

Compliance code

Demolition

Edition 1

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This compliance code (**Code**) provides practical guidance for those who have duties or obligations in relation to demolition sites 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 This Code replaces the Code Of Practice (No.14) – *Demolition* (1991), which is no longer in force and effect.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 or OHS Regulations – be taken 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 5.1 of the OHS Regulations associated with demolition work.

Scope

2. This Code provides information for duty holders about meeting their obligations under Part 5.1 of the OHS Regulations in relation to demolition work as well as providing information about the planning and preparation required for demolition work and how to identify hazards and control risks associated with construction work involving demolition.
3. It is not possible for this Code to deal with every risk arising during demolition work that a duty holder may encounter at their workplace. The guidance in the Code needs to be considered with regard to the particular characteristics and circumstances of the workplace.

Note: The Victorian Building Authority (VBA) regulates building practitioners and is responsible for enforcing compliance with the *Building Act 1993* and Building Regulations 2006. For more information about your obligations or duties (including permits and registration) go to vba.vic.gov.au.

Application

4. This Code applies to employers, employees, self-employed persons, persons with management or control of a workplace, principal contractors, persons who install, erect or commission plant, and designers of buildings or structures. 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 a recommended optional course of action.

What is demolition work?

5. **Demolition** means the complete or partial dismantling of a building or structure by planned and controlled methods or procedures. OHS Regulation r5 A **structure**, for the purpose of Part 5.1 of the OHS Regulations, includes (amongst other things) any bridge, wall, road, tunnel, electrical facility or ship. OHS Regulations r5, r323

Who has duties?

6. **Employers** must 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](#)

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

7. Employers must, so far as is reasonably practicable, monitor conditions at the workplace under the employer's management and control. [OHS Act s22\(1\)\(b\)](#)
8. Employers must also, so far as is reasonably practicable, ensure that persons other than employees are not exposed to risks to their health or safety arising from the business activities undertaken by the employer. [OHS Act s23](#)
9. An employer's duties under section 21 and section 35 of the OHS Act extend to independent contractors engaged by the employer and any employees of an independent contractor working at the workplace. 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\(2\)](#)
10. Regulations that set out the way an employer complies with their duties to employees under section 21 and section 35 of the OHS Act also apply in respect 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 Regulation r8\(1\)](#)
11. Employers have a number of specific duties under the OHS Regulations to manage risks associated with construction work (including any work performed in connection with the demolition of any building or structure) in the workplace, including duties to:
- control any risk to health or safety associated with construction work (including any work performed in connection with the demolition of any building or structure) in accordance with the hierarchy of control set out in Part 5.1 of the OHS Regulations. [OHS Regulations r325](#)
 - ensure that employees who do demolition work involving certain high risk work (**HRW**) activities, for example scaffolding and rigging, hold an appropriate HRW licence. [OHS Regulations r129](#), [r130](#)
 - not perform **high risk construction work (HRCW)**, including construction work involving demolition, where there is a risk to health or safety of a person arising from the HRCW, unless a safe work method statement (SWMS) is prepared before the work starts and the work is undertaken in accordance with the SWMS. [OHS Regulations r322\(c\)](#), [r327](#)
12. 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](#), [OHS Regulations r11](#)

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13. A **person who has management or control of a workplace** has a duty to ensure that the workplace and the means of entering and leaving it are safe and without risks to health, so far as reasonably practicable. This duty only applies in relation to matters over which the person has management or control. [OHS Act s26](#)
14. 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 (including demolition work), and that this plan is monitored, maintained and kept up to date during the course of the construction work (see paragraphs 59 to 63). 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 – r337](#)
15. **Employees**, while at work, must take reasonable care for their own health and safety and that of others who may be affected by their acts or omissions in the workplace. Employees must also co-operate with their employer's actions to make the workplace safe (for example by following any information, instruction or training provided). [OHS Act s25\(1\)](#)
16. **Persons who install, erect or commission plant** who know, or ought reasonably to know, that the plant is to be used at a workplace, must ensure that nothing about the way the plant is installed, erected or commissioned makes it unsafe or a risk to health, so far as reasonably practicable. [OHS Act s31](#) This would include, for example, ensuring that scaffolding is erected safely and securely on a demolition site.
17. **Persons who design a building or structure** or part of a building or structure who know or ought reasonably to know, that the building or structure is to be used as a workplace, must ensure, so far as is reasonably practicable, that it is designed to be safe and without risks to health of persons using it as a workplace for a purpose for which it was designed. [OHS Act s28](#) In Part 5.1 of the OHS Regulations, a 'structure' includes (amongst other things) any formwork, falsework, scaffold or other construction designed or used to provide support or access or containment during construction. [OHS Regulations r323](#) This would include, for example, the design of temporary supports.

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\(2\), r333\(2\)](#)

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 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.

Part 1 – Introduction

The risk management process

18. 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** hazards associated with demolition work
- **Assessing**, where necessary, any associated risks
- **Controlling** risks associated with demolition work
- **Monitoring, reviewing**, and where necessary, **revising** risk controls.

Diagram 1 – The risk management process



Note: There are certain circumstances where each step of the risk management process needs to occur. See Part 4 of this Code for further information on these duties.

19. Employers must also control any risks to health and safety associated with plant used in the workplace, so far as is reasonably practicable, in accordance with a hierarchy of control under the OHS Regulations. [OHS Regulations r98](#)

Consultation

20. Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health and 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. [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)

Go to worksafe.vic.gov.au for more information on consultation.

21. An employer has a duty to consult with employees (including HSRs) when identifying or assessing hazards or risks to health and 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](#)
22. 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.

