by all personnel engaged in the work if:
 - there is a risk of a fall
 - the roof is not provided with permanently installed safety mesh.

3.4 Guardrails

- Guardrails are an acceptable form of fall prevention and if used must be installed prior to the commencement of work.
- Guardrails must be installed by competent personnel, in accordance with the relevant codes, standards and practice.

3.5 Scaffolding

- Scaffolding can provide effective protection against falls at the perimeter of the building.
- If a mobile scaffold is used, position the platform as close as practicable to the underside of the roof.

3.6 Individual fall arrest systems

The various parts of independent fall arrest systems and safety harnesses should be compatible. Compatibility should not be taken for granted. It is therefore essential to ensure that all components are compatible and fit safely together. Components from different

manufacturers may be unsafe when used together and may lead to failure of the fall arrest system.

Be aware that the use of individual fall arrest systems may restrict workers' movements.

Lanyards and safety lines can be a trip hazard.

Safety harnesses with a shock absorber should be attached by an individual fall arrest device to a static line positioned above the ridgeline. These should not be used on single story buildings.

- **Anchor points**

The strength requirements for anchorage points of fall arrest devices vary dependant upon the type of fall arrest device employed in the task. These are specified in 'Characteristics of various restraint/fall situations' in Australian Standard 1891.4:2000 'Industrial fall-arrest systems and devices – Part 4 Selection use and maintenance', Table 2.1.

Section 3 of that Standard outlines the design requirements of anchorages and Section 9.3.3 outlines the inspection requirements.

- **Safety harnesses and lanyards**

- Fall arrest systems should be designed so that a person equipped with a parachute safety harness cannot fall more than 2m.
- Safety harnesses and lanyards can be used as travel restriction systems to prevent workers moving from safe to unsafe areas on the roof.
- Use body harnesses of the parachute type connected to the lanyard or lifeline at the top dorsal position. If a lifeline and rope-grab device is used on steeply sloping roofs, the user needs the device in front in order to manually operate the mechanism.

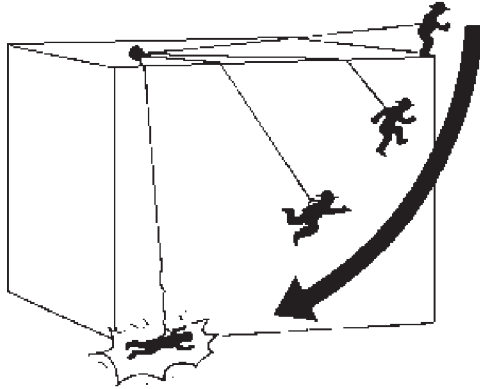
Do not use waist type belts as they are not designed for free or restrained fall.

- There must be a minimum of slack in the lanyard or safety line, between the person and attachment to the anchorage.
 - Lanyards must have a minimum of tensile strength of 15kN as per AS/NZS 1891 Industrial fall arrest systems and devices – Part 1: Safety belts and harnesses & Part 4: Selection, use and maintenance.
 - Do not connect snap-hooks to each other.
 - Do not use lanyards in conjunction with inertia reels.
 - Workers using safety harnesses must not work alone because a worker suspended in a full body harness should be rescued as soon as possible and within 10 minutes of the arrested fall to reduce the effects of suspension trauma.
 - Appropriate rescue equipment to be provided to ensure a quick and safe rescue in the event of a fall.
 - Harnesses and lanyards should comply with the relevant Australian Standards.
- **Inertia reels and safety lines**
 - Inertia reels and safety lines used should meet the requirements of AS/NZS 1891 – Parts 1,2 & 3.
 - They should be selected, used, installed and maintained according to the requirements of Part 4, by suitably competent personnel.

- **Pendulum effect**

This is a potential hazard connected with the use of individual fall arrest systems. It can occur during ‘swing down’ and ‘swing back’. The pendulum effect may also occur within the interior of the roof if the positioning of the inertia reel allows for a significant length of unsupported line connected to the user.

