

Compliance code

Prevention of falls in housing construction

Edition 1

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This Compliance Code (**Code**) provides practical guidance for those who have duties or obligations in relation to the prevention of falls in the housing construction industry under the *Occupational Health and Safety Act 2004 (OHS Act)* and *Occupational Health and Safety Regulations 2017 (OHS Regulations)*.

The Code was developed by WorkSafe Victoria (**WorkSafe**). Representatives of employers and employees were consulted during its preparation. It was made under the OHS Act and approved by Robin Scott MP, Minister for Finance.

Duty holders under the OHS Act and OHS Regulations should use the Code together with this legislation. This Code replaces the Prevention of falls in housing construction code of practice No. 29 of 31 March 2004, which is no longer in force and effect.

While the guidance provided in the Code is not mandatory, a duty holder who complies with the Code will – to the extent it deals with their duties or obligations under the OHS Act and OHS Regulations – be considered to have complied with those duties or obligations.

If conditions at the workplace or the way work is done raise different or additional risks not covered by the Code, compliance must be achieved by other means. WorkSafe publishes guidance to assist with this at [worksafe.vic.gov.au](https://www.worksafe.vic.gov.au).

Failure to observe the Code may be used as evidence in proceedings for an offence under the OHS Act or OHS Regulations. However, a duty holder will not fail to meet their legal duty simply because they have not followed the Code.

A WorkSafe inspector may cite the Code in a direction or condition in an improvement notice or prohibition notice as a means of achieving compliance.

A health and safety representative (**HSR**) may cite the Code in a provisional improvement notice when providing directions on how to remedy an alleged contravention of the OHS Act or OHS Regulations.

Approval for the Code may be varied or revoked by the Minister. To confirm the Code is current and in force, go to [worksafe.vic.gov.au](https://www.worksafe.vic.gov.au).

Part 1 – Introduction

Purpose

1. The purpose of this Code is to provide practical guidance to duty holders about how to comply with their duties under the OHS Act and Part 3.3 (Prevention of falls) of the OHS Regulations in relation to the prevention of falls in the housing construction industry.

Scope

2. This Code provides information for duty holders about meeting their obligations under Part 3.3 of the OHS Regulations as well as providing information about how to identify hazards and control risks associated with falls in the housing construction industry. This Code also provides information for duty holders about compliance with the OHS Act, where relevant (for example, an employer's duty to consult with employees).
3. It is not possible for this Code to deal with all risks associated with falls that a duty holder may encounter at their workplace. The guidance in this Code needs to therefore be considered with regard to the particular characteristics and circumstances of the workplace.
4. **Construction work** is any work performed in connection with the construction, alteration, conversion, fitting out, commissioning, renovation, refurbishment, decommissioning or demolition of any building or structure, or any similar activity. **OHS Regulations r321(1)** It expressly includes:
 - (a) installation, testing, maintenance and repair work performed in connection with the construction work
 - (b) the removal from the workplace of any product or waste resulting from the demolition
 - (c) the prefabrication or testing of elements at a place specifically established for the construction project
 - (d) the assembly of prefabricated elements to form a building or structure or the disassembly of prefabricated elements, that, immediately before the disassembly, formed a building or structure
 - (e) the installation, testing and maintenance of gas, water, sewerage, electricity or telecommunications services in or of any building or structure
 - (f) any work in connection with any excavation, landscaping, preparatory work, or site preparation performed for the purpose of any work referred to in regulation 321(1) or 321(2) of the OHS Regulations (ie this paragraph)
 - (g) any work referred to in regulation 321(1) of the OHS Regulations performed under water, including work on buoys, obstructions to navigation, rafts, ships and wrecks. **OHS Regulations r321(2)**

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5. Construction work does not include:
 - the assembly, disassembly, prefabrication or manufacture of fixed plant
 - the prefabrication of elements, other than at a place specifically established for the construction project
 - routine or minor testing, maintenance or repair work performed in connection with a building or structure, or
 - the exploration for, or extraction of, minerals or stone. [OHS Regulations r321\(3\)](#)
6. This Code is not specifically tailored to work in the general construction industry. The *Prevention of falls in general construction compliance code* needs to be used in the first instance for such work.

Application

7. This Code applies to employers, self-employed persons, persons with management or control of a workplace, employees and principal contractors in workplaces that are construction sites for buildings and related structures that:
 - are classified as 1, 2 or 10 of the Building Code of Australia, and
 - will be of three habitable storeys or less when completed.

Additionally, it may be useful for HSRs.

Note: The word ‘must’ indicates a legal requirement that has to be complied with. The words ‘need(s) to’ are used to indicate a recommended course of action in accordance with duties and obligations under Victoria’s health and safety legislation. The word ‘should’ is used to indicate an optional course of action.

Who has duties?

8. An **employer** is a person who employs one or more other persons under contracts of employment or training. [OHS Act s5\(1\)](#) At a construction workplace employers may include the principal contractor and subcontractors.
9. Employers have a general duty to provide and maintain, so far as is reasonably practicable, a working environment for their employees that is safe and without risks to health. [OHS Act s21](#) To ensure that employers provide a working environment that is safe and without risk to health, they must eliminate risks to health and safety so far as is reasonably practicable, and if it is not reasonably practicable to eliminate the risks to health and safety, reduce those risks so far as is reasonably practicable. [OHS Act s20](#)
10. Employers must, so far as is reasonably practicable, monitor conditions at the workplace under the employer’s management or control. [OHS Act s22](#)
11. Employers must also, so far as is reasonably practicable, ensure that persons other than their employees are not exposed to risks to their health or safety arising from the business activities undertaken by the employer. [OHS Act s23](#)

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12. The employer's duties may also extend to independent contractors engaged by the employer and any employees of the independent contractor working at the workplace. The duties may extend, for example, to subcontractors and persons engaged to work through a labour hire agency. However, these extended duties are limited to matters over which the employer has control or would have control if there was not an agreement in place purporting to limit or remove that control.
OHS Act s21(3) and s35(2)
13. Regulations that set out the way an employer complies with their duties to employees under s21 and s35 of the OHS Act also extend those employer duties to independent contractors engaged by the employer and any employees of the independent contractor in relation to matters over which the employer has control.
OHS Regulations r8(1)
14. Employers have a number of specific duties under the OHS Regulations to prevent involuntary falls from more than two metres in the workplace, including the duty to:
 - (a) identify all tasks that involve a fall hazard of more than two metres **OHS Regulations r43**
 - (b) eliminate any risk associated with a fall hazard of more than two metres, so far as is reasonably practicable, such as by arranging for the task to be done on the ground or from a solid construction **OHS Regulations r44(1)**
 - (c) where it is not reasonably practicable to eliminate the risk, adopt a means of control in accordance with the specified hierarchy, to reduce the risk associated with a fall so far as is reasonably practicable. Specific duties apply if ladders or administrative controls are used **OHS Regulations r44(2)-(5), r45 and r46**
 - (d) ensure that any plant used as a means of control for a risk associated with a fall is:
 - designed and constructed for the task(s) to be undertaken
 - designed and constructed in such a way as to enable its safe use in the physical surroundings in which it is to be used, and the conditions during which it is to be used, and
 - installed, erected or dismantled in a way that reduces any risk while that installation, erection or dismantling is being carried out, so far as is reasonably practicable. **OHS Regulations r47**
 - (e) review and, if necessary, revise any measures implemented to control risks associated with falls:
 - before altering plant or systems of work that are likely to result in a fall
 - after a notifiable incident involving a fall or the risk of a fall
 - if, for any other reason, the risk control measure does not adequately control the risk
 - after receiving a request from an HSR. **OHS Regulations r48**
 - (f) establish emergency procedures for rescue and first aid in the event of a fall occurring **OHS Regulations r49**
 - (g) ensure that high risk construction work (HRCW), including construction work where there is a risk of a person falling more than two metres, is not performed unless a safe work method statement (SWMS) is prepared before the work starts, and the work is performed in accordance with the SWMS. This duty applies if there is a risk to the health and safety of any person arising from the HRCW. **OHS Regulations r324 and r327**

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15. Employers also have general duties in relation to the prevention of falls from two metres or less under the OHS Act. **OHS Regulations r41(1) note (2)** Section 21 of the OHS Act imposes duties on employers to, so far as is reasonably practicable, provide and maintain a working environment for employees that is safe and without risks to health. This includes managing risks associated with falls of two metres or less. To ensure that employers provide a working environment that is safe and without risks to health, they must eliminate risks to health and safety, so far as is reasonably practicable. If it is not reasonably practicable to eliminate the risks, employers must reduce those risks so far as is reasonably practicable. **OHS Act s20**

For information about what 'reasonably practicable' means when complying with Part 3 of the OHS Act or the OHS Regulations, see the WorkSafe position *How WorkSafe applies the law in relation to reasonably practicable* at **worksafe.vic.gov.au**.

16. A **self-employed person** must ensure, so far as is reasonably practicable, that persons are not exposed to risks to their health or safety arising from the business activities of the self-employed person **OHS Act s24 and OHS Regulations r11** . A self-employed person has specific duties under Part 5.1 (Construction) of the OHS Regulations, including duties related to HRCW and SWMS.

17. A **person who has management or control** of a workplace must ensure that the workplace and the means of entering and leaving it are safe and without risks to health, so far as reasonably practicable. **OHS Act s26(1)** A builder is typically the person with management or control of a construction site. This duty only applies in relation to matters over which the person has management or control. **OHS Act s26(2)**
18. A **principal contractor** of a construction project costing \$350,000 or more has a duty to ensure a health and safety coordination plan is prepared before construction work commences, and that this plan is monitored, maintained and kept up-to-date during the course of the construction work. Principal contractors also have a duty to put in place signs that are clearly visible from outside the workplace, showing the name and telephone numbers of the principal contractor. **OHS Regulations r332–337**

The **principal contractor** is the owner of the workplace where the construction project is to be carried out, unless the owner has appointed and authorised another person (for example a builder) to manage or control the workplace, in which case that person is the principal contractor. **OHS Regulations r5, r333**

An **employer** is a person who employs one or more other persons under contracts of employment or training. **OHS Act s5(1)**

The principal contractor may be an employer or a self-employed person.

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Note: The duties under Part 5.1 of the OHS Regulations do not apply to the owner of domestic premises where they personally perform construction work at those premises, or where the premises become a workplace due to construction work being performed, and the owner engages another person to manage or control the workplace. OHS Regulations r320(2) and r333(2)

19. **Employees**, while at work, have a duty to take reasonable care for their own health and safety and that of other persons who may be affected by their acts or omissions in the workplace. Employees must also co-operate with their employer in relation to actions taken to comply with the OHS Act and OHS Regulations (for example by following any information, instruction or training provided). OHS Act s25

The risk management process

20. This Code outlines a **risk management process** (see diagram 1) to help employers comply with their duties under the OHS Act and OHS Regulations. It involves the following steps:

- **Identifying** fall hazards.
- **Assessing**, where necessary, any associated risks (if unsure of appropriate risk controls).
- **Controlling** risks associated with falls.
- **Monitoring, reviewing**, and where necessary, **revising** risk controls.

Note: There are certain circumstances where each step of the risk management process needs to occur, see Part 2 of this Code for further information on these duties.

Diagram 1 – The risk management process



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Consultation

21. Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on certain matters related to health or safety that directly affect, or are likely to directly affect them. This duty to consult also extends to independent contractors (including any employees of the independent contractor) engaged by the employer in relation to matters over which the employer has control (see paragraph 12). [OHS Act s35](#)

Note: The characteristics of the workplace will have an impact on the way consultation is undertaken. For example, consider:

- the size and structure of the business
- the nature of the work
- work arrangements (such as shift work)
- characteristics of employees (such as language or literacy).

For more information on consultation go to [worksafe.vic.gov.au](https://www.worksafe.vic.gov.au).

22. An employer has a duty to consult with employees (including HSRs) when identifying or assessing hazards or risks to health or safety at the workplace, making decisions about measures to control such risks and proposing changes that may affect the health or safety of employees at the workplace. [OHS Act s35](#)
23. It is important to consult with your employees as early as possible at each step of the risk management process, including when planning to:
- introduce new work or change existing work
 - select new plant
 - refurbish, renovate or redesign existing workplaces
 - carry out work in new environments.
24. Employers who are required to consult on a matter must share information about the matter with employees, including relevant contractors and HSRs, give them a reasonable opportunity to express their views, and take those views into account before making a decision. If employees are represented by an HSR, the consultation must involve that HSR (with or without the involvement of the employees directly). If the employer and the employees have agreed to procedures for undertaking consultation, the consultation must be undertaken in accordance with those procedures. [OHS Act s36](#)
25. Employers also need to encourage employees and contractors to report any problems immediately so that risks can be managed before an injury occurs.
26. Employees and contractors may have practical suggestions or potential solutions that can be implemented.
27. For more information on consultation go to [worksafe.vic.gov.au](https://www.worksafe.vic.gov.au).

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Information, instruction, training and/or supervision

28. Employers must provide employees with necessary information, instruction, training or supervision to enable them to perform their work in a way that is safe and without risks to health. OHS Act s21(2)(e) This duty also extends to independent contractors (including any employees of the independent contractor) engaged by the employer in relation to matters over which the employer has control. OHS Act s21(2)(e)
29. The mix of information, instruction, training and supervision required will depend on the frequency and type of hazards in the workplace, and how much employees already know about the risks and necessary risk control measures.
30. Where employees are exposed to potential falls, including falls from two metres or less, information, instruction and training needs to cover the nature of hazards associated with falls and the need for risk control measures, including how to properly use them. For example, ensuring employees understand how to identify and report hazards associated with falls, how to use risk control measures implemented for their protection and how to follow emergency procedures.
31. Training programs should be practical and 'hands on'. The structure, content and delivery of the training needs to take into account any special requirements of the employees and independent contractors being trained (eg specific skills or experience, disability, language, literacy and age).
32. Employers must provide supervision to employees where such supervision is necessary for safe work. OHS Act s21(2)(e) This is particularly important with employees who are more vulnerable in their work areas, such as new, inexperienced or young employees.
33. Supervision is important in dynamic working environments such as construction sites. Employers need to ensure that supervisors take action to enable persons to perform their work in a way that is safe and without risks to health. This should include correcting any unsafe work practices as soon as possible.
34. Where the employees undertaking work are new or inexperienced, such as young workers, it is often necessary to provide additional supervision.
35. When providing information, instruction and training to employees and independent contractors to ensure work is able to be performed in a manner that is safe and without risks to health, it is important to include information about:
 - the nature of the fall hazards
 - the need for and proper use of measures to control risk
 - the selection, use, fit, testing and storage of any personal protective equipment (PPE)
 - the content of any relevant SWMS, health and safety coordination plan and emergency response procedures.
36. Employers need to review their training program regularly and also when there is a change to work processes, plant or equipment; new control measures are implemented; changes are made to relevant legislation; or if any other issues might impact on the way the work is performed. Employers should also keep records of all induction and training given to employees.

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37. Refresher training needs to be provided as appropriate for a particular workplace. The frequency of refresher training should be determined having regard to the frequency with which employees and independent contractors are required to carry out tasks associated with fall hazards.
38. In addition to the employer's general duty to provide employee training, two specific types of training are required in the construction industry – **construction induction training** and **site induction** (site specific training).
39. An employer must ensure that any person employed to do construction work has completed construction induction training before they start work. This includes employees and apprentices working at the site. The construction induction training must be provided by a construction registered training organisation (construction RTO). **OHS Regulations r339** A person's construction induction card lapses if that person has not performed any construction work for any consecutive period of two years. **OHS Regulations r349**
40. An employer must accept any of the following things as evidence that the employee has done construction induction training, including:
- a card evidencing completion before 1 July 2008 of the Construction Industry Basic Induction training course (known as a 'red card')
 - a current 'construction induction card' issued by WorkSafe following successful completion of induction training by a construction RTO
 - a construction statement of attainment issued by a construction RTO within the previous 60 day period, or
 - recognised evidence of construction induction training (for example a statement or card issued under similar requirements in another Australian state or territory). **OHS Regulations r343**
41. For more information about construction induction training go to **worksafe.vic.gov.au**.

construction induction training means a unit of competency of general occupational health and safety induction training to the construction industry endorsed or accredited under the Australian Qualifications Framework **OHS Regulations r5**

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Site induction

42. An employer must ensure that any person employed to perform construction work is given OHS training about the particular workplace where the work will be performed. OHS Regulations r330 This site induction needs to be undertaken before the person starts work at the workplace (that is, before starting work on the construction site).
43. The aim of site induction is to make sure employees and contractors are familiar with site specific hazards, risk controls, OHS rules and site procedures. For example, the emergency procedures, arrangements for supervision of the work, who the HSRs are and any specific issues on the site.
44. The detail required in the site induction may vary between construction sites and between phases of a project. The length of time it takes may depend on things such as the size of the site, the number and variety of trades working on the site as well as how much the site is expected to change as work progresses.
45. There should be an opportunity for employees and contractors to ask questions about their responsibilities and have any issues clarified.
46. Where an employer has information about the particular site that would form part of a site induction (eg OHS information, site specific hazards or risk controls), they need to provide that information to persons (such as contractors) performing construction work.

Note: Site-specific information that forms part of the site induction should be provided to employers or contractors through an on-site meeting, particularly where significant or unusual hazards are present.

Where there are no significant or unusual hazards at the site, this information may be provided via email, phone or fax.

For more information about site induction go to **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)**.

Part 2 – Overview of the risk management process

47. This Part provides an overview of the risk management process as it applies to the prevention of falls in housing construction. It includes information on legal duties that an employer must comply with to prevent falls of more than two metres under Part 3.3 of the OHS Regulations, which are further detailed in Part 3 of this Code.
48. Although Part 3.3 of the OHS Regulations does not apply to risks associated with a fall of two metres or less, the general duties under the OHS Act do apply to these risks (see paragraph 15 and Part 4 of this Code). **OHS Act s21** Employers should follow the risk management process to control risks associated with falls from two metres or less, as it may assist in complying with their general duties.

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health or safety that directly affect or are likely to directly affect them. The duty to consult applies when, for example, making decisions about risk control measures and proposing changes that may affect the health or safety of employees at the workplace. **OHS Act s35** See page 8.

Identifying hazards

49. The first step in the risk management process is to identify fall hazards (see figure 1). An employer must, so far as is reasonably practicable, identify any task (including moving to and from a task) that an employee is required to undertake at a workplace that involves a fall hazard of more than two metres including:
- on any plant or structure being constructed, demolished, inspected, tested, maintained, repaired or cleaned
 - on a fragile surface (eg cement sheeting roofs, rusty metal roofs, fibreglass sheeting roofs and skylights)
 - on a slippery or potentially unstable surface (for example areas where there is potential for ground collapse including poorly backfilled or compacted ground, or unstable areas such as on top of stacks of building materials, timber pallets or bricks)
 - using equipment to gain access to an elevated level or to undertake the task at an elevated level (for example scaffolds or portable ladders)
 - on a sloping surface on which it is difficult to maintain balance (for example on glazed tiles or wet steel roof sheets)
 - in close proximity to an unprotected edge (for example near perimeters without guardrailing or incomplete stairwells), or
 - in close proximity to a hole, trench, shaft or pit that is of sufficient dimensions to allow a person to fall into the hole, trench, shaft or pit. **OHS Regulations r5 and r43**

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50. The general duties under the OHS Act apply where there is a risk to health or safety associated with a fall from two metres or less (see paragraph 15 and Part 4 of this Code). OHS Act s21 Employers should follow the risk management process to control those risks, for example by identifying hazards, as it may assist in complying with their general duties.

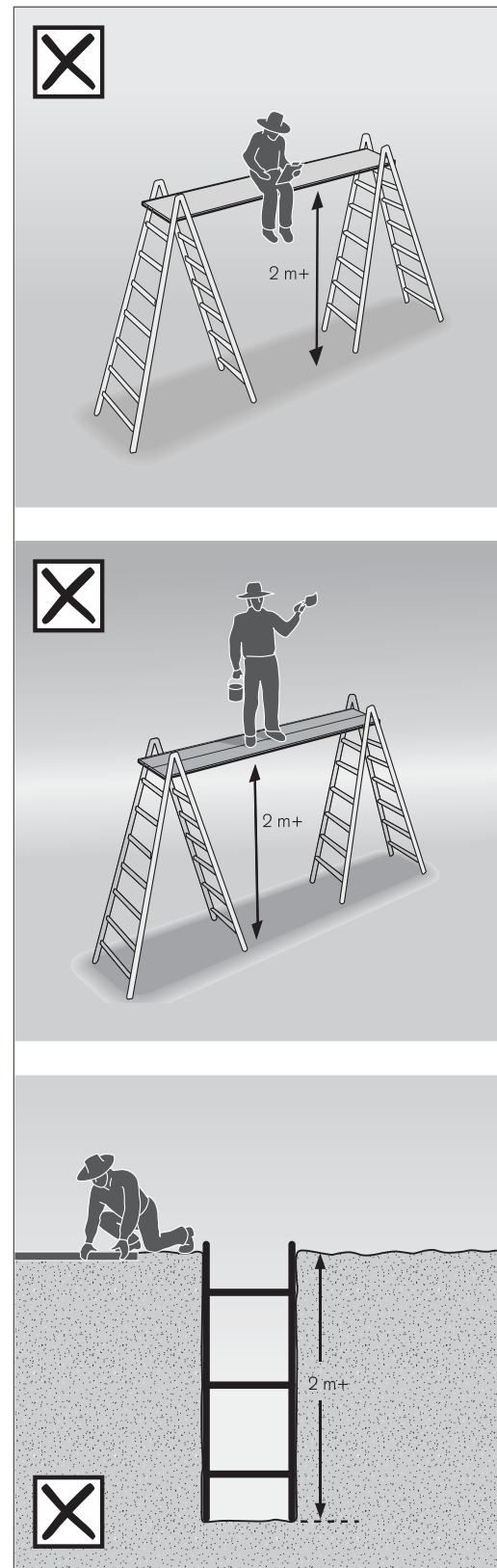


Figure 1 Situations with fall heights of more than two metres.