Part 1 – Introduction

23. 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. **OHS Act s36**
24. Employers also need to encourage employees and contractors to report any problems immediately so that risks can be managed before an injury occurs.
25. Employees and contractors may have practical suggestions or potential solutions that can be implemented.

Information, instruction, training and supervision

26. Employers must provide employees with the necessary information, instruction, training or supervision to enable them to perform their work in a way that is safe and without risks to health. 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)**
27. 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.
28. Information, instruction and training needs to cover the nature of hazards associated with demolition work, including the need for risk control measures and how to properly use them. For example, ensure employees understand:
 - the nature of the hazards associated with the demolition work
 - 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 and health and safety coordination plan.
29. 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.
30. 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.
31. Where the employees undertaking the work are new and inexperienced, such as apprentices or young workers, it is often necessary to provide additional supervision.
32. 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).

33. Employers need to review their training programs regularly and also when:
- there is change to work processes, plant or equipment
 - there is an incident
 - new control measures are implemented
 - there is a request by an HSR
 - changes are made to relevant legislation, or
 - if any other issues impact on the way the work is performed.

Employers should also keep records of induction and training given to employees.

34. 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 demolition.
35. In addition to the general duty, two specific types of training are required in the construction industry – **construction induction training** and **site specific induction** (site induction).

Construction induction training

36. An employer must ensure that any person employed to perform 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**

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**

37. 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 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**

For more information about construction induction training go to **worksafe.vic.gov.au**.

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Site induction

38. An employer must ensure that any person employed to perform construction work is provided with OHS training that relates to the particular workplace where the construction 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).
39. The aim of site induction is to make sure that employees and contractors are familiar with site specific hazards, risk controls, OHS rules and site procedures (eg the emergency procedures, arrangements for supervision of the work, and who the HSRs are).
40. The detail required in the site induction may vary between construction sites and between phases of a demolition 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.
41. There should be an opportunity for employees and contractors to ask questions about their responsibilities and to have any issues clarified.
42. 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.

Part 2 – Overview of the risk management process

Identifying hazards

43. The first step in the risk management process is to identify the hazards associated with demolition work. Hazards may arise due to the particular features of the building or structure that is being demolished, or as a result of the demolition work itself. Examples of hazards associated with the features of the building or structure include:
- overhead and underground essential services, such as gas, water, sewerage, telecommunications, electricity
 - chemicals, fuel and refrigerant in pipes or lines, and
 - hazardous substances and materials such as lead and asbestos (including contaminated airborne dust particles) – these may be present in the ground where demolition work is to be carried out (contaminated sites) or in demolished material.

Note: Under the OHS Regulations a person who manages or controls a workplace (or plant forming part of a workplace) must identify any asbestos likely to be disturbed by proposed demolition work and ensure, so far as reasonably practicable, it is removed before that work starts. [OHS Regulations r244](#)

44. Examples of hazards arising from the demolition work include:
- unplanned building or structure collapse
 - plant or building debris overloading suspended slabs
 - falls from heights
 - falling objects
 - exposure to excessive noise from plant and demolition processes
 - exposure to hazardous substances or asbestos
 - contact with live electrical installations or services, and
 - working near any moving powered mobile plant inside and outside the demolition site.

Assessing the risks

45. A formal risk assessment is unnecessary if knowledge and understanding about the risk and how to control it already exist. However as construction work involving demolition is HRCW [OHS Regulations r322\(c\)](#), an employer must ensure that a SWMS has been prepared for the work before the work commences if there is a risk to the health or safety of any person arising from the work. [OHS Regulations r327](#) For more information on SWMS, see paragraphs 64 to 72 of this Code.

Part 2 – Overview of the risk management process

46. When assessing the risks associated with demolition work, the following need to be considered:
- the building or structure to be demolished and its structural integrity
 - the method of demolition including its sequencing (see Part 5 of this Code – Demolition methods)
 - the scheduling of the work and the number of people involved in each phase
 - the layout of the workplace including whether there are fall hazards both for people and objects
 - what plant and equipment will be used and the skill and experience required by people to use it safely
 - what exposures might occur, for example to noise or dust, and
 - local weather conditions.

For guidance on how to conduct a risk assessment go to worksafe.vic.gov.au.

Controlling the risks

47. When investigating risk control options, employers need to consider relevant information about the nature of the demolition work to be performed and whether it creates a risk to health or safety. Employers also need to consider whether a risk control measure will introduce additional risks.
48. Employers must consult with their employees (including any HSRs) when making decisions about how to control risks. [OHS Act s35](#) Consulting with employees is likely to result in better risk control measures because it gives them the opportunity to contribute ideas and is likely to improve the uptake of risk control measures when they are implemented.

The hierarchy of control

49. An employer or self-employed person must, so far as is reasonably practicable, eliminate any risk to health or safety associated with construction work. [OHS Regulations r325\(1\)](#) If it is not reasonably practicable to eliminate a risk, the employer or self-employed person must reduce the risk so far as is reasonably practicable by —
- (a) substituting, for the hazard giving rise to the risk to health or safety, a new activity, procedure, plant, process or substance that gives rise to a lesser risk to health or safety, or
 - (b) isolating persons from the hazard, or
 - (c) using engineering controls, or
 - (d) combining any of those risk control measures. [OHS Regulations r325\(2\)](#)
50. It will often be necessary to use a combination of controls to eliminate or control a risk so far as is reasonably practicable. Administrative controls and PPE are the least effective in controlling risks because they rely on human behaviour and supervision. Administrative controls and PPE must only be used where higher order risk controls are not reasonably practicable, or to supplement higher order controls. [OHS Regulations r325\(3\) and r\(4\)](#)