Pendulum effect



Following an arrested fall at this extreme diagonal the inertia line moves back along the roof, dropping the worker dangerously down to the ground.

4. Electrical Supply

All electrical supply and connections should be installed in accordance with Australian Standard AS 3000 'SAA Wiring Rules' and be carried out by a suitably 'competent person' as defined by the South Australian OHS&W Regulations – Regulation 2.5.2(2).

5. Water Supply (Plumbing)

All water supply and plumbing connections should be installed in accordance with Australian Standard AS 3500 'Plumbing' and be carried out by a suitably 'competent person' as defined by South Australian OHS&W Regulations – Regulation 2.5.2(2).

6. Personal protective equipment (PPE) and clothing

6.1 Provision of PPE

Before starting work, an assessment must be made of the conditions likely to affect the health and safety of the worker. Arrangements must be made for the provision and use of appropriate PPE. The following points need to be considered:

- **Footwear**

To reduce the risk of falls resulting from slips, safety footwear with rubber soles and herringbone or similar non-slip tread pattern, are recommended for work on roofs.

- **Eye protection**

If the work involves the use of metal cutting discs or grinders, eye protection complying with AS 1337 – ‘Eye Protectors for Industrial Applications’ should be provided and used.

Suitably tinted safety glasses complying with AS 1337 ‘Eye protectors for industrial applications’ should be provided and used to reduce glare in bright conditions. The glasses should be of a type that do not easily dislodge when the wearer bends over and should have lenses big enough to reduce side glare.

- **Sunburn/ Heat Exposure prevention**

The exposed parts of the body should be protected by a sunscreen with a minimum SPF (sun protection factor) rating of 30+.

Access should be available to a supply of drinking water.

There should be sufficient supervision and monitoring conducted to ensure that workers are not over exposed to strong sunlight, including reflection of light from the metal roof.

- **Clothing**

Clothing should be comfortable in all positions of standing, bending, and crouching and be suitable for the work being done and the

weather conditions. Loose clothing or equipment, which may snag or create a trip hazard, should be avoided.

Long sleeved shirts, long pants and a wide brimmed hat should be worn in all weather (on Construction sites where it is a statutory requirement to wear a hard hat, these can be fitted with a slip over brim). The exposed parts of the body should be protected by a sunscreen with a minimum SPF rating of 30+.

- **Maintenance of PPE**

The employer must ensure that all personal protective equipment provided for workers' use is regularly inspected and replaced as necessary. Fall arrest systems and devices must be inspected as per AS/NZS1891.4 Industrial fall-arrest systems and devices – Part 4: Selection, use and maintenance.

- **Special situations**

If work is to be carried out on roofs involving or near hazardous materials (eg asbestos removal or airborne hazardous chemicals), the employers should consult with their workers and an appropriate organisation to determine the most suitable personal protective equipment and any other control measures that may be necessary.

In South Australia when planning work in these situations the employer should contact WorkCover Corporation or the Department for Administrative and Information Services – Workplace Services about any OHS&W Regulation, Approved Code of Practice or special requirements relating to the specific situation.

7. Training and supervision

Section 19 of the SA Occupational Health, Safety & Welfare Act 1986 requires employers to provide information, instruction, training and supervision to workers necessary to enable them to perform their work in a manner that is safe and without risks to health.

7.1 Training

The training and instruction given should cover at least:

- The work method to be used in lifting, positioning, installation and maintenance of air-conditioning units, including access methods.
- The methods to be adopted to prevent falls.
- The correct use, care and storage of individual fall arrest equipment as required by AS/NZS1891.4 Industrial fall-arrest systems and devices – Part 4: Selection, use and maintenance, and safety nets.
- The correct use, care and storage of personal protective equipment.
- The correct use, care and storage of tools and equipment to be used, including electrical safety.
- Procedures to be adopted in the event of accident or injury.

7.2 Supervision

Supervision should:

- Ensure that only those workers who have received training and instruction are authorised to carry out the work.
- Include sufficient monitoring of the work to ensure that the agreed safe work practices are being adhered to, including the use of all protection systems and PPE.