Part 2 – Overview of the risk management process

Assessing the risks

51. A formal risk assessment is unnecessary if knowledge and understanding about the risk, and how to control it already exist. However, if employers are unsure how to control a risk associated with a fall, a risk assessment can help.
52. If similar tasks or processes are to be carried out at a number of housing construction sites under a person's management or control, that person may only need to do one risk assessment. However, a single or generic risk assessment will only be appropriate if the hazards and risks for the work sites covered by the assessment are the same or similar. If a standardised risk assessment is used, the person completing the risk assessment needs to ensure that the generic assessment is valid for their workplace.
53. If a task involving a fall hazard has been identified, the risk of a fall can be assessed by determining:
 - the likelihood of a fall occurring
 - the potential distance a person could fall, and
 - the extent of harm that a person could receive in the event of a fall.
54. The ultimate effectiveness of any risk assessment is dependent on the quality of the information available. Therefore, people carrying out risk assessments need to have the necessary information, knowledge and experience of the work environment and work processes.
55. In carrying out a risk assessment, it is helpful to break down each activity or process into a series of parts or smaller tasks and assess each one separately.
56. Factors related to tasks that will increase the risk associated with a fall include:
 - handling unstable or cumbersome objects (such as sheets of plaster that can be caught by the wind)
 - manually carrying building materials, large tools, or equipment up to the job
 - the task is lengthy and exposes employees to the risk for long periods of time
 - using chemicals such as solvents or paints that may cause dizziness or loss of coordination
 - new or inexperienced employees are involved in the task.
57. Factors within the working environment that will increase the risk associated with a fall include:
 - the slope of the raised work surface makes it difficult for employees to maintain their balance
 - the work surface is slippery (eg wet, oily, dusty or glazed)
 - the work surface is uneven (for example broken ground)
 - the work surface is too restricted, preventing employees from moving freely
 - tools, work materials and debris clutter the work surface
 - adverse weather conditions (eg working in rain, strong or gusty winds, extreme heat or cold, or high humidity)
 - unprotected edges or penetrations that are difficult to see because of obstructions, glare or deep shadows
 - multiple contractors or trades are in the same work area at the same time.

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58. If the hazards identified relate to HRCW (for example there is a risk of a person falling more than two metres), an employer or self-employed person must ensure that a SWMS has been completed. **OHS Regulations r327(1)** The requirement to complete and comply with a SWMS for any HRCW applies regardless of whether a formal risk assessment is undertaken. For more information on HRCW and SWMS, see paragraphs 91–99.
59. For more information on how to conduct a risk assessment go to **worksafe.vic.gov.au**.

Controlling the risks

60. An employer must, so far as is reasonably practicable, eliminate any risk associated with a fall of more than two metres at the workplace. For example, the risk is eliminated by working on the ground or a solid construction. If it is not reasonably practicable to eliminate a risk associated with a fall of more than two metres, an employer must work their way down the hierarchy of control until the risk is reduced so far as is reasonably practicable. **OHS Regulations r44**
61. Employers must consult with their employees (including any HSRs and independent contractors) when making decisions about how to control risks. **OHS Act s35** Consulting with employees is likely to result in better risk control measures or procedures because it gives them the opportunity to contribute ideas, participate in trials for new risk control measures, and is likely to improve the uptake of risk control measures when they are implemented.
62. The general duties under the OHS Act apply where there is a risk to health or safety associated with a fall of two metres or less (see paragraph 15 and Part 4 of this Code). **OHS Act s21** Employers should follow the risk management process to control those risks, as it may assist in complying with their general duties.

Part 2 – Overview of the risk management process

The hierarchy of control

63. When investigating risk control options, employers need to consider relevant information about the nature of the work to be performed and how this may create a risk to health or safety. The hierarchy of control in Part 3.3 of the OHS Regulations must be followed when controlling risks associated a fall of more than two metres. **OHS Regulations r44** The hierarchy of control is the following:
- Level 1 control: work on the ground or a solid construction.
 - Level 2 control: use a passive fall prevention device.
 - Level 3 control: use a work positioning system.
 - Level 4 control: use a fall arrest system.
 - Level 5 control: use a fixed or portable ladder (in accordance with regulation 45 of the OHS Regulations) or administrative controls.
- OHS Regulations r44(2)-(5)**
64. Under this hierarchy of control, employers must consider and apply the highest level of control (starting from level 1), so far as is reasonably practicable, before considering the level below it. The hierarchy of control for the prevention of falls of more than two metres is set out in table 1.
65. Often it will be necessary to use a combination of risk control measures to effectively control a risk associated with a fall from any height.

Note: In accordance with section 20(1) of the OHS Act, employers have a requirement to eliminate risks to health or safety so far as is reasonably practicable, including risks of falls from two metres or less. If it is not reasonably practicable to eliminate a risk to health or safety, employers are required to reduce that risk so far as is reasonably practicable. See paragraph 15 and Part 4 of this Code for more information.

Part 2 – Overview of the risk management process

Table 1 – Hierarchy of control

	Example
Level 1: Eliminate the risk	Off-site pre-fabrication of walls and roof trusses, or undertaking work from a solid construction (for example a solid floor that meets the definition of a solid construction – see paragraphs 109–113).
Level 2: Use a passive fall prevention device	Use of a tower or perimeter scaffolding to undertake external works.
Level 3: Use a work positioning system	Use of a travel restraint harness system for tasks such as antennae installation.
Level 4: Use a fall arrest system	Use of safety nets during truss erection to protect against an internal fall.
Level 5: Use a fixed or portable ladder, or implement administrative controls	Installing electrical wiring or fixing light fittings from a portable ladder.

Note: In addition to the above hierarchy of control for the prevention of falls, the OHS Regulations include specific hierarchies of control for other particular hazard types including construction work, hazardous substances, hazardous manual handling, confined spaces, plant, noise, asbestos and lead. For information about applying the specific hierarchies for these hazards go to worksafe.vic.gov.au.

66. After considering all higher level controls, if no reasonably practicable control measure has been identified, a level 5 control may be used.
67. Administrative controls are the least effective in controlling risks because they rely on human behaviour and supervision. They must only be used as the sole measure for reducing risk when higher order controls are not reasonably practicable.
68. When higher order controls are in place, administrative controls should be used to supplement those controls. For example, work procedures may be used to ensure the safe use of temporary work platforms, fall arrest systems and ladders.

Personal protective equipment

69. Using personal protective equipment (PPE) such as safety footwear, gloves and occupational protective helmets (hard-hats) is not a risk control measure for fall prevention.
70. PPE does not include safety harness systems. For information on the use of safety harnesses to reduce risks associated with falls see paragraphs 160–161 of this Code.

Part 2 – Overview of the risk management process

Maintaining risk controls

71. Employers have a duty to ensure that control measures are properly installed (if applicable), used and maintained. **OHS Regulations r18**
72. The purpose of maintaining risk controls is to ensure that they are working as originally intended and continue to prevent or adequately control risks associated with falls. Maintenance of control measures should include:
 - monitoring activities and work practices
 - frequent inspections of physical controls such as guardrails, scaffolding and covers over trenches
 - visual checks to ensure risk controls that rely on human behaviour are being properly applied by employees
 - testing of equipment and PPE
 - preventative maintenance of engineering controls and PPE
 - any necessary remedial work to ensure physical controls continue to work effectively.
73. Employers need to have a maintenance procedure in place to ensure that any defects in risk controls are detected as early as possible.

Review and revision of risk controls

74. An employer must review any measures implemented to control risks associated with falls from more than metres and revise them if necessary in the following circumstances:
 - (a) Before any alteration is made to plant or systems of work that is likely to result in a fall.
 - (b) After any incident occurs to which Part 5 of the OHS Act applies that involves a fall or a risk associated with a fall.
 - (c) If, for any other reason, the risk control measures do not adequately control the risks.
 - (d) After receiving a request from an HSR. **OHS Regulations r48(1)**

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health or safety that directly affect or are likely to directly affect them. The duty to consult applies when, for example, making decisions about risk control measures and proposing changes that may affect the health or safety of employees at the workplace. **OHS Act s35** See page 8.

75. An HSR may request a review of risk controls if they believe, on reasonable grounds, that:
 - any of the circumstances listed in subparagraph 74(a) to (c) exist
 - the employer has failed to properly review the risk controls, or
 - in conducting a review of, or revising, the risk controls, the employer has failed to take into account any of the circumstances listed above (for example the HSR believes that during the review of control measures the employer has failed to consider a change to a system of work that may increase risk). **OHS Regulations r48(2)**

Part 2 – Overview of the risk management process

76. The general duties under the OHS Act apply where there is a risk to health or safety associated with a fall of two metres or less (see paragraph 15 and Part 4 of this Code). OHS Act s21 Employers should follow the risk management process to control those risks, for example by reviewing and revising risk controls, as it may assist in complying with their general duties.

Consider whether fall protection measures introduce new risks

77. An employer must reduce, as far as is reasonably practicable, any risks associated with the installation, erection or removal of plant, including equipment, intended to control a risk associated with a fall from more than two metres. OHS Act s5 and OHS Regulations r47(2) Employees (for example scaffolders and guardrail installers) who install, erect or remove a fall protection measure should not be exposed to a greater risk than the measure is designed to control, even if it is highly effective once in place.
78. If plant, including equipment, is used to control a risk, it must be designed and constructed:
- for the task(s) to be undertaken, and
 - in such a way as to enable its safe use in the physical surroundings in which it is to be used and the conditions during which it is to be used. OHS Regulations r47(1)
79. When using plant to control risks associated with falls, an employer should consider whether:
- the plant is designed to enable safe access and egress to both the plant and the work area (for example access onto a roof)
 - the fall risks for employees erecting or installing the plant have been identified and controlled
 - the plant is designed for all the intended loads, including temporary placement of materials
 - the foundations of the plant have been assessed to take the imposed loads
 - during installation, use or dismantling, it is possible for employees or plant to come into contact with powerlines (for example when landing roof trusses onto the house frame by crane) or with underground services in the case of working in the vicinity of excavations
 - sufficient information, instruction, training and supervision has been provided to employees who may operate or alter plant so that they do not put themselves or others at risk.
80. Employers need to make sure that any after-market alterations to plant have been undertaken by a suitably qualified person. If the employer or any other person modifies the design of the plant or any component of the plant they may take on additional duties under the OHS Act (for example designer duties).
81. For more information on plant, see the *Plant compliance code*.

Part 2 – Overview of the risk management process

Establish emergency procedures

82. Unless risks associated with a fall of more than two metres have been eliminated by arranging for work to be done on the ground or on a solid construction, an employer must ensure that emergency procedures are established in accordance with the OHS Regulations. [OHS Regulations r49\(1\)](#)
83. The employer must ensure that the emergency procedures:
- so far as is reasonably practicable, enable:
 - the rescue of an employee in the event of a fall, and
 - the provision of first aid to an employee who has fallen, and
 - can be carried out immediately after a fall. [OHS Regulations r49\(2\)](#)
84. The employer must ensure that any risk associated with carrying out the emergency procedures is, so far as is reasonably practicable, eliminated. If it is not reasonably practicable to eliminate the risk, it must be reduced so far as is reasonably practicable. Examples of risks associated with carrying out emergency procedures are risks associated with falls, electric shock, crushing and musculoskeletal disorder. [OHS Regulations r49\(3\)](#)
85. The employer must ensure that the emergency procedures are carried out immediately after the fall. [OHS Regulations r49\(4\)](#)
86. When developing these procedures an employer needs to consider the different types of emergency and rescue scenarios that might arise. Information from the risk assessment will aid an employer in this task.
87. To ensure that the emergency procedures enable the provision of first aid, the procedures should:
- specify whether trained first aiders are required, and if so, the number needed, the competencies required, and the first aid equipment necessary
 - identify the nearest hospital and medical treatment rooms
 - establish means of contacting the emergency services promptly.
88. If the job is to be carried out in a remote location outside the mobile telephone network and other means of communication are not available, alternative procedures that do not rely on the rapid attendance of emergency services need to be developed.
89. An employer needs to make sure that all employees likely to be involved in performing emergency procedures know what to do in the event of a fall from height, for example by rehearsing the emergency procedures.

❖ Part 3 – Working at heights above two metres

90. Depending on the circumstances, serious injury or death can result from a fall from any height. However, the likelihood of serious injury or death increases with the height from which a person falls. This Part provides guidance to help employers comply with their legal obligations for housing construction work at heights exceeding two metres.

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on certain matters related to health or safety that directly affect or are likely to directly affect them. The duty to consult applies when, for example, making decisions about risk control measures and proposing changes that may affect the health or safety of employees at the workplace. [OHS Act s35](#)
See page 8.

Safe work method statements

91. An employer or self-employed person must not perform HRCW if there is a risk to the health or safety of any person arising from the work unless:
- a SWMS has been prepared before the work commences, and
 - the work is performed in accordance with that statement. [OHS Regulations r327\(1\)](#)
92. If there is non-compliance with a SWMS when work is being performed, an employer or self-employed person must:
- stop the work immediately or as soon as it is safe to do so, and
 - not resume the work until the SWMS is complied with or reviewed and, if necessary, revised. [OHS Regulations r327\(2\)](#)
93. An employer or self-employed person performing high risk construction work for which a SWMS is required must review and, if necessary, revise the SWMS:
- whenever the high risk construction work changes, or
 - if there is an indication that risk control measures are not controlling the risks adequately, including after any incident that occurs during high risk construction work. [OHS Regulations r328](#)
94. HRCW includes construction work where there is a risk of a person falling more than two metres. [OHS Regulations r322\(a\)](#)

Part 3 – Working at heights above two metres

95. A SWMS is a document that:
- identifies work that is high risk construction work
 - states the hazards and risks to health or safety of that work
 - sufficiently describes measures to control those risks
 - describes the manner in which the risk control measures are to be implemented, and
 - is set out and expressed in a way that is readily accessible and comprehensible to persons who use it. **OHS Regulations r324**
96. A SWMS should be developed after, or in conjunction with, a risk assessment and needs to describe all risk control measures that are being used in relation to the high risk construction work. For example if a passive fall prevention device is being implemented in combination with administrative controls, each of those level 2 and level 5 risk controls needs to be described in the SWMS.
97. Describing the control measures and how they will be implemented needs to include providing, where applicable, a description of any plant, including equipment, used in the work, the qualifications of the people doing the work and the training required to do the work safely.
98. A SWMS may be recorded on a standardised template. However, if a template is used the employer remains responsible for ensuring the completed SWMS meets the requirements in paragraph 95.
99. For more information on SWMS go to **worksafe.vic.gov.au**.

High risk work licences

100. A person must not do any high risk work unless they hold an appropriate high risk work licence in relation to the work. **OHS Regulations r128**
101. The classes of high risk work licences are listed in Schedule 3 of the OHS Regulations and include licences for scaffolding, dogging, rigging and boom-type elevating work platforms that have a boom length of 11 metres or more. **OHS Regulations r5, r128–130 and Schedule 3**
102. A current and valid equivalent licence issued by a corresponding Authority in other Australian jurisdictions, being used in accordance with the terms and conditions under which they were granted, will also be valid in Victoria. **OHS Regulations r131**

corresponding Authority means a Government department or a statutory authority of the Commonwealth Government, or of the Government of another State or of a Territory, that is responsible for administering law corresponding to the OHS Act, the *Dangerous Goods Act 1985* or the *Equipment (Public Safety) Act 1994*. For example, SafeWork NSW.

103. An employer has a duty to ensure that any employee who performs high risk work holds an appropriate high risk work licence in relation to that work. **OHS Regulations r129**
104. For more information about licensing, including how to apply for a high risk work licence and exceptions that apply, go to **worksafe.vic.gov.au**.

Part 3 – Working at heights above two metres

Hierarchy of control

105. The hierarchy of control is set out in the order that employers must consider and apply, so far as is reasonably practicable, to eliminate or reduce risks associated with falls from above two metres, as described in paragraphs 63–68.

Level 1 controls: Eliminate the risk

106. An employer must, so far as is reasonably practicable, eliminate any risk associated with a fall from above two metres at the workplace. [OHS Regulations r44\(1\)](#)

Work on the ground

107. Eliminating work at height is the most effective way of protecting employees from a risk associated with a fall at a workplace.
108. Duty holders need to consider how work can be done at ground level to eliminate the need for work at height. For example, use off-site prefabrication of wall frames and trusses.

Work on a solid construction

109. Careful and ongoing assessment of the physical location needs to be undertaken to eliminate areas in which employees could fall. Many areas of a construction site can be turned into a solid construction area.

solid construction means an area that has:

- a surface that is structurally capable of supporting persons, material and any other loads applied to it
- barriers around its perimeter, and any open penetrations, to prevent a fall from the area
- an even and readily negotiable surface and gradient
- a safe means of entry and exit.

[OHS Regulations r5](#)

110. Ladders, trestle scaffolding or similar, should not be used on a solid construction unless additional control measures are in place to control the risk of persons falling over guardrailing, in accordance with the hierarchy of control.
111. An area will meet the definition of a 'solid construction' if it satisfies all of the following elements:

(a) Structural strength

The surface (and its supports) must be structurally capable of supporting persons, material and any other loads applied to it. [OHS Regulations r5](#) Different types of work involve different loads on the supporting surface. If the duty holder is unsure of the structural strength of the surface, a structural engineer needs to determine the safe load capacity before use.

Where props are used to support suspended floors, formwork or similar areas, the props should meet the following:

- proprietary brand props are marked with their safe working load
- timber props are designed for the loads imposed
- the props are secured top and bottom, and
- the props are tied to each other in the longitudinal and transverse directions to form a stable, free-standing structure.

Part 3 – Working at heights above two metres

(b) Surface and gradient

The area must have an even and readily negotiable surface and gradient. **OHS Regulations r5** Surfaces need to be non-slip and free from trip hazards and penetrations. Smooth surface working areas should not be steeper than 7 degrees (1 in 8 gradient). Cleated or grated surfaces, which provide greater slip resistance, should not be steeper than 23 degrees (approximately 1 in 2.4 gradient).

(c) Edge protection

The solid construction must have barriers around its perimeter to prevent a fall from the area. **OHS Regulations r5** Perimeter protection needs to be provided for all exposed edges including:

- the perimeters of buildings or other structures
- the perimeters of skylights or other fragile roof materials.

(d) Void protection

The solid construction must have barriers around any open penetrations to prevent a fall from the area. **OHS Regulations r5** For example, open penetrations, such as stair voids and service penetrations need to be covered or provided with barriers, such as guardrailing. Where there is a risk that employees performing tasks from work platforms or ladders may fall over the guardrailing, voids need to be covered. Coverings need to be secured in place to prevent dislodgement and be designed to withstand any loads that may be applied (for example during construction work or in the event of a fall).

(e) Access and egress

The area must have safe means of entry and exit. **OHS Regulations r5** Common means of entry and exit include:

- existing floor levels
- permanently installed platforms, ramps, stairways and fixed ladders, that comply with *AS 1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation*
- temporary access ways and temporary stair systems
- secured single portable ladders set up at a slope of between 4:1 and 6:1, and extending at least 1m above the stepping-off point.

112. Ladder and stairway landings need to have the same level of edge protection adjacent to their open sides and ends as a solid construction.

113. Stepladders and trestle ladders should not be used for entry to, or exit from, a solid construction.

Level 2 controls: Passive fall prevention devices

114. A 'passive fall prevention device' is material or equipment, or a combination of material and equipment, that is designed for the purpose of preventing a fall and that, after initial installation, does not require any ongoing adjustment, alteration or operation by any person to ensure the integrity of the device to perform its function.

OHS Regulations r5 Examples include temporary work platforms, guardrails and roof safety mesh.