Part 2 – Overview of the risk management process

Table 1 – Hierarchy of control

Level	Example of action
1. Eliminate risk	Eliminate risk of fire from oxy cutting by using an excavator fitted with shears to cut steel
2. Reduce the risk with one or more of the following: <ul style="list-style-type: none">▪ substitution▪ isolation▪ engineering controls	<p>Reduce the risk of injury by using a different demolition method (eg substitute manual demolition with a mechanical demolition process)</p> <p>Isolate by using concrete barriers to separate pedestrians and employees from powered mobile plant, to reduce the risk of collision with pedestrians and employees</p> <p>Fit excavators with protective structures that block falling objects to minimise the risk of materials entering the operator's cabin</p>
3. Reduce the risk using administrative controls	Install warning signs to stop people entering an area where demolition debris may fall
4. Reduce the risk by using personal protective equipment (PPE)	Use hard hats, steel cap boots, gloves and high visibility vests

Note: In addition to the above hierarchy of control for construction work, the OHS Regulations specify specific hierarchies of control for particular hazard types that may be present on a demolition site including falls, 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.

51. Parts 4 to 6 of this Code provide information on control measures for demolition work.

Part 2 – Overview of the risk management process

Maintaining risk controls

52. A person who is required by the OHS Regulations to use any particular measure to control risk must ensure that the measure is properly installed (if applicable), used and maintained. [OHS Regulations r18](#)
53. The purpose of maintaining risk controls is to ensure that they are working as originally intended and continue to prevent or adequately control risk associated with demolition work. Maintenance of control measures needs to include:
- monitoring demolition activities and work practices
 - frequent inspections of physical controls such as guards or scaffolding
 - 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.
54. Employers and self-employed persons need to have a maintenance procedure in place so that any defects in risk controls are detected as early as possible.

Review and revision of risk controls

55. An employer or self-employed person must **review** any risk controls implemented and **revise** them if necessary in the following circumstances:
- before any change is made to the way the demolition work is performed or to the system of work associated with the demolition work, including any change in the location of the demolition work
 - if new or additional information about hazards relating to the demolition work becomes available to the employer
 - if, for any other reason, the risk controls do not adequately control the risks, or after receiving a request from an HSR. [OHS Regulations r326\(1\)](#)
56. An HSR can make a request for review if they believe, on reasonable grounds, that:
- any of the circumstances listed above 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 the employer has failed to consider a change to a system of work that may increase risk during their review of control measures). [OHS Regulations r326\(2\)](#)

Part 3 – Planning demolition work

57. Demolition work needs to be carefully planned before work starts so that it can be carried out in a way that is safe and without risks to health. Planning involves identifying hazards, assessing risks where necessary, and determining appropriate risk controls in consultation with all relevant persons involved in the work. Relevant persons to be consulted should include the building surveyor, principal contractor, demolition contractor, structural engineers, mobile plant operators and employees undertaking the work and any HSRs. An overall demolition work plan should be prepared before the demolition commences. **Appendix B** provides further information on what a demolition plan may include. A documented demolition plan may not be needed for minor works such as the demolition of a paling fence or a small garden shed.
58. Demolition procedures need to be designed in accordance with appropriate engineering principles and published Australian Standards. Engineering principles would include, for example, mathematical or scientific calculations outlined in an engineering reference manual or Australian Standard. It may help to have a suitably qualified person such as a structural engineer conduct an investigation and deliver an engineering investigation report before the demolition work starts. Some of the issues that should be considered when undertaking an engineering investigation are listed in **Appendix C**.

Employers must, so far as is reasonably practicable, employ or engage persons who are suitably qualified in relation to occupational health and safety to provide advice to the employer concerning the health and safety of employees of the employer. **OHS Act 22(2)(b)**

Suitably qualified means having the knowledge, skills and experience to provide advice on the issues impacting the health and safety of employees of the employer. The type of person required will depend on the circumstances. Sometimes a person with formal qualifications will be needed, at other times industry experience may be sufficient. For more information see the WorkSafe Position at worksafe.vic.gov.au.

Health and safety coordination plans

59. Principal contractors for construction projects over \$350,000 (value or cost of the whole construction contract, not just the demolition phase) must ensure that a health and safety coordination plan is prepared before the construction work commences. **OHS Regulations r332 and r335**
60. The plan must include:
- a list of the names, positions and responsibilities of all persons who will have specific responsibilities for onsite health and safety (eg site manager, OHS officers, first aid officers, and specialist contractor supervisors)

Part 3 – Planning demolition work

- the arrangements for the coordination of the health and safety of persons engaged to perform construction work (eg duties of responsible persons, and how these persons will communicate with employees)
 - the arrangements for managing OHS incidents when they occur (eg emergency response, notification of emergency services and WorkSafe), and
 - any site safety rules, and arrangements for ensuring that all persons at the workplace are informed of the rules.
OHS Regulations r336
61. The health and safety coordination plan must be monitored, maintained and kept up to date during the course of the construction work. **OHS Regulations r335** The principal contractor must ensure that a copy of the plan and any revisions are retained for the duration of the construction project and are available for inspection throughout the course of the construction work by:
- any person engaged to perform construction work at the workplace
 - any person about to commence work at the workplace
 - an employee member of a health and safety committee, an HSR or a nominated employee representative.
OHS Regulations r337
62. Each person engaged to perform work must be made aware of the health and safety coordination plan before they commence work and be provided with access to the plan and any revisions.
OHS Regulations r337
63. See **Appendix D** for an example of a health and safety coordination plan template.