8. Risk Assessment

All tasks associated with the installation or maintenance of the air-conditioning unit should be the subject of a risk assessment. A sample risk assessment tool is supplied in the centre pages of this document.

9. Legal Requirements

9.1 Employers' responsibilities

The installation and maintenance of evaporative air-conditioning units at heights requires compliance with Acts and Regulations relating to occupational health and safety. Compliance applies to work practices, equipment and qualifications of workers. If any uncertainty exists, enquiries should be made at the planning stage to South Australian Department for Administrative and Information Services (SA DAIS) – Workplace Services or to WorkCover Corporation.

Acts, Regulations, Approved Codes of Practice and Australian Standards, which offer practical guidance on health and safety, are listed in Section 6.3. However these are subject to change and checks should be made with South Australian Department for Administrative and Information Services (SA DAIS) – Workplace Services or to WorkCover Corporation.

9.2 Workers' responsibilities

Section 21 of the SA Occupational Health, Safety & Welfare Act 1986 requires workers to take reasonable care for the health and safety of other persons in the workplace and to co-operate with their employer in the interests of health, safety and welfare.

The SA OHS&W Regulation 1.3.8 requires every person to use the safeguards provided and not to interfere with the use of these safeguards.

Workers must wear suitable clothing and use the appropriate protective equipment for the work being done.

9.3 Statutes, Approved Codes of Practice and Australian Standards

- **South Australian Statutory provisions**

Occupational Health, Safety & Welfare Act 1986.

Occupational Health, Safety & Welfare Regulations 1995.

- **South Australian Approved Codes of Practice**

Manual Handling

Occupational Health & First Aid

Asbestos Work

- **Australian Standards**

AS1319 Safety Signs for the Occupational Environment

AS1337 Eye Protectors for Industrial Applications

AS1576* Scaffolding

AS1657* SAA Code for Fixed Platforms, Walkways Stairways and Ladders

AS1716* Respiratory Protective Devices

AS/NZS 1891* Industrial fall-arrest systems and devices

Part 1: Safety belts and harnesses

Part 2(Int): Horizontal lifeline and rail systems

Part 3: Fall-arrest devices

Part 4: Selection, use and maintenance

AS2604–1986* Sunscreen Products – Evaluation and Classification.

AS3000* Wiring Rules

AS1892* Parts 1 & 2 Portable ladders

*This indicates those AS/NZS which have been gazetted as Approved Codes of Practice.

- **Building Construction Industry Guidelines**

Industry guideline – Safe work on Roofs, Industrial and Commercial Buildings.

Appendix

Terminology used in fall arrest systems

Individual Fall Arresting Systems (IFAS) are designed to arrest an accidental fall and consist of some or all of the following:

- anchorage
- lifeline
- fall arrester (i.e. inertia reel block)
- lanyard
- shock absorber
- harness
- retractable lifeline.

Anchorage points are secure points of attachment for lifelines and lanyards.

A fall arrest system is any device designed to minimise the length and severity of a fall.

A lanyard assembly is used to connect a safety harness to a secure anchor point when there is a risk of a free fall.

A static line is a horizontal lifeline attached to two or more anchorage points.

A fall arrester is a mechanical device that arrests a fall by locking onto the lifeline but at the same time allowing freedom of movement.

The fall distance is determined by the length of the lanyard plus the shock absorbing system attached to the harness with the free-fall distance not exceeding 2m.

A shock absorber (deceleration device) prevents a shock to the body by absorbing some of the fall energy before it reaches the end of the lanyard or safety line. A typical shock absorber consists of overlapped nylon webbing cross stitched with nylon thread that absorbs impact progressively by tearing away the nylon stitching (lanyard definition).

An anchorage is the means for attaching a lanyard, lifeline or other components to a secure point.

A snap hook is a self-closing double action hook with a keeper latch that will automatically close and remains closed until manually opened by a double action.

Breezer



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