115. If it is not reasonably practicable to eliminate a risk associated with a fall of more than two metres, employers must reduce the risk, so far as is reasonably practicable, by using a passive fall prevention device. **OHS Regulations r44(2)**

Part 3 – Working at heights above two metres

Temporary work platforms

116. A 'temporary work platform' is:

- (a) a fixed, mobile or suspended scaffold
 - (b) an elevating work platform
 - (c) a mast climbing work platform
 - (d) a work box supported and suspended by a crane, hoist, forklift truck or other form of mechanical plant
 - (e) building maintenance equipment, including a building maintenance unit
 - (f) a portable or mobile fabricated platform, or
 - (g) any other temporary platform that provides a working area for the duration of work performed at height and is designed to prevent a fall.
- OHS Regulations r5 Temporary work platforms commonly used in the housing construction industry include scaffolds (fixed or mobile), elevating work platforms and portable platforms.

Scaffolds

117. Scaffolds are a common means of providing a safe platform for working at height. There is a wide variety of scaffold systems available.

118. Scaffold working platforms are generally rated as light, medium or heavy duty:

- Light duty – up to 225kg per bay. Examples include painting, electrical work, many carpentry tasks and other light tasks. Platforms need to be at least two planks wide.
- Medium duty – up to 450kg per bay. This is suitable for general trades work. Platforms need to be at least four planks wide.
- Heavy duty – up to 675kg per bay. This is suitable for bricklaying, concreting, demolition work and most other work tasks involving heavy loads or heavy impact forces. Platforms need to be at least five planks wide.
- Special duty – has a designated allowable load as designed, not less than 1kpa.

119. These safe load limits include the weight of people (which is taken to be a nominal 100kg per person) plus the weight of any materials, tools and debris on the working platform. Therefore, a properly constructed mobile scaffold with a light duty platform can safely support one employee and 125kg of tools and material, or two employees and 25kg of tools and materials.

120. All scaffolding needs to be erected, altered and dismantled by competent people. High risk work licence requirements apply to the erection, alteration and dismantling of any scaffold from which a person or object could fall more than four metres from the scaffold. OHS Regulations Schedule 3 For more information on high risk work licence requirements, see paragraphs 100–104.

Part 3 – Working at heights above two metres

- 121. For more information on timber scaffolds, see **Appendix C – Timber scaffolds**.
- 122. For more information on plant, including scaffolds, see the *Plant compliance code*.

Trestle scaffolds

- 123. Trestle scaffolds used at heights greater than two metres need to incorporate guardrailing and toeboards to prevent people and materials falling from the open side or end of the work platform (see figure 2). The system, including planks, needs to be assembled according to the manufacturers' specifications.

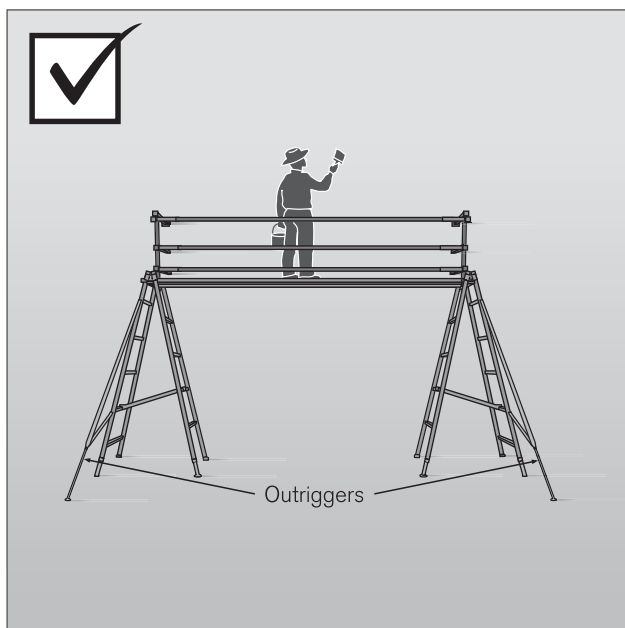


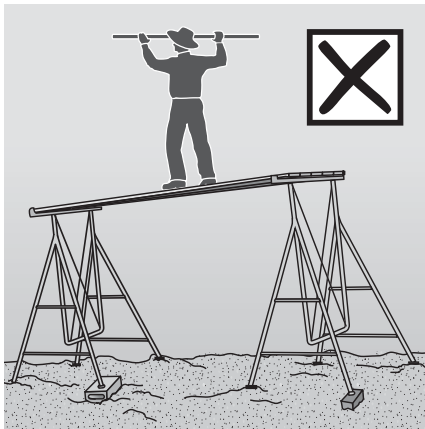
Figure 2 Trestle ladder scaffold with guardrailing and outriggers for stability.

- 124. Some trestle ladder scaffolds include outriggers to increase stability. Trestle ladder scaffolds are only suited to light duty tasks such as painting and rendering.
- 125. When adjusting the height of a trestle scaffold, only the purpose-designed pins should be used. Nails or pieces of reinforcing bar should not be used.
- 126. The maximum spacing of trestles should not exceed the maximum recommended span of the scaffold planks. Scaffold planks manufactured in accordance with AS 1577 *Scaffold planks* have this information marked on them. Where this information is not known refer to table 2.
- 127. Work should only be performed between the trestles. Heavy loads (such as bricks, blocks or similar) need to be placed close to, or directly over, the trestles.

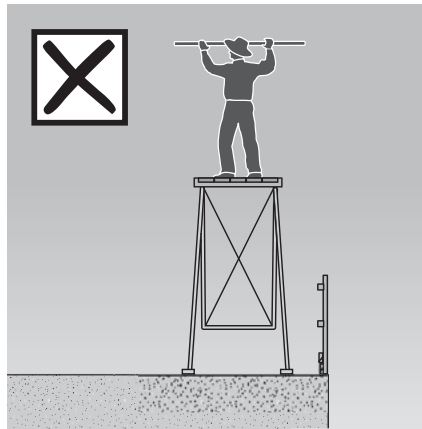
Table 2 – Maximum span of solid timber scaffold planks complying with AS 1577

Nominal thickness of plank (mm)	Maximum span (m)
38	1.5
50	2.0
63	2.5

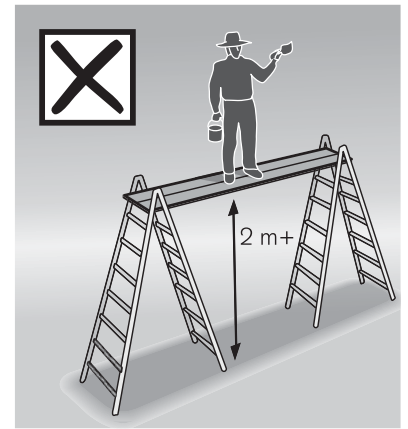
Part 3 – Working at heights above two metres



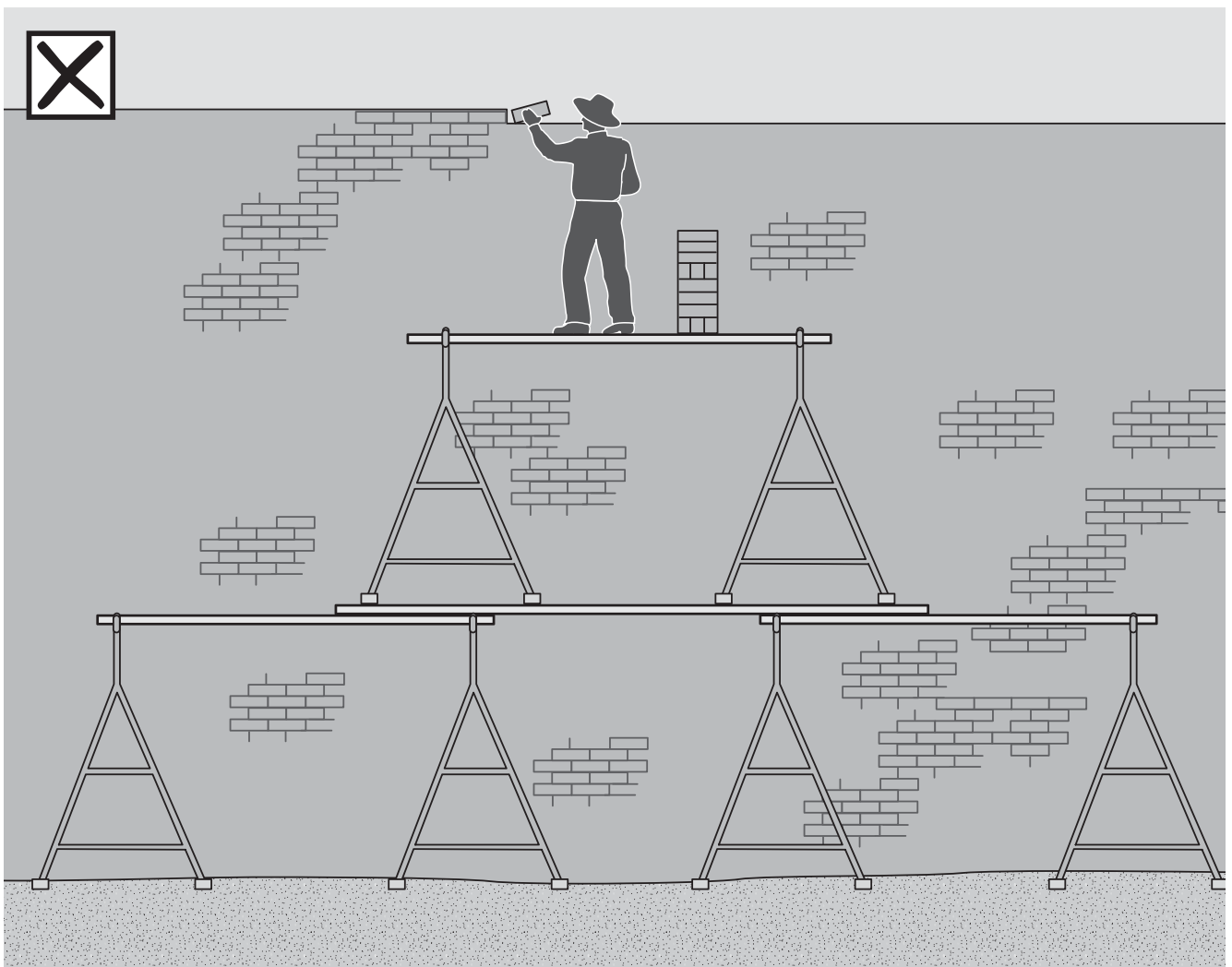
(a) Trestle scaffold set up on uneven, sloping ground with unsuitable soleplates.



(b) Worker could fall over the perimeter guardrail.



(c) Worker could fall more than two metres.



(d) Never piggy-back trestles.

Figure 3 Examples of wrongly used trestle scaffolds.

Part 3 – Working at heights above two metres

Perimeter guardrailing

128. Guardrailing should be used to provide effective fall protection at:
- the perimeters of buildings or other structures
 - the perimeters of skylights or other fragile roof materials
 - openings in floor or roof structures
 - edges of excavations.
129. Guardrailing, where used, should:
- incorporate a top-rail min 900mm above the working surface
 - incorporate a mid-rail
 - incorporate a bottom rail or toeboard (where a toeboard is not used alternative measures need to be implemented to prevent risks to persons working below from falling objects)
 - be of robust construction and designed in accordance with the AS 1657 *Fixed platforms, walkways, stairways and ladders – design, construction and installation* or AS/NZS 4994 *Temporary edge protection*.
130. Wall-framing incorporating studs at 600 mm maximum centres and one row of noggings 900–1200mm above floor level is an acceptable alternative to guardrailing. Where the frame incorporates window or door openings, additional members need to be provided across these openings to provide the equivalent fall protection to the guardrailing described above.
131. Proprietary systems need to be configured, installed, used and dismantled according to the manufacturers' instructions. Where timber guardrailing is not specifically designed in accordance with AS 1657, the member sizes set out in table 3 and table 4 need to be used for guardrails and post sizes respectively.

132. Wherever feasible, guardrailing needs to be constructed such that, when an outward force is applied, the posts are subjected to bending about their strong axis (see figure 4a).

Timber guardrailing

133. Timber may be used to construct guardrailing in accordance with paragraph 129 above. Where used, timber should:
- have a minimum stress grade of machine graded pine (MGP) 10 or equivalent, and
 - be inspected by a competent person to ensure there are no knots or other defects that would make the timber unsuitable for use as guardrailing.
134. The method for connecting timber posts to the support structure or rails to posts needs to have adequate strength for the purpose intended. Figure 4(b) gives two connection detail examples.

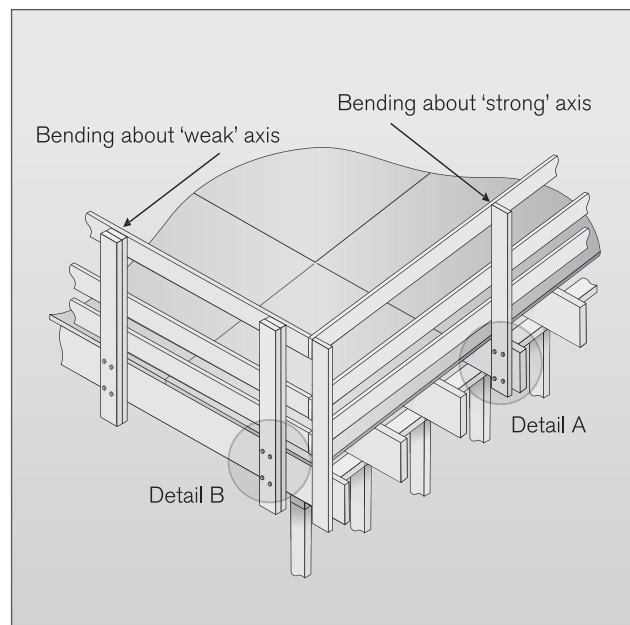
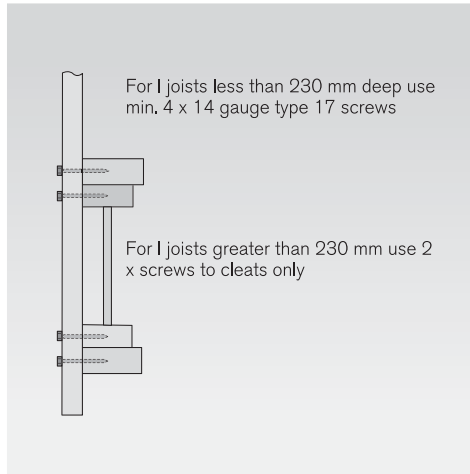
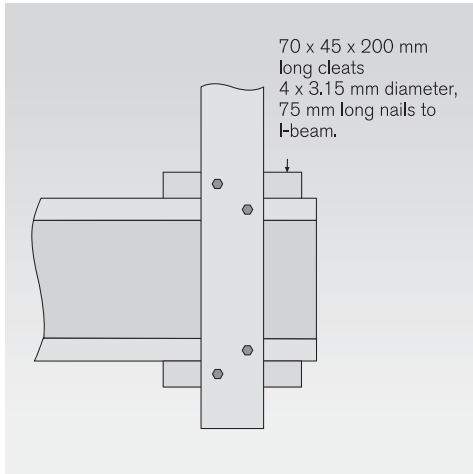
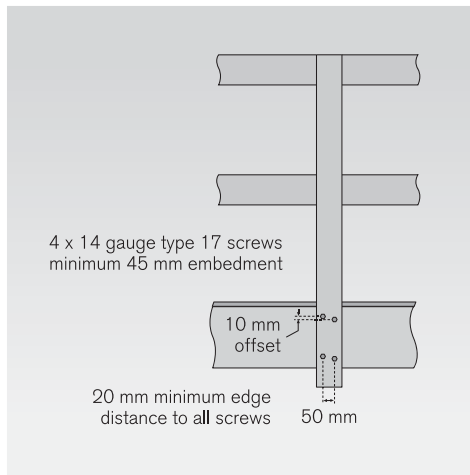
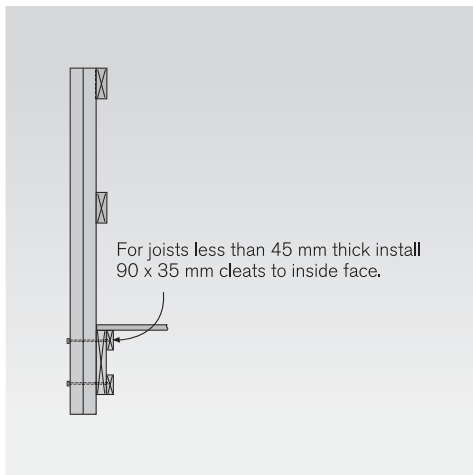


Figure 4(a) Timber guardrail (with alternative connection details).

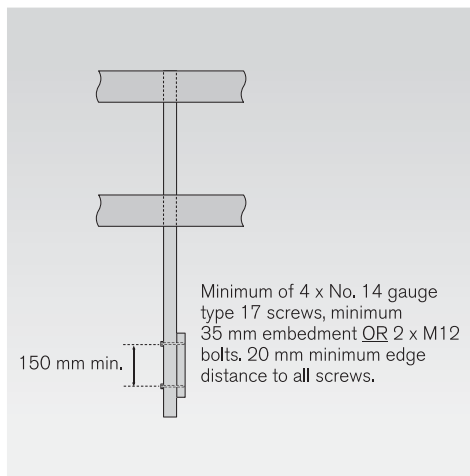
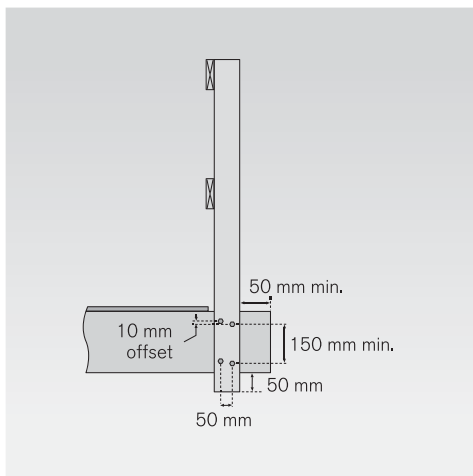
Part 3 – Working at heights above two metres



Detail 'A' Bending about strong axis: I-beam joists.



Detail 'B' Bending about weak axis.



Detail 'A' Bending about strong axis: solid floor joists.

Figure 4(b) Timber guardrail (with alternative connection details).

Part 3 – Working at heights above two metres

Note: Table 3 and table 4 are only applicable for guardrails at the perimeter of working platforms, floors or other horizontal surfaces.

Table 3 – Timber guardrails

Minimum nominal sizes and gradings

Guardrail size depth x width (mm) (nominal sizes)	Maximum span (m)	
	MGP 10 seasoned pine	MGP 12 seasoned pine
90 x 35	1.5	2.3
90 x 45	2.5	3.2
2 nos 90 x 35*	3.5	3.5

* Timber members to be nailed together at maximum 300mm intervals in 'T' or 'L' sections.

Table 4 – Timber guardrail posts

Minimum nominal sizes and gradings (maximum span between guardrail posts less than 3.5m)

Bending about weak axis	Bending about strong axis
2 nos 90 x 35 MGP 10 seasoned pine**	90 x 45 MGP 10 seasoned pine

**Timber members to be nailed together at maximum 300mm intervals.

Guardrails for trenching works

135. Where trenching works present a risk of people falling on the site, any such risk should be controlled by the provision of:
- guardrailing or
 - a barrier, approximately two metres back, to prevent people approaching the trench.
136. For more information on controlling risks associated with falls in trenching work, see the *Prevention of falls in general construction compliance code*.

Guardrails for roof work

137. For information on guardrailing for roofing works see paragraphs 240–242.

Safety mesh

138. Safety mesh may sometimes be an appropriate measure for controlling the risk of internal falls associated with roofing works. For information on the installation and use of safety mesh see the *Prevention of falls in general construction compliance code*.

Elevating work platforms

139. Elevating work platforms (EWPs) are available in a wide variety of types and sizes. They include scissor lifts, cherry pickers, boom lifts and travel towers. There are battery powered and internal combustion engine types. Some are designed for hard and flat surfaces only, while others are designed to be operated on rough terrain.
140. People working in travel towers, boom lifts or cherry pickers need to wear a properly anchored safety harness. A safety harness system only needs to be used for a scissor-lift if advised by the manufacturer or indicated in the risk assessment.
141. People operating boom-type EWPs with boom lengths exceeding 11 metres must have an appropriate high risk work licence. [OHS Regulations r128, r129 and Schedule 3](#) For more information on high risk work licences, see paragraphs 100–104.
142. For more information on EWPs see the *Prevention of falls in general construction compliance code*.

Part 3 – Working at heights above two metres

Level 3 controls: Work positioning systems

143. A work positioning system is:
- an industrial rope access system
 - a travel restraint system, or
 - any other equipment, other than a temporary work platform, that enables a person to be positioned and safely supported at a work location for the duration of the task being undertaken at height. [OHS Regulations r5](#)
144. If it is not reasonably practicable to reduce a risk associated with a fall by using higher level control measures of the types described in pages 23–30 (level 1 and 2 controls), the employer must reduce the risk so far as is reasonably practicable by using a work positioning system. [OHS Regulations r44\(3\)](#)
145. Work positioning systems require a higher level of operator competency and supervision than higher order controls.