Safe work method statements

64. Construction work involving demolition is HRCW under the OHS Regulations. **OHS Regulations r322** An employer or self-employed person must not perform construction work involving demolition 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)**
65. 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)
66. An employer or self-employed person performing HRCW for which a SWMS is required must review, and if necessary, revise the SWMS:
- whenever the HRCW changes, or
 - if there is an indication that risk control measures are not controlling the risks adequately, including after any incident that occurs during HRCW.
OHS Regulations r328

Part 3 – Planning demolition work

67. A SWMS is a document that must:
- identify work that is HRCW
 - state the hazards and risks of that work to health or safety
 - sufficiently describe measures to control those risks
 - describe how the risk controls are to be implemented, and
 - be set out and expressed in a way that is readily accessible and comprehensible to the persons who use it.
[OHS Regulations r324](#)
68. 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 HRCW.
69. In addition to construction work involving demolition, the following types of construction work are also HRCW
[OHS Regulations r322](#):
- where there is a risk of a person falling more than two metres
 - on telecommunications towers
 - involving the removal or likely disturbance of asbestos
 - involving structural alterations that require temporary support to prevent collapse
 - involving a confined space
 - involving a trench or shaft if the excavated depth is more than 1.5 metres
 - involving a tunnel
 - involving the use of explosives
 - on or near pressurised gas distribution mains or piping
 - on or near chemical, fuel or refrigerant lines
 - on or near energised electrical installations or services
 - in an area that may have a contaminated or flammable atmosphere
 - involving tilt-up or precast concrete
 - on or adjacent to roadways or railways used by road or rail traffic
 - at workplaces where there is any movement of powered mobile plant
 - in an area where there are artificial extremes of temperature
 - in, over or adjacent to water or other liquids where there is a risk of drowning
 - involving diving.
70. A SWMS for construction work on a demolition site may have to address multiple HRCW activities. One SWMS can be prepared to cover all HRCW on a demolition site for simple projects, provided that it takes into account the changing nature of the construction environment. Alternatively, a separate SWMS can be prepared for each demolition activity. Complex demolition projects are likely to require separate SWMS to be prepared for HRCW activities such as disconnection of utilities, internal strip out, window removal, roof removal, mechanical demolition and stockpiling.
71. Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health and safety that directly affect them.
[OHS Act s35](#) The duty to consult applies when, for example, identifying or assessing hazards or risks to health or safety or making decisions about risk control measures, including when preparing or revising a SWMS
72. See **Appendix E** for an example of a SWMS template. For more information on how to prepare a SWMS go to worksafe.vic.gov.au.

Part 3 – Planning demolition work

High risk work licensing

73. A person must not do any HRW unless they hold an appropriate HRW licence. OHS Act s40(4), OHS Regulations r128 and r130 This is in addition to the duty to provide employees with any necessary information, instruction, training and supervision to enable them to perform their work in a way that is safe and without risks to health (see Part 1 of this Code).
74. The range of HRW licences are listed in Schedule 3 of the OHS Regulations and include licences for scaffolding, dogging and rigging. A HRW licence is required to operate some types of powered mobile plant, such as some cranes, elevating work platforms or forklifts. OHS Regulations r128, r129, r130 and Schedule 3
75. A HRW licence issued by WorkSafe is valid in every Australian state and territory, enabling people to operate high risk equipment under consistent standards throughout Australia. Current equivalent licences issued by a corresponding Authority in other Australian jurisdictions will also be valid in Victoria. OHS Regulations r131
76. An employer must ensure that any employee who will be performing HRW holds an appropriate HRW licence in relation to that work. OHS Regulations r129 and r130
77. For more information about licensing, including how to apply for a HRW licence and exceptions that apply, go to worksafe.vic.gov.au.

Asbestos registers and licensing

78. Employers, self-employed persons, and persons who manage or control workplaces must comply with specific duties in relation to asbestos in workplaces under Part 4.4 of the OHS Regulations, including:
 - duties specific to undertaking demolition work where asbestos is present in the workplace (including duties to identify asbestos and ensure, so far as is reasonably practicable, that it is removed before the demolition work is commenced),
 - duties to obtain, review and (where necessary) revise an asbestos register before undertaking work, and
 - licensing requirements.
79. When planning demolition, a duty holder needs to review and consider:
 - the location of asbestos in relation to the proposed demolition
 - whether asbestos is likely to be damaged or disturbed as a result of the demolition
 - the amount, type and condition of asbestos present
 - the method of demolition and how will it affect the asbestos.
80. For guidance about asbestos removal and licensing refer to the *Removal of asbestos in workplaces compliance code* at worksafe.vic.gov.au.

Part 3 – Planning demolition work

Essential services and other pipes or lines

81. An important element of pre-demolition planning is the identification and disconnection or abolishment of all essential services and other pipes or lines (eg the supply of gas, water, sewerage, telecommunications, electricity) and any chemicals, fuel or refrigerants in pipes or lines.
82. All service lines not required in the demolition process need to be shut off, capped, or otherwise controlled, at or outside the building line, before demolition work begins.

Note: It is important that gas and electricity services that will be impacted by demolition work are abolished (ie removed completely), not just disconnected.

83. In each case, the approval or services of the relevant utility provider, if necessary, needs to be obtained. Where approval or services of a utility provider is necessary, the utility provider needs to be notified in advance. Any service retained during the demolition work (for example, overhead electric lines) needs to be adequately protected as required by the relevant authority. Any employer undertaking works in the vicinity of the service needs to ensure that their systems of work and any SWMS outline how the health and safety risks associated with the works will be controlled.
84. For further information on working with hazardous substances, see the *Hazardous substances compliance code*.

Adjacent or adjoining buildings

85. When planning demolition work, adjacent or adjoining buildings need to be taken into account. The demolition process needs to be undertaken in a way that does not adversely affect the structural integrity of any other building or structure. Consideration needs to be given to changes to soil or ground conditions as a result of the demolition work. If there is a risk that soil or ground conditions may change, consideration should be given to the use of shoring and underpinning.
86. Lateral support for adjoining structures need to be equal to or greater than any provided by the structure to be demolished. Before the existing lateral support is disturbed, provision needs to be made for the erection of temporary supports, which should be monitored as the demolition proceeds. Temporary supports should be designed by a suitably qualified person such as a structural engineer or geotechnical engineer.
87. It is also important that other buildings in and around the demolition site are not adversely affected by vibration or concussion during the demolition process. Special precautions should be taken in the vicinity of hospitals and other buildings containing equipment sensitive to shock and vibration.
88. No part of the demolition process should cause flooding or water penetration to any adjoining building.

❖ Part 4 – Controlling risks in demolition work

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health and 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 pages 6 and 7.

The building or structure to be demolished

89. The demolition contractor in the planning stage of the demolition work should consult with a suitably qualified person (for example, a structural engineer) to obtain advice on specific structural stability issues associated with the demolition of the building or structure, including any temporary structural support required. Specific hazards should be outlined in a demolition plan and must be specified in a SWMS (see paragraphs 57 to 71 of this Code).
90. The building or structure to be demolished and all its components needs to be maintained in a safe and structurally stable condition to prevent the unexpected collapse of part or all of the building or structure. Temporary braces, propping, shoring or guys may be required to ensure that stability of the building or structure is maintained during all phases of the demolition process. Any temporary support needs to be designed by a suitably qualified person and based on sound engineering principles.

Hazardous substances and dangerous goods

91. Demolition work may involve buildings or structures that contain or have contained hazardous substances and materials such as lead, asbestos, polychlorinated biphenyls (**PCBs**), contaminated dust and flammable or combustible materials.
92. The risks arising from potential exposure to hazardous materials must be managed in accordance with Part 4.1 of the OHS Regulations.
93. For hazardous substances, exposure standards must not be exceeded. **OHS Regulations r165** These are set out in Safe Work Australia's *Workplace exposure standards for airborne contaminants*, and must also be listed in the manufacturer's safety data sheet (SDS) for any hazardous substance supplied to the workplace. **OHS Regulations r145 and Schedule 8**
94. Before starting any demolition work, all areas of the workplace including basements, cellars, vaults and waste dumps, need to be examined to determine whether:
 - there are any items that could be a fire or explosion risk
 - any previous use of the site might cause a risk because of the nature of or decomposition of materials
 - there are any toxic, radioactive or other hazardous substances present.

Part 4 – Controlling risks in demolition work

95. Any hazardous substances or dangerous goods (including explosives), must be clearly identified. **OHS Regulations r158**
The employer or the principal contractor at a demolition workplace need to inform all persons at the workplace of the presence of hazardous materials, and arrange for the safe removal and disposal of the material before demolition work commences.
96. If available, the workplace's former hazardous substances register and dangerous goods manifest needs to be referred to for determining the nature and location of previous hazardous substance or dangerous goods storage areas. Information about a substance's hazards and control measures to prevent exposure during removal can be obtained from the SDS or the label of the substance's container.
97. Appropriate cleaning facilities and amenities need to be provided for employees conducting removal or disposal work to minimise risks where there are hazardous materials present.
98. See the *Hazardous substances compliance code* and the *Code of practice for the storage and handling of dangerous goods* at **worksafe.vic.gov.au** for specific guidance on hazardous substances and dangerous goods.

Asbestos

99. Part 4.4 of the OHS Regulations prescribes specific duties related to asbestos (see paragraph 78). For guidance on managing asbestos in workplaces and managing asbestos when demolition work is being undertaken, refer to the *Managing asbestos in workplaces compliance code* at **worksafe.vic.gov.au**.

Lead

100. Lead can be found in paint, old water pipes and other plumbing fittings, sheet lead, solders, lead flashing, lead light windows and glass. Lead is more likely to be found in older buildings or structures.
101. If it is suspected that the building or structure contains lead based paint, a test for the presence of lead needs to be conducted.
102. Precautions that need to be taken when demolishing materials containing lead include:
 - minimising the generation of lead dust and fumes
 - cleaning work areas properly during and after work
 - ensuring employees wear appropriate PPE, and
 - maintaining good personal hygiene.

Polychlorinated biphenyls

103. PCBs were common in old electrical equipment and may be encountered in light fittings (for example, capacitors of old fluorescent light fittings), electrical capacitors and transformers, or in spills and leaks from electrical equipment. Appropriate control measures need to be implemented when handling damaged capacitors to ensure employees are not exposed to any spillage and that any spillage is appropriately cleaned up and disposed of.
104. Any equipment or parts containing PCBs need to be placed in a polyethylene bag and placed into a marked sealable metal container. If PCBs cannot be transported immediately for disposal, all containers need to be stored in a protected area which prevents any discharge of PCBs to the environment.

Part 4 – Controlling risks in demolition work

105. PPE including gloves made of materials that are resistant to PCBs (eg polyethylene, nitrile rubber or neoprene), needs to be provided to employees and worn when there is any likelihood of exposure to PCBs.

Synthetic mineral fibres

106. Synthetic mineral fibres is a generic term used to collectively describe a number of amorphous (non-crystalline) fibrous materials including glass fibre, mineral wool and ceramic fibre. Synthetic mineral fibres are used extensively for insulation in building walls and ceilings as well as on items such as air conditioning duct work. If disturbed in a workplace, synthetic mineral fibres can put employees at risk of upper respiratory tract irritation or skin and eye irritation.
107. Synthetic mineral fibres should be identified and control measures implemented to reduce exposure. PPE needs to be provided to employees and worn when insulation is being removed during the demolition process and any dust needs to be suppressed by damping down.