Travel restraint system

146. A travel restraint system is a type of work positioning system, and is equipment worn by, or attached to, a person and designed for the purpose of physically restraining the person from reaching an edge or elevated surface from which the person may fall. [OHS Regulations r5](#)
147. Generally, a travel restraint system consists of a harness connected by a lanyard to a suitable anchorage point or static line. This equipment needs to be set up to prevent a free fall from occurring.
148. Each anchorage point should comply with the requirements of *AS 1891:4 Industrial fall-arrest systems and devices selection, use and maintenance*.

149. A purpose-designed, temporary roof anchor, when used in accordance with the manufacturers' instructions, may be used as part of a travel restraint system on metal deck or tiled roofs.
150. Travel restraint systems should only be used for tasks of short duration (such as replacing a broken roof tile or final inspections) where it is not reasonably practicable to adopt a fall protection system that prevents falls by providing a physical barrier (such as guardrailing). This is because travel restraint systems require a high level of user skill to operate safely as well as greater supervision (see figure 5).

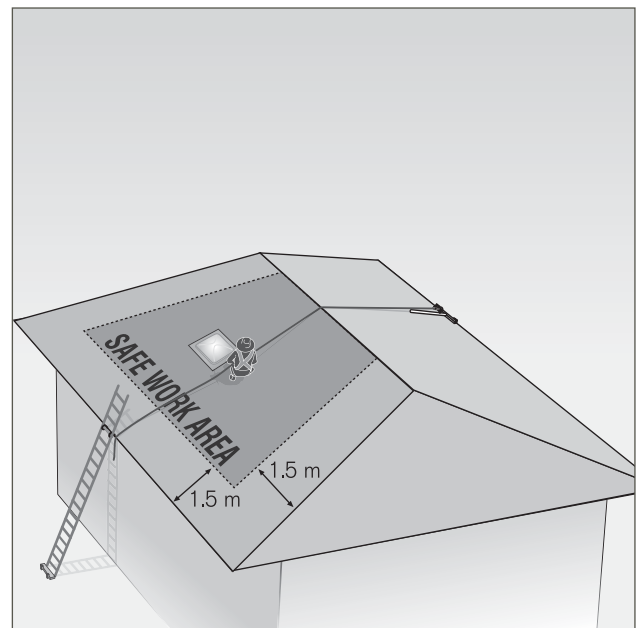


Figure 5 Use of temporary roof anchor.

151. Travel restraint systems are not fall arrest systems. Typical anchorage points for these systems are not designed for the impact loads applied in the event of a fall. Therefore, where there is any possibility that a person may approach an edge from where a fall is possible, a travel restraint system should not be used.
152. For more information on other types of work positioning systems, which have limited application in housing construction, see the *Prevention of falls in general construction compliance code*.

Part 3 – Working at heights above two metres

Level 4 controls: Fall arrest systems

153. A fall arrest system means equipment or material, or a combination of equipment and material, that is designed to arrest the fall of a person. **OHS Regulations r5** Examples include industrial safety nets, catch platforms, and safety harness or inertia reel systems (other than a travel restraint system).
154. Fall arrest systems must only be used if it is not reasonably practicable to use higher level control measures of the types described in pages 23–31 (level 1, 2 and 3 controls). **OHS Regulations r44(4)**

Industrial safety nets

155. Industrial safety nets can provide a satisfactory means of protection while allowing employees maximum freedom of movement.
156. In some circumstances, an internal safety net may be an effective method of arresting falls for buildings, structures or stairwell openings.

Catch platforms

157. A catch platform is a temporary platform located below a work area designed to catch a falling person. The platform needs to be of robust construction and designed to withstand the maximum potential impact load. Scaffolding components may be used to construct fixed and mobile catch platforms.
158. All catch platforms should:
- incorporate a fully planked-out deck
 - be positioned so the deck extends at least two metres beyond all unprotected edges of the work area, except where extended guardrailing is fitted to the catch platform
 - be positioned as close as possible to the underside of the work area (the distance a person could fall before landing on the catch platform should be no more than one metre)
 - always be used with an adequate form of edge protection.
159. For information on the erection of catch platforms for roofing work, see paragraph 243.

Part 3 – Working at heights above two metres

Safety harness systems

160. Individual fall arrest systems (safety harness systems other than travel restraint systems) are intended to arrest a falling person safely and reduce the impact of the fall. The safe and correct use of such systems relies on many factors including the design and availability of substantial engineered anchorage points. Accordingly they have limited application in housing construction.
161. For more information on safety harness systems see the *Prevention of falls in general construction compliance code*.

Level 5 controls: Administrative controls and fixed or portable ladders

Portable ladders

162. Portable ladders are a relatively low-cost option for persons intending to undertake work at height. Their affordability, combined with the ease with which they may be transported and relocated, has resulted in ladders being used extensively in the housing industry. However, many falls take place when people are working from ladders.
163. Under Part 3.3 of the OHS Regulations, which applies to falls from more than two metres, portable ladders must only be used where elimination and other higher order risk control measures are not reasonably practicable. [OHS Regulations r44\(5\)](#)
164. For more information on the use of ladders where people are exposed to the risk of a fall of up to two metres, see Part 4 of this Code.
165. Generally, ladders are only appropriate for short duration, light tasks such as painting a downpipe, repairing a gutter or carrying out minor electrical installations.
166. If a fixed or portable ladder is used to control the risk of a fall, the employer must ensure that the ladder is:
 - fit for purpose
 - appropriate for the duration of the task, and
 - set up in a correct manner.[OHS Regulations r45](#)

Part 3 – Working at heights above two metres

Selection of ladders

167. Ladders must be correctly selected for the task to be undertaken and appropriate for the duration of the task. OHS Regulations r45 The physical surroundings of where the task is to be undertaken and the prevailing weather conditions should be taken into consideration. For example, metal ladders or metal-reinforced ladders should not be used for live electrical work.
168. Typically, ladder use for construction work involves repetitive, high volume use and handling, requiring them to be of robust design and construction. Therefore, ladders used for construction work need to comply with the AS/NZS 1892 *Portable ladders* series. They also need to be industrial grade, not domestic grade.
169. Commercially available step platforms are extremely stable and provide a much larger work surface than a stepladder. Some models are collapsible and adjustable to heights above two metres.

Safe use of ladders

170. Any ladder used at a workplace needs to be set up on a surface that is solid and stable, and set up to prevent the ladder from slipping (see figure 6).
171. Slipping of ladders can be prevented by:
- placing single and extension ladders at a slope of 4:1
 - setting up stepladders in the fully opened position
 - securing single and extension ladders at both the top and bottom.

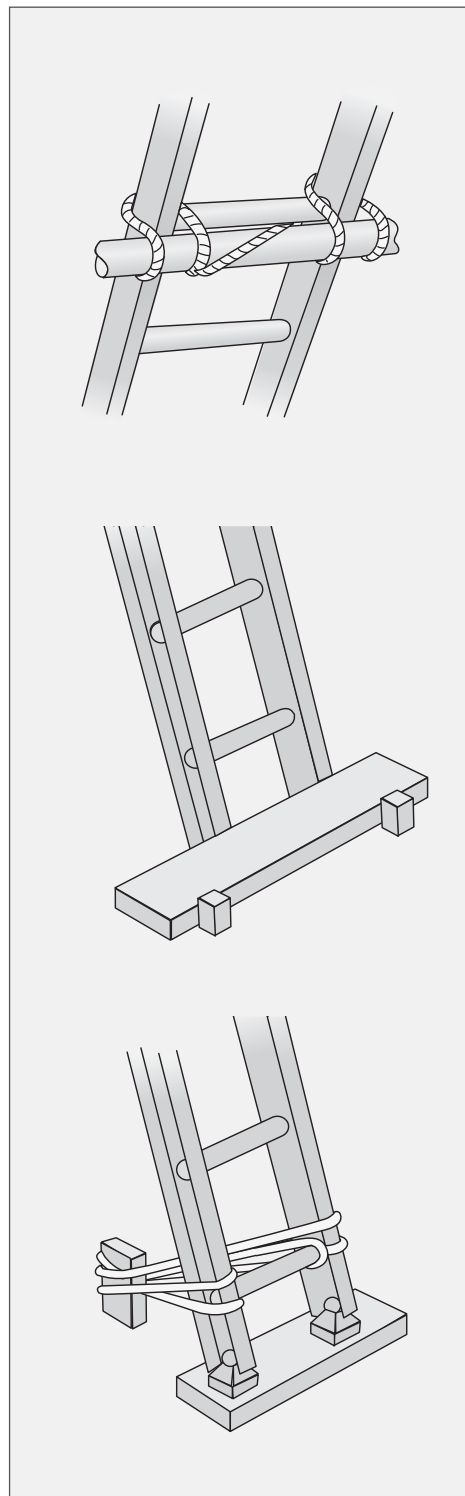


Figure 6 Some effective ways of securing a ladder.

Part 3 – Working at heights above two metres

172. People using ladders should not:

- handle or use ladders where it is possible for the employee or the ladder to make contact with powerlines
- use metal or metal-reinforced ladders when working on live electrical installations
- set up the ladder in places, such as driveways and doorways, where a person or vehicle could hit it (if necessary, erect a barrier or lock the door shut)
- use a stepladder near the edge of an open floor, penetration, or on scaffolding to gain extra height
- over-reach (the employee's belt buckle needs to be within the ladder stiles throughout the work)
- use any power (air, hydraulic, electric or battery) equipment or tool, specifically designed to be operated with two hands, such as concrete cutting saws and circular saws
- use tools that require a high degree of leverage type force (such as a pipe wrench or pinch bars) which, if released, may cause the user to over-balance or fall from the ladder
- carry out work such as arc welding or oxy cutting
- work over other people, or
- allow anyone else to be on the ladder at the same time.

173. Except where additional and appropriate fall protection equipment is used in conjunction with the ladder, any person using a ladder should not:

- face away from the ladder when going up or down, or when working from it
- stand on a rung closer than 900mm to the top of a single or extension ladder
- stand higher than the second tread below the top plate of any stepladder.

174. Figure 8 illustrates some unsafe practices which employers need to ensure do not occur on their sites.

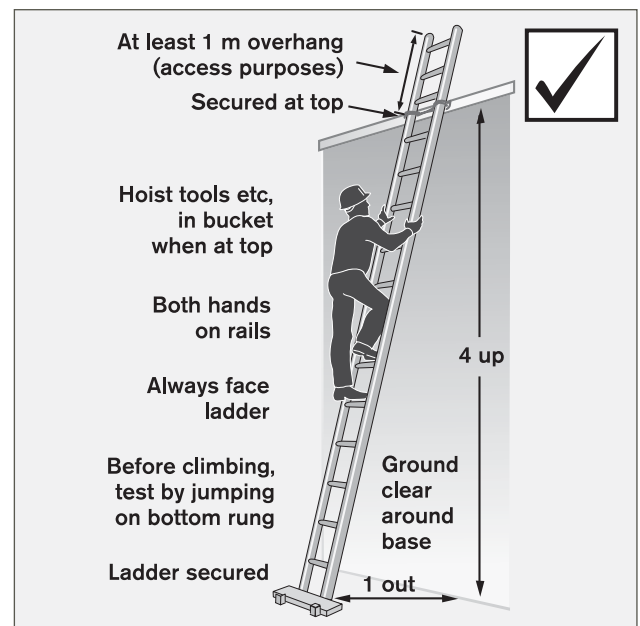


Figure 7 Acceptable ladder use.

Part 3 – Working at heights above two metres

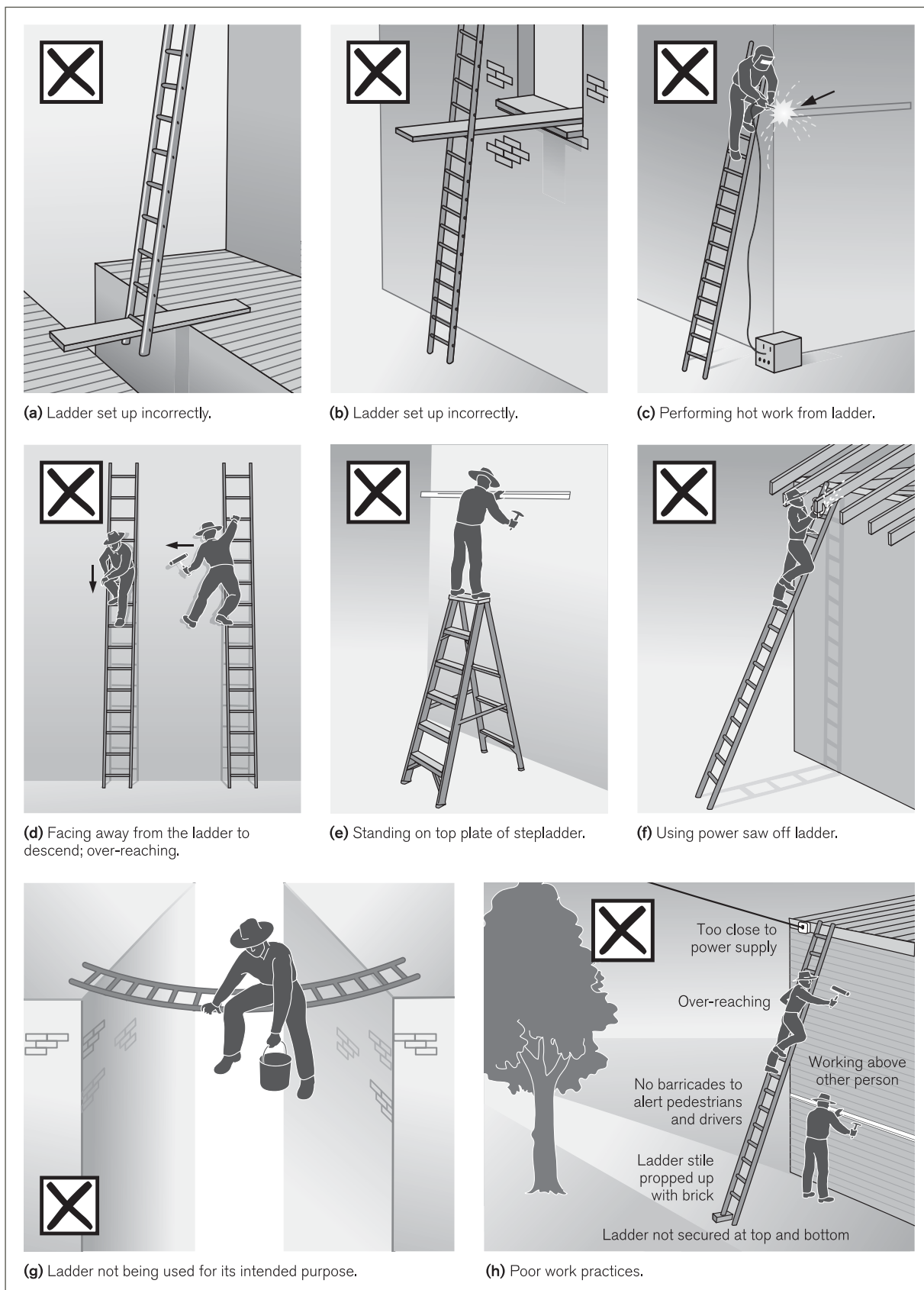


Figure 8 Examples of unsafe ladder use.

Part 3 – Working at heights above two metres

Ladder maintenance

175. Ladders need to be regularly inspected by a competent person. Ladders with any of the following faults need to be replaced or repaired by a competent person:
- Timber stiles warped, splintered, cracked or bruised.
 - Metal stiles twisted, bent, kinked, crushed or with cracked welds or damaged feet.
 - Rungs, steps, treads or top plates which are missing, worn, damaged or loose.
 - Tie rods missing, broken or loose.
 - Ropes, braces, or brackets which are missing, broken or worn.
 - Timber members that, apart from narrow identification bands, are covered with opaque paint or other treatment which could disguise faults in the timber.

Note: This refers to the purchaser painting a ladder, not painting that is integral to the ladder's manufacturing process.

176. For more information about the safe use of ladders go to worksafe.vic.gov.au.

Administrative controls

177. An 'administrative control' is a system of work or a work procedure that is designed to reduce a risk, but does not include a physical control or the use of personal protective equipment. [OHS Regulations r5](#)
178. Administrative controls must only be used when it is not reasonably practicable to use a higher order control measure. [OHS Regulations r44\(5\)](#)
179. Administrative controls are often used to support other fall protection measures. They may also be used to limit the time employees are exposed to a fall hazard or the number of employees involved in the task.
180. If an administrative control is used as the only means of reducing the risk associated with a particular task, the employer must, before the task is undertaken, record:
- a description of the administrative control used, and
 - a description of the task to which the administrative control relates. [OHS Regulations r46\(1\)](#)
181. The preparation of a SWMS in accordance with regulation 327 of the OHS Regulations is taken to be compliance with this duty. [OHS Regulations r46\(4\)](#)

Part 3 – Working at heights above two metres

Recording administrative controls

182. If a task is routinely carried out, it may be appropriate to record a standard safe work procedure for the task. An employer may make a generic record in respect of a task to which an administrative control relates if the task will be undertaken in the same or similar circumstances at more than one workplace or at more than one area within a workplace. OHS Regulations r46(2) However, the record must include a description of the task to which the administrative control relates. OHS Regulations r46(1)(b) A generic record cannot be relied on if the task is undertaken in conditions that are not the same or similar, for example if there is variation in the working environment.
183. The employer must keep the records until the work covered by the administrative control has been completed. OHS Regulations r46(3)
184. If relying on administrative controls, a high level of training and supervision should be provided to ensure that the safe work procedure is being followed. The procedures should be regularly reviewed to determine their effectiveness.

'No-go' areas

185. 'No-go' areas can be an effective method of making sure people are not exposed to fall hazards. They require adequate delineation from the general work area. They can be used to control the risks of entry to an area where there is an unguarded fall hazard or to areas where work is being undertaken overhead and there is a risk of falling material.
186. Delineation needs to include a physical barrier such as temporary fencing or guardrailing where the distance is less than two metres to the hazard or, where the distance is more than two metres, secured para webbing or barrier tape may be suitable. All controls need to include adequate signage to warn against access to the hazardous area (see figure 9).



Figure 9 Example of signage for a 'no-go' area.

187. Employers need to ensure that relevant information and instruction is provided to construction employees at the workplace (for example on the construction site) about 'no-go' areas and ensure there is adequate supervision so that unauthorised employees do not enter the 'no-go' area.

Part 3 – Working at heights above two metres

Permit systems

188. Permit systems ensure that only competent people trained in the use of appropriate control measures work in an area where there is a fall hazard. For example by tagging all access points to a scaffold with wording such as *'Only licensed scaffolders permitted on an incomplete scaffold'*, to prevent unauthorised access during erection and dismantling.

Organising and sequencing of work

189. Work needs to be organised so that people do not increase the risk of a fall for themselves or others. For example, by sequencing jobs so that different trades are not working above or below each other at the same time. Work should be planned so that tasks are not performed for extended periods from a ladder and work at height is minimised in extremely hot or cold weather.

Safe work methods for common tasks

190. This section identifies common tasks in the construction of a typical one or two storey house and describes risk control methods that eliminate or reduce the risk of falls associated with these tasks, so far as is reasonably practicable.
191. Some of these methods rely solely on administrative controls and must therefore be documented where there is a risk of a fall over two metres (see paragraphs 177–184). **OHS Regulations r46(1)** As set out in paragraph 181, where an employer adopts an administrative control documented in a SWMS, no further recording of the control is required.
192. Administrative controls must only be used for risks associated with a fall if it is not reasonably practicable to use higher order controls. **OHS Regulations r44(5)** In addition to the requirements set out in paragraphs 177–184, administrative controls should only be used:
- for the particular task described
 - to the maximum height stated for the safe work method, and
 - supported by the appropriate level of training, instruction and supervision.

Part 3 – Working at heights above two metres

Framing tasks

Floor laying

193. In order to construct a solid work area for the construction or erection of wall frames, flooring needs to be laid to the ground and upper floors at the earliest opportunity.

Note: Working from open floor joists is an unacceptable work practice for any task.

194. Laying flooring is a task that potentially exposes employees to the risk of both internal and external falls. Sites with steep slopes increase the potential fall heights.
195. The laying of floor sheets needs to begin adjacent to an internal or external access point that provides initial fall protection for employees. Laying of sheets needs to then proceed using a safe work procedure that prevents employees from falling over the leading edge.
196. Where strip flooring is to be installed, temporary sheet flooring may be laid as fall protection. See paragraph 203 for information about guarding stairwells and voids.