Securing the work area

Exclusion zones

108. To protect employees and other people (including members of the public) during demolition work, exclusion zones need to be put in place to prevent people entering potentially unsafe work areas.
109. A system that prevents people being struck by falling objects needs to be implemented to minimise risk to people on site or in the vicinity of the demolition work. If it is not reasonably practicable to prevent objects falling, any area where a falling object might reasonably be expected to land needs to be designated and secured as an exclusion zone. The exclusion zone needs to extend horizontally to a safe distance beyond the overhead work area.
110. Planning for exclusion zones should take into consideration:
- erecting secure physical barricades with adequate signage and appropriate lock-out procedures to prevent unauthorised pedestrian or vehicular access to the area
 - providing information to employees and other persons at the workplace advising them of the status of the exclusion zones
 - providing supervision so that no unauthorised person enters an exclusion zone, and
 - the needs of the specific demolition site (for example, extreme weather conditions may mean there is a need for a larger exclusion zone).
111. Exclusion zones and safe distances may be required during:
- the stripping and removal of debris
 - the operation of demolition plant or equipment
 - pre-weakening activities for a deliberate collapse, and
 - the deliberate collapse or pulling over of buildings or structures.

Part 4 – Controlling risks in demolition work

Public access and protection

112. Employers must ensure, so far as reasonably practicable, that persons other than employees of the employer are not exposed to health or safety risks arising from the conduct of the undertaking of the employer. **OHS Act s23** Adequate public safety needs to be maintained in public places and areas adjoining the demolition site (eg roads or walkways) as the work progresses. Where demolition work is adjacent to a public place and there is a risk of falling debris or hazardous noise, controls to protect the public need to be:
- implemented before the commencement of demolition work
 - kept in position at all times during the progress of the work, and
 - regularly inspected and maintained.
113. As part of the general duty to other persons under sections 23 and 24 of the OHS Act, employers and self-employed persons need to ensure that controls to protect persons other than employees (for example, the public) are reviewed and revised as necessary.
114. Control measures to isolate the work from the public may include installing hoarding such as security fencing, containment sheets and mesh, an overhead protective structure, road closures and specified exclusion zones.
115. Employers should consult with the VBA and the local council on their requirements for public protection.
116. Appropriate overhead protective structures should be provided for public walkways in conjunction with perimeter hoarding. Overhead protection needs to be designed by a suitably qualified person to withstand an appropriate load and could be constructed from scaffolding, fabricated steel or timber.

117. Unauthorised entry to a demolition site can expose persons to hazards that could result in serious or fatal injuries. To prevent unauthorised access, areas where demolition work is being done need to be adequately secured. Access and egress points need to be controlled at all times and secured when unattended. Site security arrangements need to be monitored to ensure they remain effective in preventing unauthorised access.

Plant and equipment

118. Part 3.5 OHS Regulations sets out requirements for duty holders, including employers, in relation to plant. Plant typically used for demolition work includes:
- powered mobile plant
 - personnel or materials hoists
 - air compressors
 - electric generators
 - jackhammers
 - hydraulic jacks
 - oxy-fuel gas cutting and welding
 - concrete saws and corers
 - scaffolding
 - ladders (limited use), and
 - many types of handheld plant including: angle grinders, power saws, hammers, demolition saws, hydraulic jacks and pinch or lever bars.

Part 4 – Controlling risks in demolition work

119. Among other things, employers need to ensure that:
- plant is used and operated by a competent person
 - appropriate guards and operator protective devices are fitted on plant
 - the safe working load is displayed and any load measurement devices are operating correctly
 - any powered mobile plant is suitable for the intended use, including the intended working environment
 - plant is inspected, cleaned and maintained in accordance with the manufacturer or supplier's instructions or (in the absence of such instructions) specifications developed by a suitably qualified person, and
 - the safe use and storage of oxy-fuel gas cutting equipment is maintained in accordance with manufacturer's recommendations.
120. Whenever powered mobile plant is to be used for demolition work, traffic management arrangements need to be implemented to prevent collision with pedestrians, public vehicles and other mobile plant.
121. For specific guidance on powered mobile plant go to **worksafe.vic.gov.au**. For guidance on using plant safely see the *Plant compliance code* at **worksafe.vic.gov.au**.

Cranes

122. Cranes may be used in demolition work for a number of purposes including:
- lifting and lowering plant or materials
 - lifting and lowering personnel work boxes, and
 - holding suspended loads.
123. In addition to the requirement to hold a HRW licence (see paragraphs 73 to 77), an operator may also need other competencies for specialist work.
124. If cranes are used to suspend loads that are to be cut and then lowered to the ground, it is important for the loads to be accurately calculated. To determine loads accurately, samples should be used to determine the weight per unit length or area. The safe working load of the crane needs to be reduced by 33 per cent to allow for miscalculations in the test weighing. A similar approach needs to be followed where weights cannot be determined with reasonable consistency and accuracy.

Removal of debris

125. The employer or a person in control or management of the workplace needs to manage the risks arising from the storage, movement and disposal of demolition waste, including contaminated demolition waste.
126. Debris needs to be progressively removed to prevent any build-up that could affect the integrity of a suspended floor of the building or structure, affect workplace access and egress, become a fire hazard, or cause a health and safety hazard.
127. Demolished materials should not be allowed to fall freely unless confined within a chute (or similar enclosure), shaft or exclusion zone.

Part 4 – Controlling risks in demolition work

128. A debris drop is a debris pile that is enclosed, meaning the risk of an object striking employees or the public has been eliminated. Debris drop zones need to be clearly identified, and any area where there is a risk that an employee or other persons at the workplace might be injured by falling or rebounding debris needs to be fenced or barricaded to prevent access.
129. If demolished materials are allowed to fall through internal floor openings in multi-storey buildings, such as lift shafts or debris drop zones, the duty holder needs to ensure the following:
- at the working level, each opening is protected by an adequate vehicle buffer during the removal of debris by mobile plant, and guarded by suitable barriers at all other times – vehicle buffers need to be high and solid enough to prevent the mobile plant from riding through or over them, and
 - at all levels below the working level, access is prevented to the area through or onto which material is falling by sealing off the opening with guarding from floor to ceiling, or barricades with warning signs and increased supervision to keep persons out of the area.
130. Debris chutes need to be designed and constructed to prevent the spillage of material and dust and to minimise noise while debris is passing through the chute. Vertical chutes need to be fully enclosed with a cover or barrier at the top to prevent a person falling into the chute. Debris chutes need to be adequately secured to the building or structure to ensure that debris falls freely and does not become jammed in shafts or chutes. Securing of the chute needs to take into consideration the weight of the chute plus the accumulated load.
131. Signs that warn of the risk from falling or ejected material need to be placed at the discharge end of every chute. Overhead demolition needs to cease during removal of debris bins.

Falls

132. Part 3.3 of the OHS Regulations places specific obligations on employers to manage risks associated with involuntary falls greater than two metres. Among other things, employers must:
- identify all tasks that involve a fall risk of more than two metres [OHS Regulations r43](#)
 - manage risks associated with a fall in accordance with the hierarchy of control [OHS Regulations r44](#), and
 - ensure that any plant used to control a risk associated with a fall is fit for its purpose, safe to use in the particular work environment and is installed, erected and dismantled safely. [OHS Regulations r47](#)
133. A SWMS must be prepared for HRCW, including construction work that involves a risk of a person falling more than two metres. [OHS Regulations r322\(a\)](#) and [r327](#)
134. For guidance on controlling risks associated with falls of over two metres, see the *Prevention of falls in general construction compliance code* and the *Prevention of falls in housing construction compliance code* available at worksafe.vic.gov.au.

Part 4 – Controlling risks in demolition work

Electrical risks

135. Electrical power sources, whether overhead or underground, can be a major hazard. In addition to electric shock, burns and possible electrocution, contact with overhead electric lines can lead to arcing, explosion, fire, unpredictable cable whiplash, electrifying of objects (eg signs, poles, scaffolds, and mobile plant) and the downing of live power cables.
136. Employers need to eliminate the risk of electric shock by arranging for the local electrical distribution company to physically abolish the service from the electricity network, and obtaining written confirmation that this has occurred. Where the electrical distribution company does not provide written confirmation, the employer needs to obtain written confirmation from a suitably qualified person. If there are co-generation systems in place (eg solar panels or wind generators), a licensed electrician needs to remove the power generation system prior to demolition work commencing.
137. Where it is not reasonably practicable to disconnect power from the electricity distribution network (for example, during an internal office demolition), a licensed electrician needs to disconnect and remove all electrical circuits affected by the demolition work from the electrical switchboard, and verify by test that the circuits are de-energised. As this method may not eliminate the risk of electric shock from the building's electrical installation, the demolition contractor needs to have additional controls in place to identify and minimise this risk, such as enforcing a prohibition on cutting cables unless an electrician confirms they are dead.
138. Electrical installations used to supply power on construction and demolition sites need to comply with AS/NZS 3012 – *Electrical installations on construction and demolition sites*.
139. The operation of powered mobile plant near overhead powerlines or underground assets needs to be undertaken in accordance with No Go Zone rules. Among other things, in certain circumstances the No Go Zone rules require the employer to obtain a permit from the electrical asset owner prior to work commencing. The installation, use and dismantling of scaffolding near overhead powerlines or underground assets should be in accordance with Energy Safe Victoria's guidelines.
140. For more information, including No Go Zone guidance, go to worksafe.vic.gov.au.

Fire prevention and protection

141. Where there is a risk of fire (for example, demolition that involves hot works) that cannot be eliminated, adequate fire prevention equipment such as a fire hydrant or fire hose reel service needs to be provided and maintained during the demolition of a building or structure. Access to the fire protection service, including any booster fitting, also needs to be maintained.
142. If a sprinkler system is installed in a building or structure to be demolished, it needs to be maintained in an operable condition at each storey. Portable fire-extinguishers need to be kept in working areas at all times and maintained in an operable condition.

Part 4 – Controlling risks in demolition work

Fire hazards from hot works

143. Welding and cutting and other hot works during demolition present a fire hazard and the associated risks need to be controlled. Where reasonably practicable, alternative methods that do not use hot works need to be implemented.
144. In areas where the floor, walls or ground cover are combustible, the area needs to be protected by spraying the area with water, spreading damp sand, laying fireproof blankets or other suitable means of protection.
145. In cases where a fire might develop, a fire spotter should be assigned to the area. Fire extinguishing equipment needs to be readily available, and employees need to be trained in its use.
146. Where possible, flammable and combustible material needs to be removed from the work area and should not be allowed to accumulate to the extent that it can become a fire hazard.
147. Hot works need to cease prior to site closure to allow the area to be observed.

Part 5 – Demolition methods

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health and 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 pages 6 and 7.