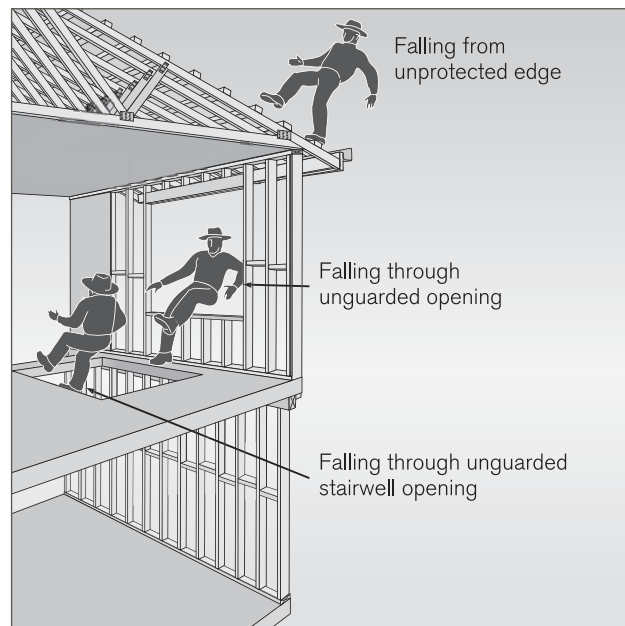


Figure 10 Potential falls in the housing construction industry.

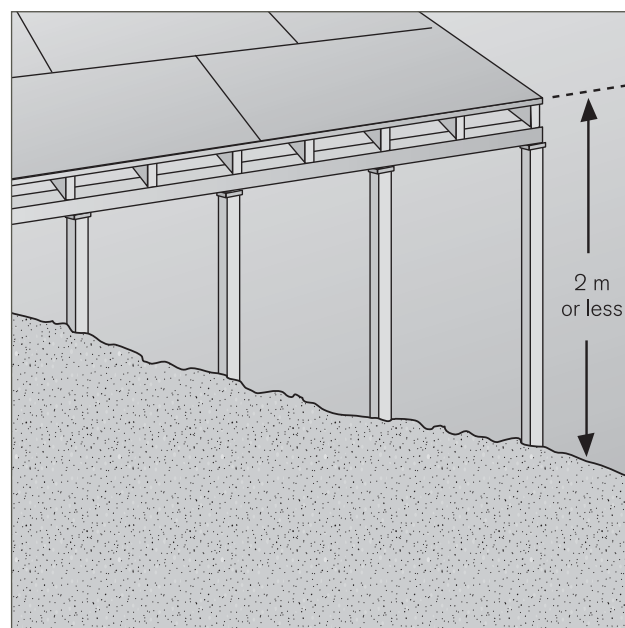


Figure 11 Sub-floor with sheet flooring (fall height two metres or less).

Part 3 – Working at heights above two metres

Laying flooring – fall height greater than two metres

197. Prior to laying flooring perimeter edge protection needs to be provided. This may be external scaffolding or guardrailing as shown in figures 12 and 13.
198. An employer must, so far as is reasonably practicable, provide and maintain for employees a working environment that is safe and without risks to health. OHS Act s21 This includes providing safe access and egress to the floor laying area. One method of providing suitable access is by the construction of a temporary staircase.

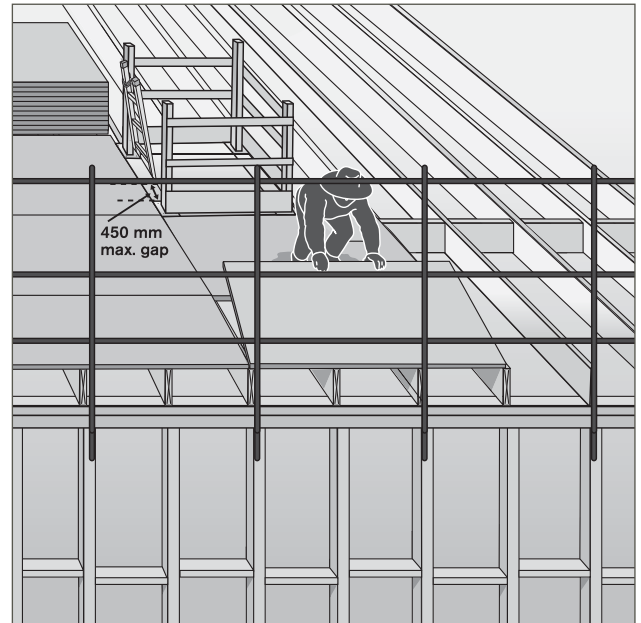


Figure 12 Laying sheet flooring at upper level.

Part 3 – Working at heights above two metres

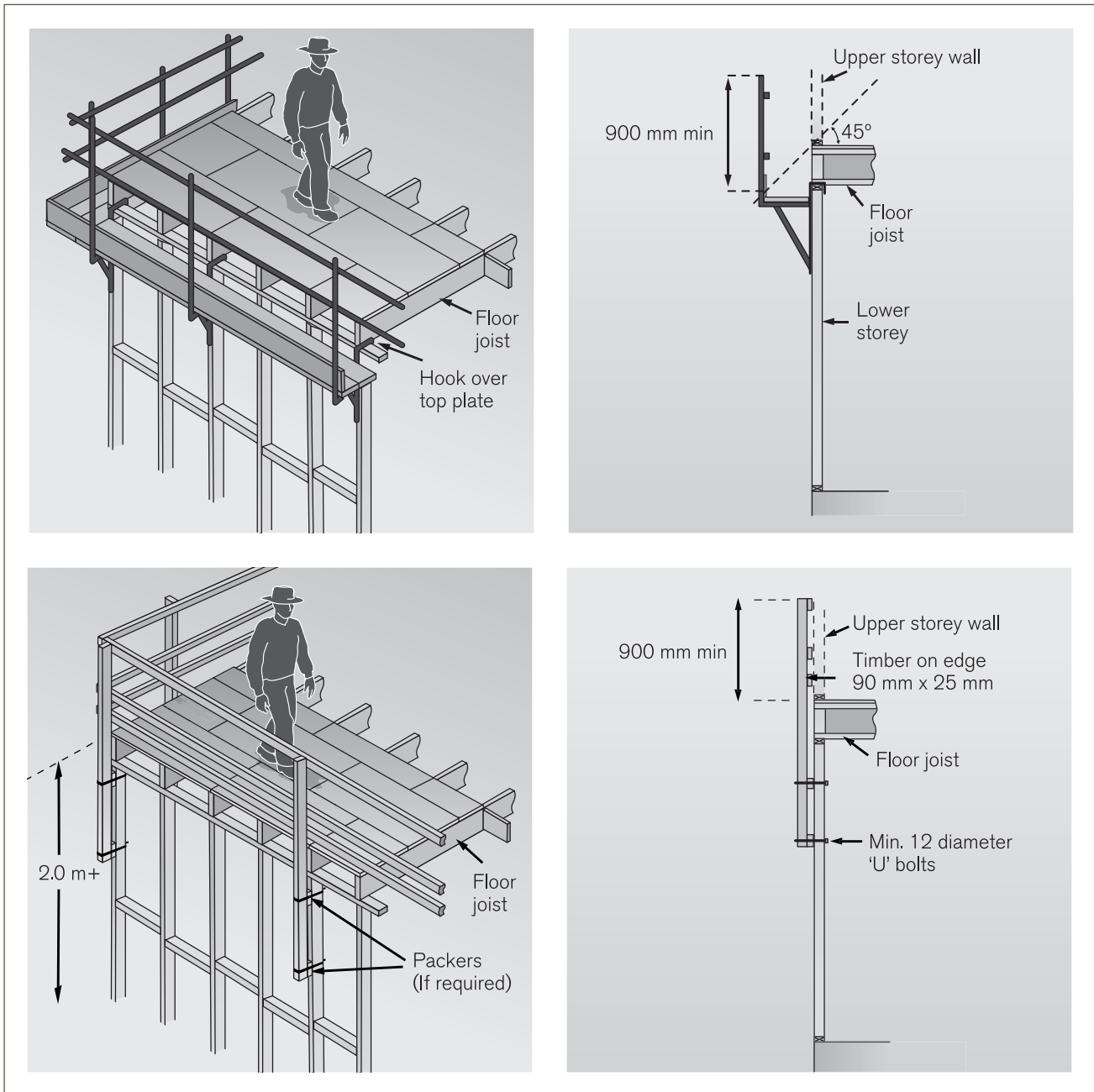


Figure 13 Examples of upper floor edge protection.

Part 3 – Working at heights above two metres

Fixing ceiling joists and upper level floor joists

199. The setting out and nailing of ceiling joists or upper level floor joists needs to be done by working off scaffolding set upon the floor below. Trestle scaffolds may be used as shown in figure 14.

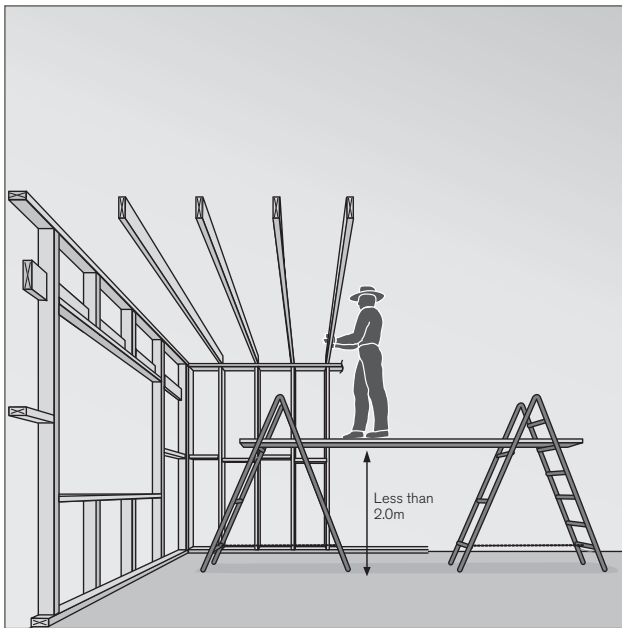


Figure 14 Installing ceiling or upper level floor joists.

200. Employers need to ensure that no person “walks” the external top plate.
201. Where scaffolds are not suitable, the work may be done using ladders from the floor below.
202. For more information on the use of trestle scaffolds see paragraphs 123–127.

Guarding openings

203. Prior to any work proceeding at floor level all stairwells, atriums and voids need to be sturdily guarded, covered with an industrial safety net or sheeted over, regardless of the fall distance from the upper level floor. Guardrailing needs to be provided in accordance with paragraphs 128–134 of this Code. In particular, toeboards need to be fitted to prevent tools and materials from being kicked into the void.

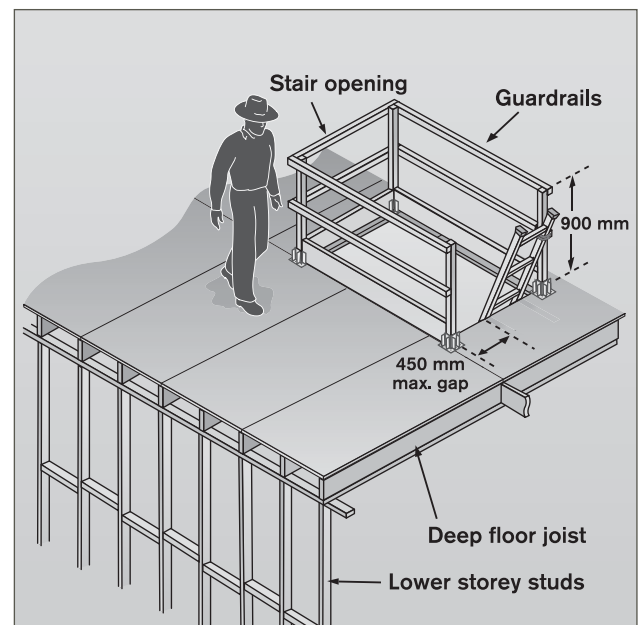


Figure 15 Void at upper level guarded (edge protection omitted for clarity).

Wall framing

204. Before work on wall framing commences, employers should ensure that:
- sheet flooring has been laid
 - openings have been guarded, and
 - edge protection is provided.

Part 3 – Working at heights above two metres

205. When a person is working in the vicinity of a void from a trestle scaffold, stepladder or similar, they are at increased risk of falling over the guardrail and through the opening. The opening needs to be covered with a proprietary system, temporary timber sheeting, an industrial safety net or similar – even if guardrails have been erected around it.
206. Any coverings or temporary floors and their supports need to be of robust construction capable of withstanding impact loads from any potential falls.
207. Window or door openings in external wall frames need to be fitted with guardrails prior to the removal of temporary external guardrailing or other control measures.
208. Where the potential fall height for people constructing or erecting wall frames is more than two metres, edge protection needs to be provided as shown in figure 13 and figure 16.

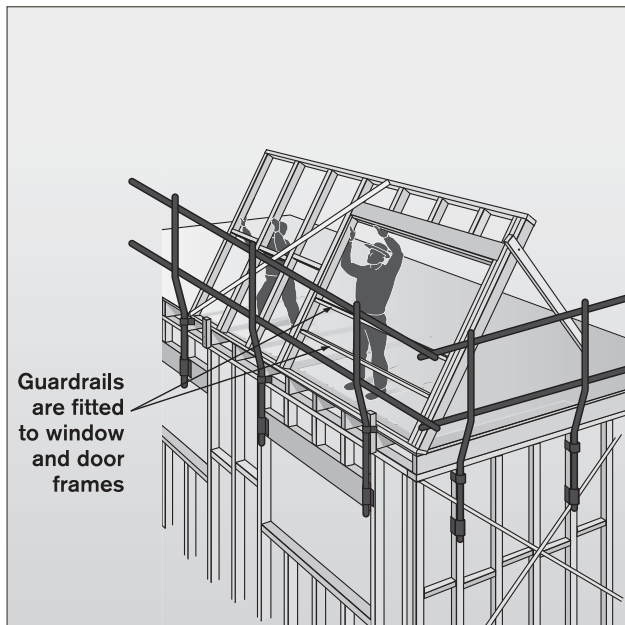


Figure 16 Erecting upper level wall frames.

Installing prefabricated roof trusses

209. Where practicable, roof trusses need to be placed by crane on the wall top plates at the time of delivery. The truss erector, supplier and transporter should liaise to confirm the order in which the trusses are to be loaded onto the truck. The trusses should be able to be unloaded at the site in the order that minimises the amount of handling needed to be done by the truss erectors. When working at height, the erectors should be able to access the next required truss from the top of the truss stack.
210. The builder, in consultation with relevant subcontractors, needs to ensure that any locations designated for the landing of trusses will not overload the wall frames. Where trusses have not been landed directly onto the top plates, a safe system of lifting the trusses to the upper level needs to be developed. Employers need to ensure that employees do not stand on the top plate to receive roof trusses passed up from below.
211. The erection of roof trusses involves both internal and external fall hazards.

Part 3 – Working at heights above two metres

212. If it is proposed to erect trusses from internal wall top plates or from scaffold planks supported on internal wall top plates, the employer(s) should ensure that:
- no person works closer than 1.5 metres to an external wall (see figure 17), including gable end walls
 - planks are adequately supported across their spans, including:
 - the allowable spans for timber planks are given in table 2
 - laminated timber, aluminium and steel planks need to be used in accordance with the manufacturers' directions
 - no person is exposed to the risk of a fall into a stairwell or other void.

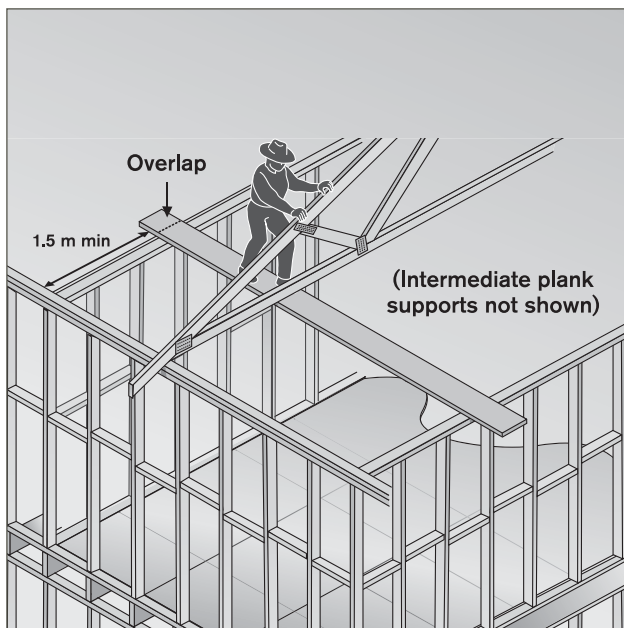


Figure 17 Installing roof trusses (fall protection for persons working at the perimeter has been omitted for clarity).

213. Employees locating and fixing trusses at the perimeter of a building should work from an external scaffold or from trestle scaffolds set up on the floor as depicted in figure 18. Alternatively such work may be undertaken from a ladder in accordance with paragraphs 162–176.
214. Employers need to ensure that no one “walks” the external top plate, unless a system of physical fall protection has been provided to control the risk of an external fall.
215. If work is to be carried out from trestle scaffolds near window and door openings an additional guardrail may be necessary. Standard height guardrails will be too low to prevent a person falling from the trestle scaffold through the window or door opening.
216. Stair and void openings should be covered as described in paragraph 203.
217. For more information about installing roof trusses see **Appendix D – Safe erection of roof truss checklist**.

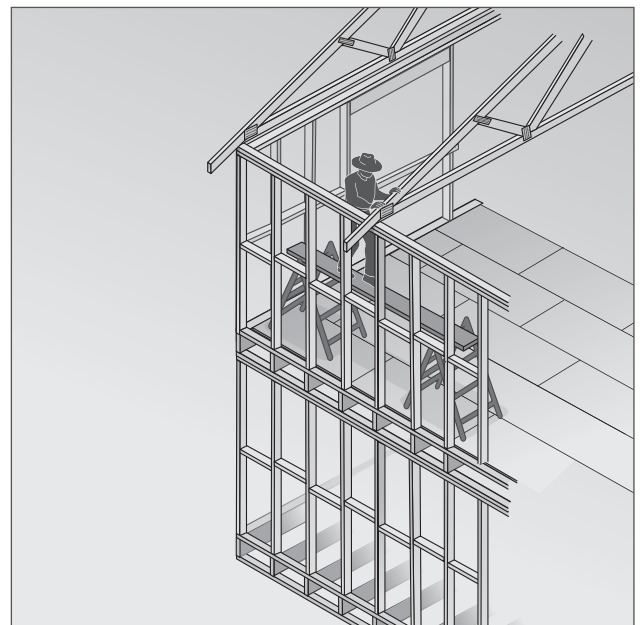


Figure 18 Installing roof trusses.

Part 3 – Working at heights above two metres



Figure 19 Truss erection – internal support (fall protection for persons working at the perimeter has been omitted for clarity).

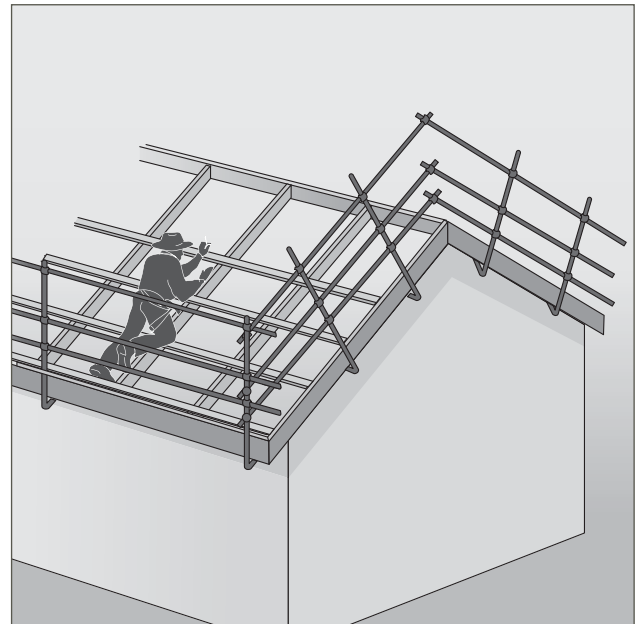


Figure 20 Fixing roof battens to trusses.

Fixing roof battens to trusses

218. Where there is a risk of a fall internally, the employer should implement internal fall protection. If it is not reasonably practicable to provide internal fall protection for employees fixing roof battens to trusses, the employer needs to reduce the risk by ensuring that:

- if truss spacing does not exceed 600mm centres, the batten spacing does not exceed 900mm centres, or
- if truss spacing is greater than 600mm, the batten spacing does not exceed 450mm centres and the battens are of sufficient strength to support employees undertaking roofing work.

219. If truss spacing exceeds 900mm and batten spacing exceeds 450mm, other fall protection needs to be provided in accordance with the hierarchy of control.

Constructing a conventional roof

220. During the construction of a conventional roof, employees should not “walk”, or work closer than 1.5 metres to the external top plate unless a system of physical fall protection has been provided to control the risk of an external fall.
221. Employees locating and fixing rafters at the perimeter of a building should work from an external scaffold or from trestle scaffolds set up on the floor. Alternatively such work may be undertaken from a ladder in accordance with paragraphs 162–176.
222. When constructing a conventional roof, ceiling joists and hanging beams can be passed up internally through a stair opening or externally through the upper level wall frame.

Part 3 – Working at heights above two metres

223. Where ceiling joists are erected prior to pitching the rafters, the placement of the ridge beam, and the fixing of rafters to it, may be done from planks placed on the ceiling joists, provided the conditions listed in paragraph 212 are maintained. Where ceiling joists are not erected, a work platform needs to be provided for framers to work from.
224. Framers working at the external wall need to work internally from either scaffolding or ladders as described in paragraph 213, or from an external perimeter scaffold. An external working platform will also provide a work platform for tasks such as trimming rafters and installing eaves. Where a bracket scaffold system is used, the wall frames need to be braced as necessary to ensure adequate strength and to prevent excessive deflection.
225. Where practicable, roofing members need to be pre-cut at ground level.

Fixing fascias and gutters

226. On eaveless houses, fascias and gutters may be installed by working from trestle scaffolds or ladders located inside the house frame.
227. Where the design involves eaves, an external platform needs to be provided for fascia and gutter installation work.
228. All external work platforms above two metres need to be at least two planks (450mm) wide and be fitted with guardrailing (see figure 21).

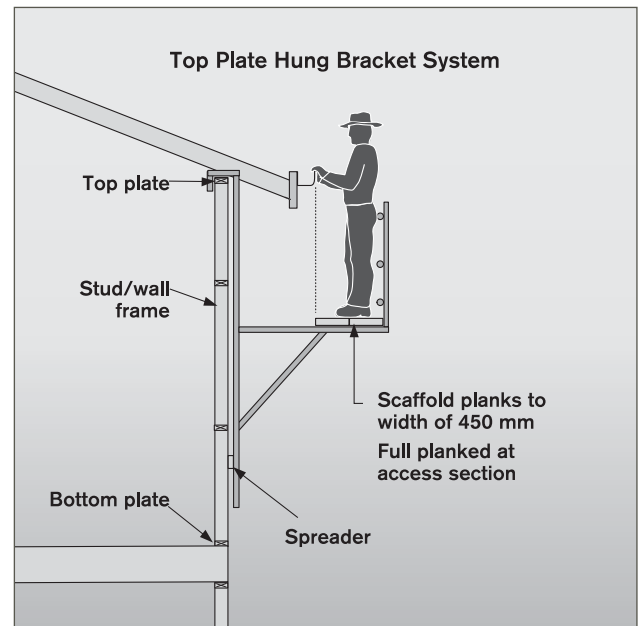


Figure 21 Fixing gutters using a typical bracket scaffold.

229. Single scaffold planks should only be used where the fall height does not exceed 1.5 metres, unless guardrailing is fitted (see table 5). For example, scaffolds with a fall height above 1.5 metres and up to two metres should have either:
- two planks, or
 - a single plank and guardrailing.
230. Employers have general duties to provide a safe working environment in relation to the prevention of falls from two metres or less (see paragraph 15 and Part 4 of this Code). This includes managing any risks arising from impalement or other hazards in the fall zone (eg star pickets, brick bats or debris).

Part 3 – Working at heights above two metres

Note: To reduce risks associated with hazardous manual handling, work platforms need to be constructed at a height that enables work to be performed between an employee's hip and shoulder. For more information see the *Hazardous manual handling compliance code*.

231. Bracket scaffolds need to be erected from within the structure, so that the upper level wall frame provides fall protection for the erectors.
232. Due to the open internal face of a bracket scaffold, there is a risk of objects falling from the scaffold. The area below the scaffold should not be accessed while work is being performed.

Table 5 – Fixing fascias and gutters: work platforms below and above two metres

	0 – 1.5m	1.5+ – 2m	2m +
	General duties to control fall risks from two metres or less apply under the OHS Act		Duties to control falls risks above two metres apply under the OHS Regulations.
Single plank work platforms	Suitable	Suitable when fitted with guardrailing	Not suitable
Double plank work platforms	Suitable	Suitable	Suitable when fitted with guardrailing

Part 3 – Working at heights above two metres

Roofing tasks

233. Roofing work involves several tasks which potentially expose employees to the risk of falls both through and from the edge of the roof structure.
234. This section relates to the provision of fall protection for roofing work. This Code does not provide information where the roofing work involves:
- brittle roofing materials such as fibreglass or cement sheets (see the *Prevention of falls in general construction compliance code*)
 - dismantling or demolition work (see the *Demolition compliance code*).

Risk controls – general

Access/egress

235. An employer must, so far as is reasonably practicable, provide and maintain for employees a working environment that is safe and without risks to health. **OHS Act s21** This includes providing employees with safe roof access to undertake works. The access should incorporate the following as appropriate to the edge protection system being used:
- Employees need to be able to access the roof through the edge protection without having to climb over the top or mid-rail.
 - Guarding to openings needs to be self-closing.
 - Access ladders need to be secured against movement.
 - Where a platform is located more than 300mm below the roof edge, additional means of access to the roof needs to be provided.
 - Where a tile elevator is used, it needs to be installed so that tiles can be received at the roof level.

Work up to two metres

236. Where employees working on a roof are not exposed to the risk of an external fall of greater than two metres, and the pitch of the roof is not greater than:
- 26 degrees, or
 - 10 degrees, where the roof is slippery from the presence or likelihood of surface moisture, oil or other conditions,
- guardrailing or other physical fall protection should be provided, where reasonably practicable.
237. Where the primary risk control measure is the establishment of a cleared area around the perimeter of the building known as a “clear zone”, the clear zone should:
- extend two metres out from the edge of the gutter line
 - consist of natural soil
 - be barricaded where there is a risk of other people entering the zone
 - be kept clear of all hard surfaces, impalement hazards (including fences, set out hurdles, stumps and partial verandah structures), building materials (including brick pallets and timber), and other obstacles.
238. For more information about working at heights not exceeding two metres, see Part 4 of this Code.

Part 3 – Working at heights above two metres

All other roofwork

239. Where the risk of a fall (including the seriousness of the likely injury) increases, additional control measures need to be implemented. A system of physical fall protection should be provided under any of the following circumstances:

- Where an employee may be exposed to the risk of a fall greater than two metres.
- Where a two metre clear zone cannot be established.
- Where the two metre clear zone is no longer being maintained.
- The pitch of the roof is greater than:
 - 26 degrees, or
 - 10 degrees, where the roof is slippery from the presence or likelihood of surface moisture, oil or other conditions.

Guardrail systems for roofing work

240. Guardrail systems need to include top, mid and bottom rails or toeboards. Where toeboards are used in place of a bottom rail they need to be able to withstand the likely impact loads.

241. The design and testing of guardrail systems need to comply with AS/NZS 4994.1 *Temporary edge protection for, Part 1 General requirements*.

242. The installation of guardrail systems need to be in accordance with AS/NZ 4994.2 *Temporary edge protection, Part 2 Roof edge protection – installation and dismantling*, and include the following:

- Toeboards or mesh infill to prevent tools, materials or debris falling from the roof, unless a two metre no go zone has been established to prevent people entering the area below.
- A clear gap between rails not exceeding 450mm. The clear distance between a mid-rail and a toeboard or bottom rail should not exceed 275mm.
- No gap between the roof edge, including the gutter, and a guardrail located outside the roof line exceeding 100mm.
- A clear distance between the roof cladding and the bottom rail of not less than 150mm and not greater than 275mm.
- An effective guardrail height above the roof surface of not less than 900mm (for roofs over 10 degrees pitch the effective height needs to be measured from a point 300mm inside the roof edge).
- Infill panels where the pitch of the roof exceeds 26 degrees.

Part 3 – Working at heights above two metres

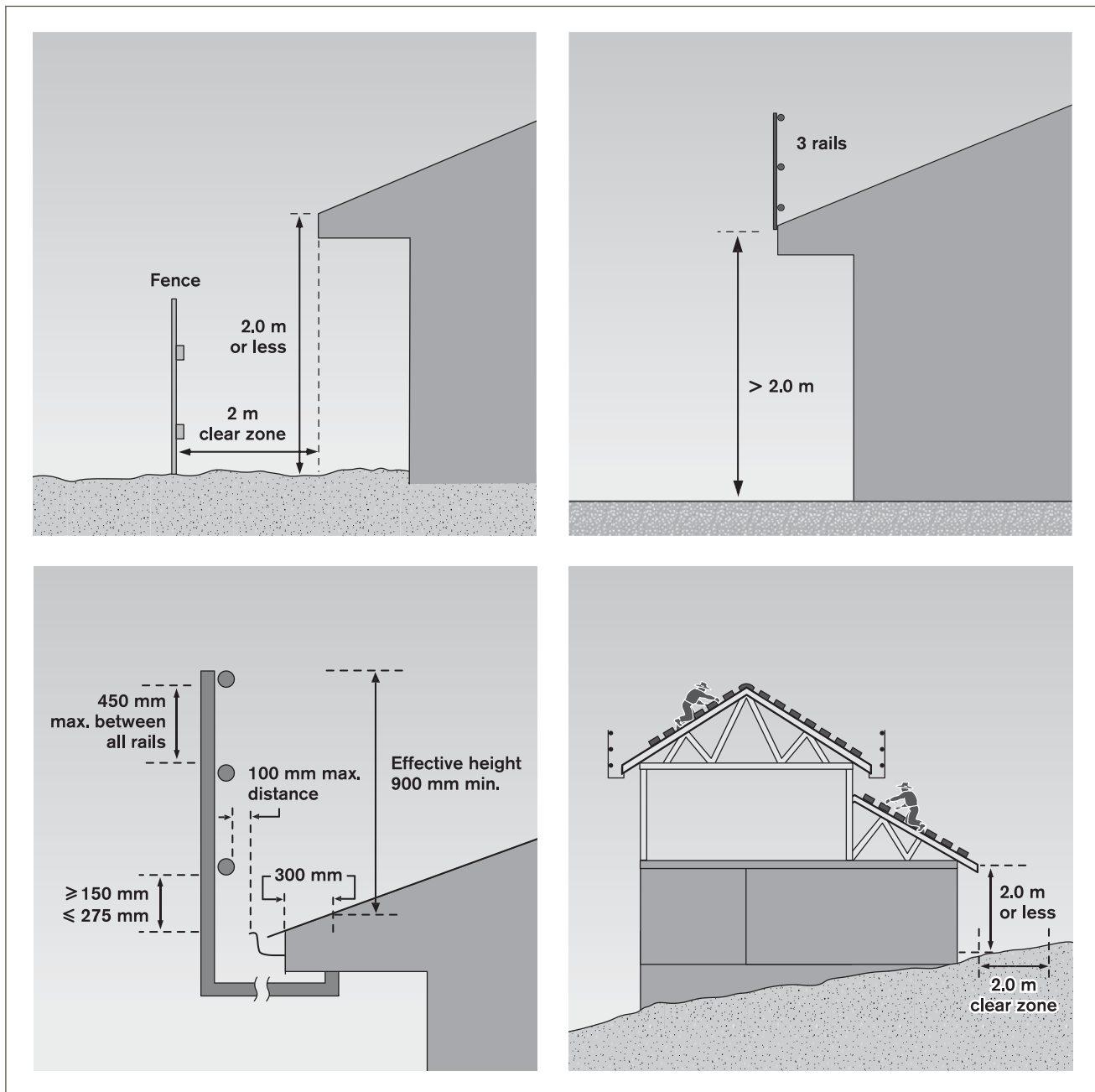


Figure 22(a) Guardrail systems – maximum roof pitch 26 degrees or 10 degrees where slippery.

Part 3 – Working at heights above two metres

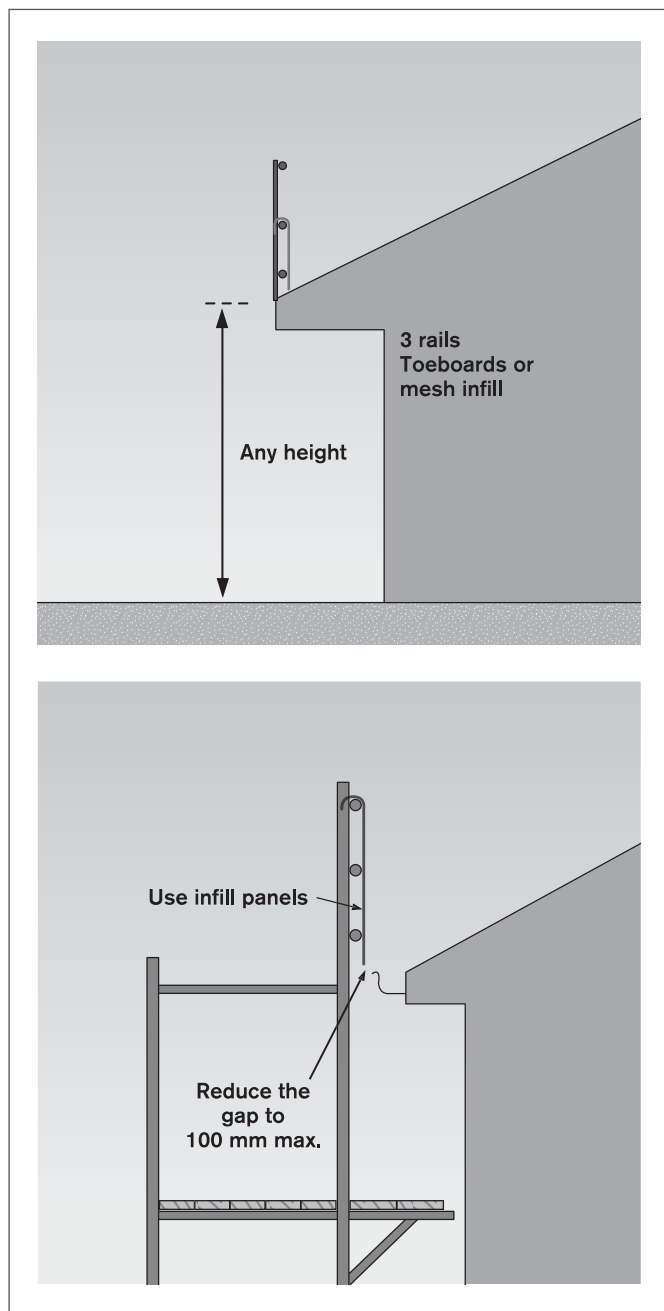


Figure 22(b) Guardrail systems – steeper roofs, maximum pitch 35 degrees.

Catch platforms

243. Catch platforms may be constructed from many types of scaffolding systems. Catch platforms used to control the risk of a fall should:

- where the roof pitch is not greater than 26 degrees, be positioned as close as feasible to the underside of the roof. The platform should never be more than one metre below the roof edge
- where the pitch of the roof is greater than 26 degrees, be positioned as close as feasible to the underside of the roof. The platform should never be more than 300mm below the roof edge. The gap between the platform edge and the gutter line should not exceed 100mm
- have a guardrail installed with 450mm midrails, with an effective height of not less than 900mm above the point where the roofline projection intersects the guardrailing
- where there is an increased risk of falling due to slippery roofing materials such as fully glazed tiles or the presence of dust, moisture or oil on roofing, be positioned not more than 300mm below the roof edge, regardless of roof pitch
- incorporate a rail or toeboard within 100mm of where the roof line projection intersects the guardrailing
- incorporate a toeboard at the platform's outer edge
- be extended to finish not more than 225mm from the building face or be fitted with edge protection on the platform's inner edge
- be kept clear of equipment, materials and debris.

Part 3 – Working at heights above two metres

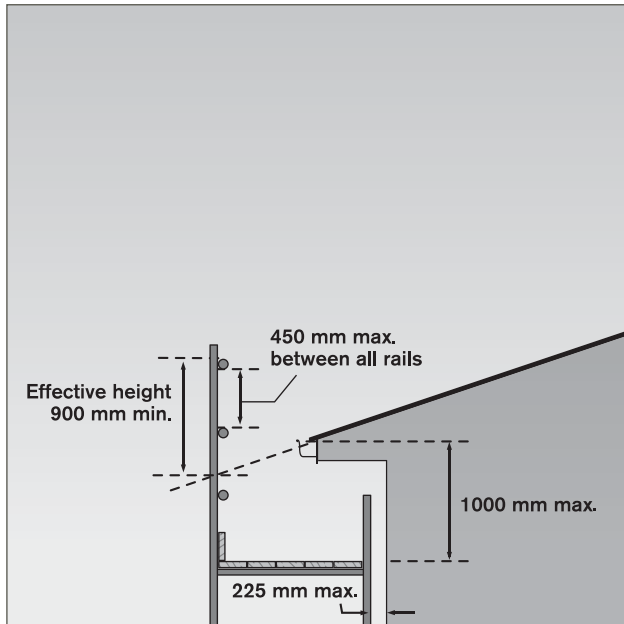


Figure 23(a) Catch platforms – maximum roof pitch 26 degrees or 10 degrees where slippery.

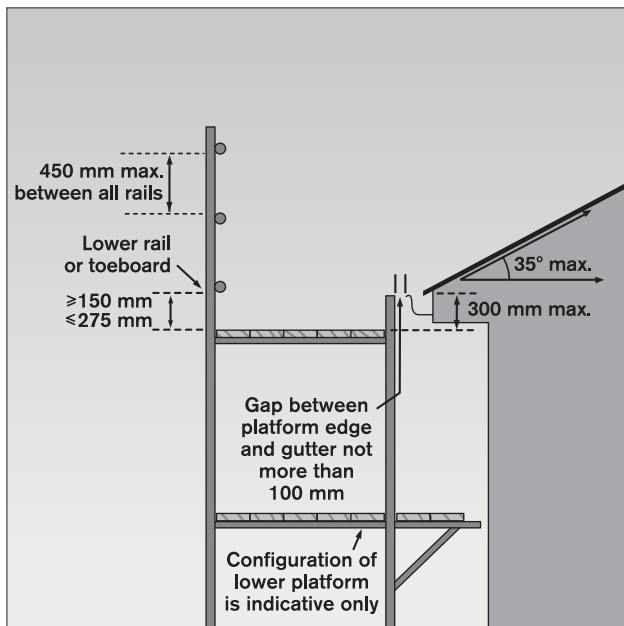


Figure 23(b) Catch platforms – steeper roofs, maximum pitch 35 degrees.

Roof pitch greater than 35 degrees

244. Where the slope of a roof exceeds 35 degrees, the roof is an inappropriate surface to stand on even with guardrailing or a catch platform. In these circumstances, an employer needs to ensure that a system is in place to prevent employees sliding and to prevent falls from the perimeter, comprising one or more of the following:

- A work positioning system.
- A roof ladder.
- A scaffold platform, located at the roof edge.

Installation of sarking – tile roofing

245. If sarking is used, the laying of sarking needs to be done simultaneously with the installation of the battens. Lay the first sheet of sarking and install battens over the sheets, then lay the second sheet and install battens from the bottom of the roof to the apex.

Installation of perimeter battens – metal roofing

246. Fastening of the perimeter battens to the hips and valleys may be done by affixing those parts of the perimeter battens that can be easily reached from a position on ladders or from inside the trusses. During the sequential battening of the body of the roof, the remaining length of the perimeter battens can then be secured.

Part 4 – Working at heights not exceeding two metres

247. A fall from almost any height can result in injury. A person falling onto a hard surface such as concrete may suffer serious injury or death if they strike their head first, even if the fall is from a low height. If the ground surface is asphalt or packed earth, a fall of one metre has the potential to cause fatal or serious injury.
248. Risks associated with falls from heights of two metres or less are not covered under Part 3.3 of the OHS Regulations. However, section 21 of the OHS Act imposes duties on employers to, so far as is reasonably practicable, provide and maintain a working environment for its employees that is safe and without risks to health. This includes managing risks associated with falls of two metres or less. In accordance with section 20(1) of the OHS Act, employers have a requirement to eliminate risks associated with falls of two metres or less so far as is reasonably practicable. If it is not reasonably practicable to eliminate the risks to health and safety, employers are required to reduce the risks so far as is reasonably practicable, having regard to the matters set out in section 20(2) of the OHS Act.

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on certain matters related to health or safety that directly affect or are likely to directly affect them. The duty to consult applies when making, for example, decisions about risk control measures and proposing changes that may affect the health or safety of employees at the workplace. [OHS Act s35](#)
See page 8.

Risk management

249. In situations where people are working at heights not exceeding two metres, the standard risk management process should be adopted. For more information on the risk management process, see paragraph 20 and Part 2 of this Code.

Information, instruction and training

250. An employer must provide information, instruction and training to employees as is necessary to enable them to perform their work in a way that is safe and without risks to health. [OHS Act s21\(2\)\(e\)](#) Employers need to ensure employees understand the hazards, risks and control measures identified in the risk management process for working at heights not exceeding two metres.
251. The amount and type of information, instruction and training that needs to be provided will depend on the risks involved. The complexity of the work procedures and the type of fall prevention measures adopted also need to be taken into account.
252. For more information on duties in relation to information, instruction, training and supervision see paragraphs 28–38.

Part 4 – Working at heights not exceeding two metres

Preventing falls of two metres or less

253. In accordance with section 20(1) of the OHS Act, employers have a requirement to eliminate risks to health and safety so far as is reasonably practicable, including risks of falls from two metres or less. If it is not reasonably practicable to eliminate the risks, employers are required to reduce the risks so far as is reasonably practicable. See paragraph 248 for more information.
254. Reasonably practicable solutions for common work tasks performed at heights of two metres or less include, when used safely, stilts or portable ladders. These methods should only be used when the task and work environment is suitable.

Stilts

255. Employers should identify all potential stilts hazards such as:
- changes in the level or slope of the work area
 - railings adjacent to edges
 - wall or ceiling features (eg arches, lights, bulkheads) that may restrict movement when using stilts
 - floor penetrations, stairwells and voids
 - windows, and
 - inbuilt furniture.
256. Stilts should not be used when:
- the task is not suitable for stilts (see paragraphs 263–265)
 - an employee is fatigued (see paragraphs 261–262)
 - the stilts are poorly maintained or have not been obtained from a recognised industry supplier (see paragraph 270)
 - employees have not been properly trained in their use (see paragraphs 268–269)
 - walking on stairs
 - the floor level is not solid, changes height or slopes
 - stepping into or over baths or other obstructions
 - used on a non-floor surface, such as tables or trestles
 - the springs are fully compressed (caused when lifting heavy objects or exerting high upward force, such as drilling through overhead structures)
 - standing on void covers that bend from the weight
 - there is absence of a suitable mounting and dismounting platform (see paragraph 267)
 - the ceiling height is greater than three metres.

Part 4 – Working at heights not exceeding two metres

257. Work on stilts should not commence until the work area is 'plaster ready' which, in this case, means:
- floor surfaces are solid, level and can support stilt work activity (for example earthen floors have been concreted)
 - floor surfaces have been cleared, swept and are dry. Stilt workers need to move freely and without stepping over or moving around trip hazards, such as leads to work lights, hoses, packaging or dropped items (nails, screws, etc)
 - plumbing and electrical work has been roughed in with switch positions and access points marked and lighting cables secured
 - furniture is removed and inbuilt furniture, such as kitchen cupboards or architectural features, is isolated or highlighted, and
 - floor penetrations, stairwells and voids are covered or guarded in such a way that they can be clearly seen by stilt workers and offer them protection.

Note: Guardrails effective at normal working heights are unlikely to be effective with stilt workers.

Work Planning and Conduct

258. Stilt workers should not commence work before risk control measures are in place to ensure that:
- other workers cannot affect the immediate work area being used by stilt workers, unless they are working as support for the stilt worker. If this cannot be guaranteed, the work area needs to be taped off or barricaded to prevent access
 - there is a safe means of attaching and removing stilts readily available
 - any waste produced and material dropped by stilt workers is promptly cleared away (by an assistant) from the floor surface they are working on, and
 - emergency procedures detail how stilt workers are to evacuate.

Suitable tasks

259. Stilts should only be used for light duty tasks such as:
- placing of insulation batts
 - installing furring channels
 - patching, touching up and stopping of joints using a trowel
 - fixing cornices
 - minor hand sanding.
260. The stilt worker's torso needs to be vertical whenever possible.
261. Any single period of working on stilts should not be more than two hours. Any further sessions need to be separated by at least thirty minutes of non-stilt tasks. Stilts should not be used by any individual for more than six hours per day.
262. Supervisors need to regularly check that stilt workers are not experiencing fatigue. If stilt workers begin to experience fatigue, they need to immediately remove their stilts.

Part 4 – Working at heights not exceeding two metres

Unsuitable tasks

263. Stilts are not recommended for tasks such as:
- lifting or supporting plaster sheets
 - handling long, heavy or cumbersome objects or items, such as decorative cornices
 - picking up items from below knee level
 - tasks that require the use inappropriate equipment such as trowel boxes, tools with power leads or hoses
 - tasks that require frequent bending of the torso or over-reaching.

Tools and Equipment

264. Stilt workers should only use hand held tools (without leads) such as the following:
- trowel
 - hammer
 - sanding block
 - cordless screw gun.
265. All equipment and materials required by a stilt worker need to be supported by a purpose-built stand (mobile or stationary) that enables the stilt worker to access them without over-reaching or bending down below knee level. The height of the stand needs to be appropriate for the task being performed. Alternatively, tools and materials can be passed up to the stilt worker by another person standing on the floor.

Training, use and maintenance of stilts

266. Plasterers' stilts need to be obtained from a recognised industry supplier. Instructions on their correct use also need to be obtained from the supplier and followed at all times.
267. A rigid platform needs to be used for mounting and dismounting stilts, with the platform at a height equal to or greater than the height of the stilts. Stepladders should not be used for mounting or dismounting. Stepping up and balancing on one stilt then bending to fit the second is also not recommended.
268. Stilts should not be used without proper training. Employers must provide the necessary information, instruction and training to employees to enable them to perform their work safely and without risks to health. [OHS Act s21\(2\)\(e\)](#) Trainees need to be made aware of how the foot and ankle action changes when wearing stilts. Training should also include information on work environment hazards, how to correctly adjust stilts so as to reduce fatigue and poor posture, and a briefing on what injuries can occur from the incorrect use of stilts.
269. The stilt worker needs to gain experience and confidence before working and also before performing tasks such as working with their head up, using tools in both hands or working at maximum height. They need to take every opportunity to remove the stilts when they are not necessary for the task.
270. Stilt components need to be examined regularly and any worn or damaged components replaced immediately. They need to be stored, serviced and maintained in accordance with the supplier's instructions.

Part 4 – Working at heights not exceeding two metres

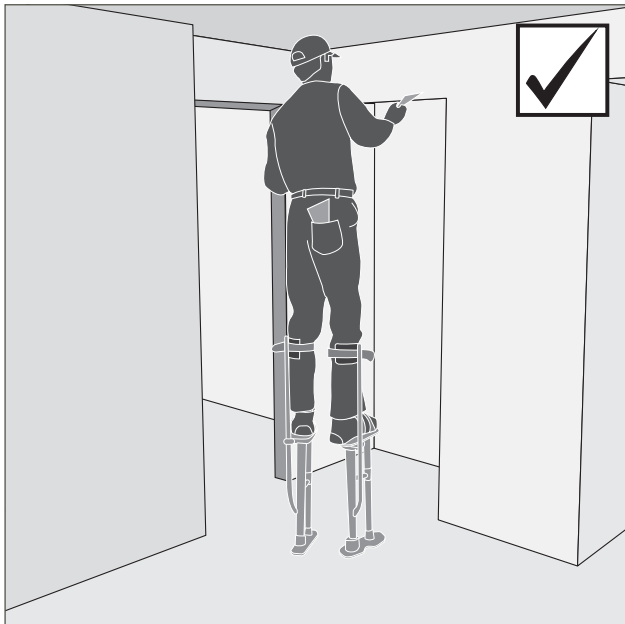


Figure 24 Correct use of stilts – a light duty task being conducted on a clean floor.



Figure 25 Inappropriate activity whilst on stilts – reaching below foot level stresses the knee, ankle, back and stilts.



Figure 26 Inappropriate environment for working on stilts – poor housekeeping of floor surfaces.

Part 4 – Working at heights not exceeding two metres

Portable ladders

271. For general advice on the selection and maintenance of ladders refer to paragraphs 162–176.
272. Persons using ladders should not:
- handle or use ladders where it is possible for the employee or the ladder to make contact with powerlines
 - use metal or metal-reinforced ladders when working on live electrical installations
 - set up the ladder in places, such as driveways and doorways, where a person or vehicle could hit it (if necessary, erect a barrier or lock the door shut)
 - use a stepladder near the edge of an open floor, penetration, or on scaffolding to gain extra height
 - over-reach (the employee's belt buckle needs to remain within the ladder stiles throughout the work)
 - use any power (air, hydraulic, electric or battery) equipment or tool specifically designed to be operated with two hands and which may require the operator to brace themselves against the high level of torque exerted by the tool
 - carry out work such as arc welding or oxy cutting, unless step platforms or other temporary work platforms are not feasible and the task is of short duration and a safe work procedure is followed
 - use tools requiring the use of both hands and dynamic movement such as axes and crowbars
 - use tools which require a high degree of leverage type force which, if released, may cause the user to over balance or fall from the ladder (such as a pipe wrench or pinch bars)
 - work over other people
 - allow anyone else to be on the ladder at the same time.

273. Except where additional and appropriate fall protection equipment is used in conjunction with the ladder, any person using a ladder should not:

- face away from the ladder when going up or down, or when working from it
- stand on a rung closer than 900mm to the top of a single or extension ladder
- stand higher than the second tread below the top plate of any stepladder.

274. A ladder needs to be set up on a surface that is solid, stable and secure. It needs to be set up in the correct manner to prevent it from slipping.

Roofing work

275. For information on roofing tasks with fall hazards of two metres or less, see paragraphs 236–237.

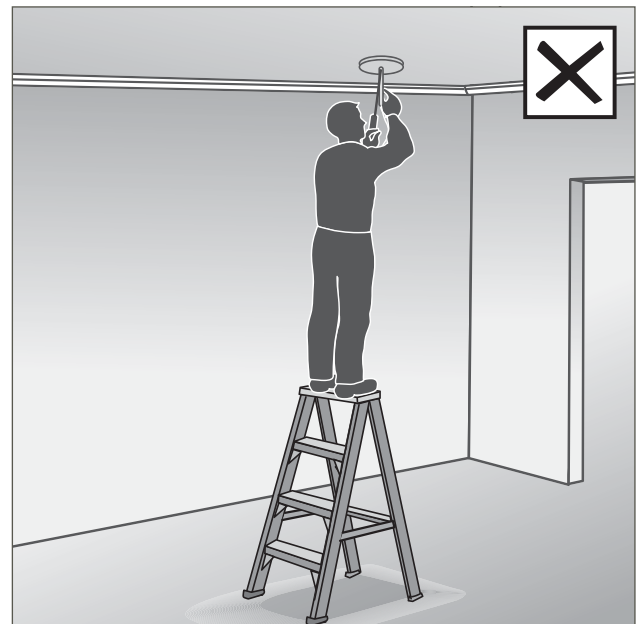


Figure 27(a) Hazard – standing on the top plate of a stepladder.

Part 4 – Working at heights not exceeding two metres

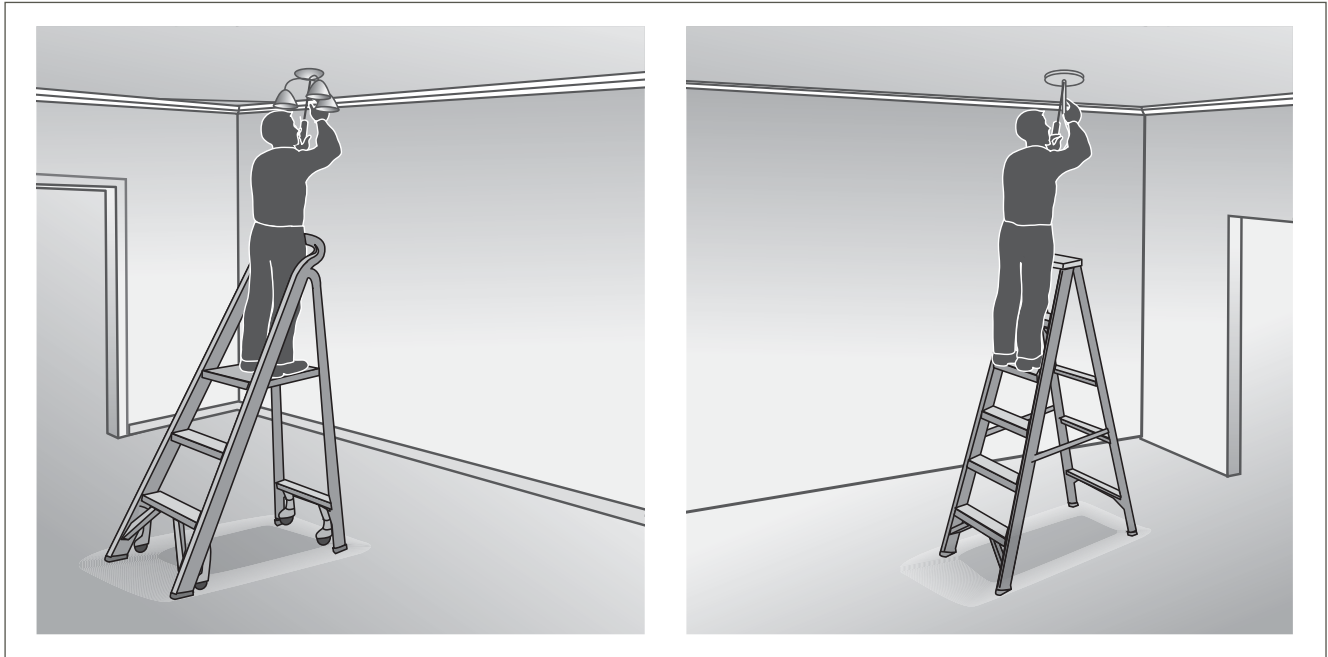


Figure 27(b) A safer alternative – select the right ladder or step platform for the job.

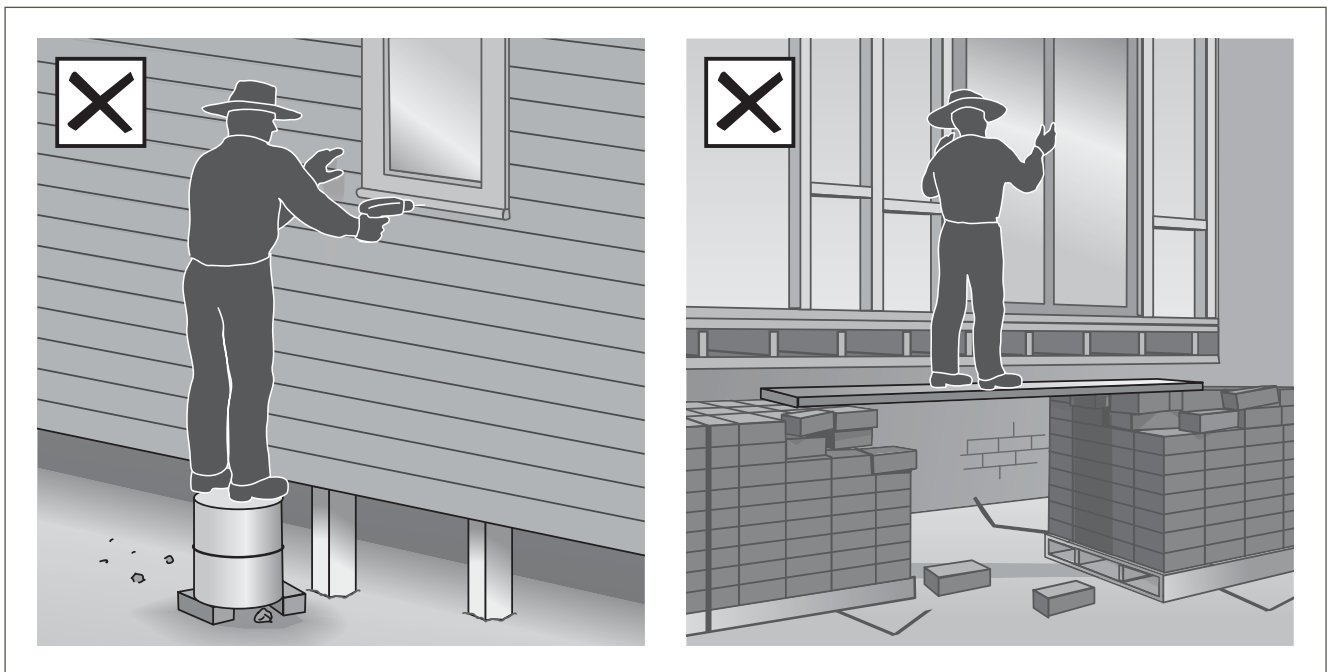
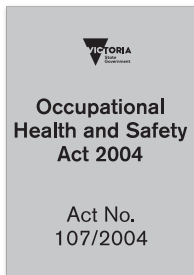


Figure 28 Hazard – makeshift means of gaining height.

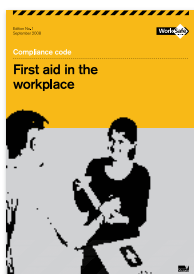
Appendix A – The compliance framework



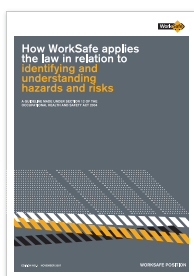
The Occupational Health and Safety Act 2004 (OHS Act) sets out the key principles, duties and rights in relation to occupational health and safety.



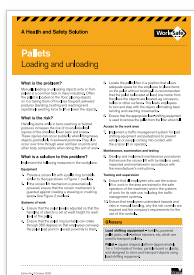
The Occupational Health and Safety Regulations 2017 (OHS Regulations) specify the way in which a duty imposed by the OHS Act must be performed, or prescribe procedural or administrative matters to support the OHS Act (eg requiring licences for specific activities, the keeping of records or giving notice).



Compliance codes provide practical guidance to duty holders. If a person complies with a provision of a compliance code, they are deemed to comply with the OHS legislative duty covered by the code provision. However, compliance codes are not mandatory, and a duty holder may choose to use some other way to achieve compliance.



WorkSafe positions are guidelines made under section 12 of the OHS Act that state how WorkSafe will apply the OHS Act or OHS Regulations or exercise discretion under a provision of the OHS Act or OHS Regulations. WorkSafe positions are intended to provide certainty to duty holders and other affected parties.



Non-statutory guidance includes information published by WorkSafe aimed at building people's knowledge and awareness of OHS issues, risks to health and safety, and the disciplines and techniques that can be applied to manage and control risks. Non-statutory guidance is not mandatory, nor does it provide any *deemed to comply* outcomes for duty holders. This guidance does, however, form part of the *state of knowledge* about OHS.

Appendix B – Documents associated with this compliance code

The references listed below are not incorporated into this compliance code. This means that they do not form part of this compliance code, although they may have regulatory status in their own right. They are included only to provide an indication of sources of further information.

AS 1576 *Scaffolding*

AS 1577 *Scaffold planks*

AS 1657 *Fixed platforms, walkways, stairways and ladders – Design, construction and use*

AS 1891.1 *Industrial fall arrest systems and devices – Safety belts and harnesses*

AS 1891.3 *Industrial fall arrest systems and devices – Fall arrest devices*

AS 1891.4 *Industrial fall arrest systems and devices – Selection, use and maintenance*

AS 2550.10 *Cranes – Safe use – Elevating work platforms*

AS 3566.1 *Self-drilling screws for the building and construction industries, Part 1: General requirements and mechanical properties*

AS 3828 *Guidelines for the erection of building steelwork*

AS 4576 *Guidelines for scaffolding*

AS/NZS 4994.1 *Temporary edge protection, Part 1: General requirements*

AS/NZ 4994.2 *Temporary edge protection, Part 2: Roof edge protection – Installation and dismantling*

Appendix C – Timber scaffolds

Part 1: General

1. This appendix provides guidance for the construction of timber scaffolds where:
 - the vertical distance between the working platform and the lowest level to which a person or object could fall does not exceed 6 metres, and
 - the scaffold supports no more than one full-length working platform.
2. Short working platforms may be set up in different positions on a scaffold provided that not more than one working platform is set up or used in any one bay.
3. All scaffolds need to be designed and constructed in accordance with AS/NZ 1576.1 *Scaffolding – Part 1: General Requirements*. Scaffolds constructed in accordance with Part 2 or Part 3 of this appendix are considered to comply with AS/NZ 1576.1 for the purpose of this Code. Further advice on the safe erection and use of scaffolding may be found in AS/NZS 4576 *Guidelines for scaffolding*.
4. Where it is intended to construct any timber scaffold which:
 - (a) does not comply with Part 2 or Part 3 of this appendix, or
 - (b) has a working platform greater than two metres above the lowest level to which a person or object may fall,

the builder and subcontractor need to ensure that a copy of the detailed design drawings for the scaffold, prepared by a competent person, are kept on site.

5. The timber sizes listed in this appendix are the nominal sizes for dressed seasoned timber. Where the alternative use of unseasoned timber is nominated, the equivalent rough sawn size may be used.

Part 2: Timber scaffolds – maximum two metre lift heights

6. This section provides guidance for all independent and single pole timber scaffolds, where the lift heights do not exceed two metres.

Scaffold components

7. Load bearing structural members used or intended to be used in the construction of a timber scaffold in accordance with this Part, including standards, ledgers, guardrails, midrails, putlogs, braces, ties and rakers, need to have a stress grading of not less than:
 - F8 unseasoned hardwood, or
 - MGP 12 seasoned pine.
8. The minimum cross-sectional dimensions of structural members need to be as specified in paragraphs 18–41 of this appendix.
9. All components intended for use in the construction of a timber scaffold need to be visually inspected for defects prior to each use and components found to be in an unserviceable condition should not be used.

Working platform

10. Working platforms supported by timber scaffolds need to be classified as:
 - light duty, for loads (persons and materials) of up to 225 kg per bay
 - medium duty, for loads (persons and

Appendix C – Timber scaffolds

- materials) of up to 450 kg per bay
 - heavy duty, for loads (persons and materials) of up to 675 kg per bay.
11. The minimum width of working platforms needs to be:
 - 450 mm for light duty working platforms
 - 900 mm for medium duty working platforms
 - 1.0 m for heavy duty working platforms.
 12. Planks used or intended to be used in the construction of working platforms need to be scaffold planks designed to comply with AS 1577 *Scaffold planks*. The maximum spans of solid timber scaffold planks complying with AS 1577 are given in table 2 of Part 3 of this Code.
 13. Scaffold planks forming a working platform should:
 - be of uniform thickness to prevent trip hazards
 - be closely laid across the full width of the scaffold to prevent traps and to prevent material or debris from falling through gaps extend beyond their end putlogs not less than 150 mm nor more than 250 mm
 - be supported by putlogs at spacings not greater than the maximum spacing marked on the plank
 - except at returns or on unusually shaped profiles, be butted rather than lapped
 - where, necessary, be adequately secured against uplift or displacement.
 15. Fixing for ledgers should not be less than:
 - one 12 mm diameter mild steel bolt, nut and washer
 - where the ledger rests on blocking, a 10 mm mild steel bolt, nut and washer. The blocking needs to be a minimum 200 mm long of the same cross sectional area as the ledger and secured by a minimum of two screws to the standard.
 16. Guardrails, midrails, braces and ties need to be fixed with a minimum of two screws.
 17. Putlogs need to be nailed to the upper surface of the ledger to secure them against dislodgement.

Standards

18. Standards need to be vertical and need to be pitched on timber soleplates of sufficient area to distribute imposed loads without observable subsidence.
19. There should not be any cavity under a sole plate immediately below a standard.
20. Where the height of the scaffold requires joints in the standards, they need to be staggered and should not occur:
 - in adjacent standards in the same lift
 - in the same standard in adjacent lifts
 - more than once between adjacent ledgers
 - more than 300 mm from a ledger.
21. Joints in standards need to be butted and spliced.
22. The minimum cross-sectional dimensions of standards, and the maximum longitudinal and transverse spacing of standards are set out in table 6.

Fixings

14. Any reference to the use of screws in this section means the use of 10 gauge self drilling screws complying with AS 3566.1 *Self-drilling screws for the building and construction industries*. Screws need to be long enough to have a minimum embedment length of 35 mm into the supporting member.

Appendix C – Timber scaffolds

Table 6 – Standards

Min. nominal size (mm)	Duty classification of working platform	Max. centre-to-centre longitudinal spacing	Max. centre-to-centre transverse spacing
70 x 35	Light duty	1.2 m	660 mm
90 x 35	Light duty	2.4 m	1.2 m
90 x 45	Medium duty	2.4 m	1.2 m
90 x 70	Heavy duty	2.4 m	1.2 m

Ledger

23. Each longitudinal row of standards needs to be joined on the inside face with horizontal ledgers, with their greater cross-sectional dimension vertical, extending the full length of the scaffold.
24. The distance between the surface supporting a standard and the first ledger and the distance between vertically adjacent standards should not exceed two metres.
25. The minimum cross-sectional dimensions of ledgers are set out in table 7.
26. Joints in ledgers need to be butted and spliced. The joints need to be staggered and should not occur:
 - in horizontally adjacent ledgers in the same bay
 - in vertically adjacent ledgers in the same bay
 - in the same ledger in the same bay
 - in the end bays of a scaffold
 - more than 300 mm from a standard.

Table 7 – Ledgers

Min. nominal sizes (mm)	Duty classification of working platform
70 x 35	Light duty
90 x 45	Medium duty
90 x 70	Heavy duty

Putlogs

27. The scaffold needs to be fixed in the transverse plane at each lift with putlogs.
28. Putlogs need to be set above ledgers with their greater cross-sectional dimension vertical and need to be securely fixed to the ledgers or standards. Joints should not occur in the length of a putlog.
29. At each end of the scaffold, a putlog needs to be fixed at a distance not greater than 200 mm from the edge of the standard.
30. Where the scaffold is two or more bays in length, a pair of putlogs needs to be fixed, one on either side of the intermediate standards, with the putlog spacing being not greater than 500 mm.
31. Where the planks of a working platform butt away from the standards, additional putlogs may be required. In any case, the overhang of planks should not be less than 150 mm nor more than 250 mm.
32. In the case of a single pole scaffold, the inside end of each putlog needs to be fixed to the house frame by a minimum of two screws and also needs to be seated on minimum 300 mm long timber blocks of the same cross-section, fixed to the frame studs with a minimum of two nails.
33. The cross-sectional dimensions and the maximum span of putlogs are set out in table 8.

Appendix C – Timber scaffolds

Table 8 – Putlogs

Min. sizes (mm)	Duty classification of working platform	Maximum centre to centre span
70 x 35	Light duty	660 mm
90 x 45	Medium duty	1.2 m
125 x 45	Heavy duty	1.2 m

Bracing

34. Transverse braces need to be fixed diagonally in each lift at each end of the scaffold.
35. Longitudinal braces need to be fixed in each lift of the scaffold to the outside of the outer row of standards, with the distance between braced bays not exceeding three bays in length.
36. Braces need to be fixed diagonally as close as possible to the intersection of the standards and ledgers and, in the first lift, the lower end of a brace needs to be fixed as close as possible to the intersection of the standard and its soleplate.
37. In the case of a single pole scaffold, the inside end of a transverse brace needs to be fixed as close as possible to the intersection of a putlog and the building or structure.
38. Braces need to be a minimum of F8 unseasoned hardwood or MGP 12 seasoned pine with cross-sectional dimensions not less than:
 - 70 x 35 mm for a scaffold supporting a light duty working platform
 - 90 x 45 mm for a scaffold supporting a medium duty or heavy duty working platform.

Stability

39. Every scaffold needs to be effectively stabilised by tying to the building or an adjacent structure, or by rakers to the ground.
40. Ties and rakers should comply with the following:
 - Except in single pole scaffolds, ties need to be fixed to both standards.
 - Where rakers are used, they need to be of the same material as the standards, fixed to the outer standards and, at ground level, they need to be firmly footed or fixed with timber stakes driven into the ground, and they need to be positioned at approximately 45 degrees to the horizontal.
 - The first level of ties or rakers should not be higher than four metres above the lowest soleplate.
 - The distance between longitudinally adjacent ties or rakers should not exceed two bays.
 - Ties should not be fixed to the cladding of a building or structure.
 - Ties and rakers need to be positioned so as not to obstruct access along the working platform.
 - No more than one lift should be constructed above the highest level of ties or rakers.
 - The minimum cross-sectional dimensions of ties need to be the same as for braces.
 - Ties and rakers need to be continuous in their length.

Appendix C – Timber scaffolds

Splicing of members

41. Where standards or ledgers are spliced, such joints need to be butt joints with fishplates of the same cross-sectional dimensions fixed equidistant on each side of the butt point, and bolted through with four 12 mm diameter mild steel bolts, washers and nuts, spaced at 225 mm centres.

Working platform edge protection and access

42. Working platforms need to be provided with edge protection and with safe means and access and egress in accordance with Section 8 of AS/NZS 4576 *Guidelines for Scaffolding*.
43. See paragraphs 128–137 of this Code for information about guardrailing.

Part 3: Timber scaffolds: single pole with high first lift height

44. This section provides guidance for single pole timber scaffolds with:
 - a first lift height of up to 6.0 metres
 - a maximum load rating of medium duty.
45. These scaffolds are typically suitable for many work tasks in the construction of double storey extensions, including the fixing of cladding, general carpentry, rendering and painting. Scaffolds described in this section are not recommended for heavy duty works such as bricklaying.

Configuration

46. The configuration of scaffolds prescribed in this Part need to be as shown in figure 29.
47. For scaffolds erected in accordance with this Part the primary loads are transferred directly from the working platform to the putlogs at each standard. These putlogs transfer the loads directly to the standard at the outer face and to the building frame at the inner face.

Appendix C – Timber scaffolds

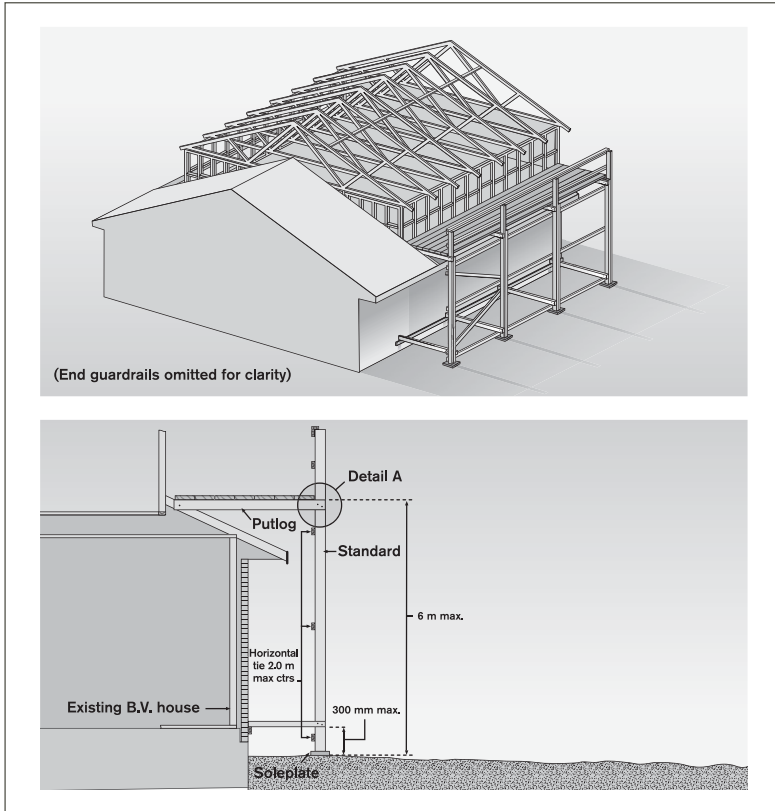


Figure 29 Timber scaffold (single pole – high first lift).

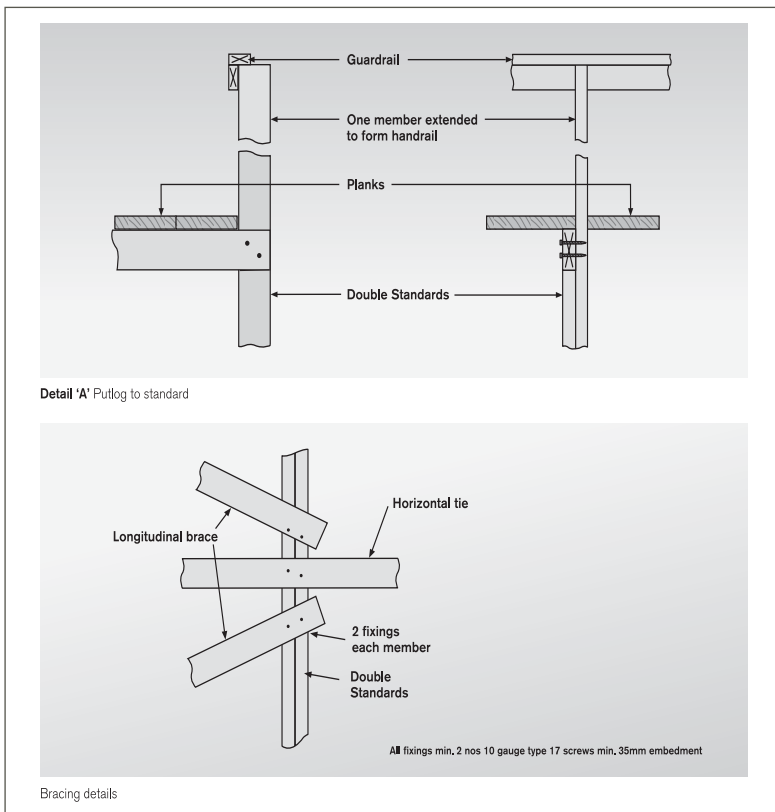


Figure 30 Details – timber scaffold (single pole – high first lift).

Appendix C – Timber scaffolds

Scaffold components

48. Load bearing structural members used or intended to be used in the construction of a timber scaffold in accordance with this Part, including standards, guardrails, midrails, putlogs, braces, ties and rakers, need to have dimensions and stress gradings as specified in paragraphs 55–68 of this appendix.
49. All components intended for use in the construction of a timber scaffold need to be visually inspected for defects prior to each use and components found to be in an unserviceable condition should not be used.

Working platform

50. Working platforms supported by timber scaffolds constructed in accordance with this Part need to comply with paragraphs 12 and 13 of this appendix and be classified as:
 - light duty, for loads (persons and materials) of up to 225 kg per bay, or
 - medium duty, for loads (persons and materials) of up to 450 kg per bay.
51. Where the lapping of planks at the putlogs creates a tripping hazard for the task being undertaken, a bevelled transition needs to be provided.

Fixings

52. Any reference to the use of screws in this Part means the use of 10 gauge Type 17 self-drilling screws complying with AS 3566.1 *Self-drilling screws for the building and construction industries*. Screws need to be long enough to have a minimum embedment length of 35 mm into the supporting member.
53. All fixings for horizontal ties, putlogs and braces should not be less than 2 nos 10 gauge screws to each standard.
54. Putlogs at each standard need to bear directly on the standard and be fixed to the standard as shown in figure 30. The inside end of these putlogs need to be fixed to the building rafter with minimum one M12 bolt or equivalent.

Standards

55. Standards need to have a stress grading not less than:
 - F8 unseasoned hardwood
 - MGP 12 seasoned pine.
56. The minimum cross-sectional dimensions need to be in accordance with table 9. Double standards need to be nailed together at maximum 300 mm intervals.
57. The maximum longitudinal spacing of standards needs to be 2.7 metres.
58. Except as noted in this section, standards need to be constructed in accordance with paragraphs 18–22 of this appendix.

Table 9 – Standards

Height to working platform	Minimum (nominal) sizes
6.0 m	2 nos 120 x 45
5.0 m	2 nos 120 x 45
4.0 m	2 nos 90 x 45
3.0 m	2 nos 90 x 45

Appendix C – Timber scaffolds

Horizontal ties

59. Each longitudinal row of standards needs to be joined on the inside face with horizontal ties with their greater cross-sectional dimension vertical, extending the full length of the scaffold.
60. All horizontal ties should be:
 - a minimum size of 70 x 45 or 90 x 35 MGP 12 seasoned pine
 - located at a maximum centre-to-centre vertical spacing of 2 metres with the lowest tie being not greater than 300 mm above the sole plate.
61. Joints in horizontal ties need to be staggered and should not occur:
 - in vertically adjacent members in the same bay
 - in the same member in the same bay, or
 - in the end bays of a scaffold.

Putlogs

62. The scaffold needs to be fixed in the transverse plane at the working platform lift. In this type of scaffold design the putlogs also perform the function of tying the scaffold to the building. Putlogs should:
 - be located at each standard
 - putlogs need to be fixed to their support in accordance with paragraphs 52–54 of this Appendix (Part 3, Fixings)
 - be continuous along their length.
63. The cross-sectional dimensions and the maximum span of putlogs are set out in table 10.

Table 10 – Putlogs

Span of putlog	Minimum sizes and grading
2.4 m	140 x 45 F17 KDHW
1.8 m	140 x 45 F17 KDHW
1.2 m	150 x 50 F7 Oregon

Lower transverse ties

64. Each standard needs to be tied to the structure with the transverse lower tie members. Lower ties should be:
 - a minimum size of 70 x 45 or 90 x 35 MGP 10 seasoned pine
 - located within 300 mm of the sole plate.

Bracing

65. Longitudinal braces need to be fixed to the standards, as shown in figure 30, with the distance between braced bays not exceeding three bays in length.
66. Braces need to be fixed diagonally as close as possible to the intersection of the standards and horizontal ties and, in the first lift, the lower end of a brace needs to be fixed as close as possible to the intersection of the standard and its soleplate.
67. Braces need to be a minimum of F8 unseasoned hardwood or MGP 12 seasoned pine with nominal cross-sectional dimensions not less than 90 x 35 mm.

Splicing of members

68. Where members are spliced, such joints need to be butt joints with fishplates of the same cross-sectional dimensions fixed equidistant on each side of the butt point, and bolted through with four 12 mm diameter mild steel bolts, washers and nuts, spaced at 225 mm centres.

Working platform edge protection and access

69. Working platforms need to be provided with edge protection and with safe means and access and egress in accordance with Section 8 of AS/NZS 4576 *Guidelines for scaffolding*.
70. Paragraphs 128–137 of this Code also provide guidance on guardrailing.

Appendix D – Safe erection of roof truss checklist

Truss design

1. Have alternative designs for large spans or high trusses to facilitate safer installation been considered?

Preparing the site for truss delivery

2. Have the requirements in relation to the delivery of the roof trusses, including access by delivery vehicles, been considered?
3. You should consider:
 - conditions for safe access to the site
 - the deployment of any outriggers
 - any known restrictions on crane boom movements such as existing structure.
4. Have you consulted with the supplier and the delivery contractor to ensure, so far as possible, that the roof trusses are delivered and unloaded in an order that minimises handling on site and assists the sequential erection of the trusses?
5. Has the delivery contractor been informed where the roof trusses are to be stacked? Where trusses are to be directly loaded onto the building structure a competent person should have:
 - reviewed the structural capacity of the structure, as it will exist at time of delivery
 - provided direction as to the designated landing areas, any temporary supports needed and maximum loadings allowed.
6. Have the appropriate fall protection controls been considered and implemented where truss delivery involves persons working at height? This may require the use of appropriate ladders to unslung the load.

7. Have arrangements been made for traffic management?
8. Have arrangements been made for clear access to the site to enable:
 - installation of work platforms or other fall protection requirements
 - safe use of ladders and other equipment
 - safe handling of trusses, associated bracing and other material and equipment?
9. Has the site and its surrounds been made easily accessible and clear of mud so far as is reasonably practicable?

Use of a crane

10. Have traffic management arrangements been discussed with the delivery contractor to ensure that appropriate traffic management arrangements are in place?
11. Has a designated standing area for the crane delivery vehicle been arranged that meets any loading conditions specified by the delivery contractor?
12. Have arrangements been made with the crane delivery contractor for the delivery crew to be provided with any information needed to ensure the correct placement of loads within the site and any loading limitations with regard to the placement of loads directly onto the structure?

Development of site specific erection methods

13. Has a SWMS for the specific roof truss erection process been developed? The SWMS should take into account site specific factors including:
 - available site access and storage
 - truss size and design

Appendix D – Safe erection of roof truss checklist

- type of fall protection to be used for persons working near the external perimeter of the building
- type and suitability of any internal platforms to be used
- fall protection to any stair voids etc
- type and suitability of any ladders to be used
- the manner in which trusses are to be manoeuvred both at ground level and at top plate level
- weather conditions (eg heat, wind and rain)
- additional equipment needed to install trusses
- manner in which truss bracing and spacers are to be installed to minimise fall risks
- safe use of power tools including electrical safety.

Note: Many employers involved in truss erection will have a basic or generic truss erection SWMS that forms the basis of their work procedure for most sites. However it is likely that some of the assumptions, including likely site conditions and truss designs will vary. Accordingly employers need to ensure that generic SWMS are reviewed and amended as necessary for each specific site.

Formation and preparation of erection crew (eg training, supervision)

14. Is the size, experience and competence of the erection crew sufficient?
15. Is there an appropriate number of people experienced and competent in the erection of roof trusses to provide adequate guidance and supervision of less experienced members?
16. Have the erection crew been appropriately trained in relation to the specific site and does the erection crew sufficiently understand the specific SWMS?
17. Have the erection crew been appropriately trained and instructed on roof truss inspection to enable them to identify any obvious defects prior to relying on any other component of the truss for support?
18. Has the ability of the erection crew to be available to lift and manoeuvre trusses in to place been considered? An assessment of the following factors should be undertaken to determine how roof trusses are to be handled and the number of persons needed at each stage of the process:
 - Overall size of trusses, span, height, weight.
 - Restrictions on handling imposed by site, house design, other factors.
 - Cranage available.
19. Has the erection crew been provided with clothing and footwear suitable for the task that is in good condition?
20. Has appropriate supervision been arranged to ensure adherence to the SWMS?



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