148. The sequence in which a building or other structure is demolished and the method used can be critical for the health and safety of employees, contractors and the general public.
149. Buildings and structures should generally be demolished in reverse order to their construction, that is, by *sequential demolition*. In particular:
 - sequential demolition should be carried out in reasonably even stages, commencing from the roof or top of the building or structure being demolished, and
 - multi-storey buildings or structures should be demolished storey by storey.
150. There is a range of demolition methods that may be used, either separately or in combination. Often when demolition work is undertaken there may be a mix of manual and mechanical demolition methods applied.
151. Control measures need to be selected on the basis of the demolition method used. However, no matter what method is used, the building or structure to be demolished and all its components needs to be maintained in a safe and stable condition so as to prevent the unexpected collapse of part or all of the structure. Temporary braces, propping, shoring, or guys may need to be added for stability.

Manual demolition

152. Manual demolition includes any technique where hand tools such as jackhammers, sledge hammers and picks are used.
153. Manual demolition hazards include unexpected collapse, falls, falling objects, hazardous manual handling and exposure to noise, dust, hazardous chemicals and materials, and live electrical services.
154. To manage the risk of unplanned collapses, the condition of roofs, walls and floors of the building need to be assessed by a suitably qualified person and verified as safe before commencing demolition work.

Manual demolition of roofs

155. Prior to commencing roof demolition or dismantling, the duty holder should consider:
 - structural stability of the roof and the effect of removing the roof on the stability of walls
 - condition and strength of the roofing material and the identification of fragile roofing
 - identification of fragile panels or skylights in solid roofs

Part 5 – Demolition methods

- crane and mobile plant access
- safe worker access and egress
- fall hazards and fall protection requirements including issues such as perimeter protection, the availability and strength of anchor points for static lines, inertia reels and lanyards and the suitability of roof structure for the use of safety nets
- means of rescuing persons from safety nets or safety harnesses
- the condition of any roof mesh or safety mesh
- methods of raising and lowering equipment and materials
- assessment of hazardous manual handling problems
- electrical safety including the location of nearby power lines, and
- employee competency and training needs.

Roof access

156. The employer or demolition contractor needs to ensure that the access from the ground to the actual roof work area is safe and without risk to health. Access arrangements may include personnel hoists, scaffolding, temporary work platforms and ladders.

Fragile roofs

157. Before accessing a roof, the roof needs to be inspected to identify if it is structurally sound or if there is any brittle or fragile roofing material. If safety mesh has been installed, the condition of this also needs to be checked.
158. Brittle or fragile roofing material can include roofing made of asbestos cement, cellulose cement, glass panels, fibreglass, acrylic or other similar synthetic moulded or fabricated material used to sheath a roof or contained in a roof.

159. If asbestos cement roofing is involved, the work must be undertaken in accordance with the asbestos related requirements of the OHS Regulations (see paragraphs 78 to 80).
160. Where it is necessary for work to be carried out on or adjacent to any part of a fragile roof, the duty holder needs to:
- inspect the underside of the roof to determine the extent of the fragile roof material, the existence of any safety mesh and its fixings, and the structural soundness of the roof material
 - complete the work from a temporary work platform
 - provide temporary walkways as a means of access to and egress from any work area on the roof where permanent walkways are not provided
 - secure and fix cleats to walkways on high pitch roofs (for example, where the slope of the roof exceeds 1:6)
 - provide temporary roof ladders for steep roofs (for example, in excess of 35 degrees), and
 - provide other fall protection as necessary (eg physical edge protection, safety nets or a work positioning and fall arrest system).

Purlin trolleys

161. Purlin trolleys are plant designed to travel on top of purlins (horizontal beams running along the length of a roof) and can be used to support material and employees working on a roof. They are sometimes used during the removal of roof coverings.
162. Purlin trolleys should be provided with a holding brake and a device to prevent their accidental dislodgment from the supporting purlins. Where it is intended that employees will be supported by the trolley, the trolley needs to be provided with suitable safety harness anchorage points.

Part 5 – Demolition methods

163. Before a purlin trolley is placed on a roof structure, a suitably qualified person (for example, structural engineer) needs to assess the roof structure as suitable for the particular purlin trolley, and ensure the trolley has been designed and constructed to withstand the loads placed on it and for the purpose of the safe movement of materials or persons across the roof surface.

Manual demolition of walls

164. Walls and gables should be demolished course by course. Glass should be removed from windows, doors or openings before the commencement of wall or gable demolition. All work needs to be performed from safe working platforms and employees should not work from the top of a wall or partition being demolished. A wall or partition should not be permitted to stand, unless it is effectively supported against collapse including being supported against lateral loads from wind and other forces.
165. If the demolition work involves the demolishing course by course of any walls, columns, piers or other vertical structural members, the duty holder needs to check that:
- risks to persons and property from falling, collapsing and rebounding material are eliminated or minimised, and
 - the remaining portion of the building or structure, if any, can withstand any loads, impacts and vibration caused by felling or other environmental factors such as wind.

Manual demolition of floors and members

166. All floors and other surfaces used to support employees, plant, equipment or materials during demolition work need to be assessed as capable of supporting the load. Suspended floors and their supporting members should not be loaded by employees, plant, falling or accumulated debris/materials to the extent that there is excessive deflection, permanent deformation or danger of collapse. If water is used, the increased weight of the watered debris needs to be taken into account.
167. Openings in floors, through which a person may fall, need to be properly guarded or boarded over and the boarding secured against accidental removal. Any covers or boarding of openings in floors need to be of sufficient strength to withstand any expected loads that may be imposed on the floor (eg elevating work platforms, people and material). Drop zones need to be isolated or guarded to protect employees and the public from falling objects.
168. When jackhammering concrete floors, sufficient reinforcing steel should be left in position as protection against collapse and to prevent persons falling through the floor.

Part 5 – Demolition methods

Manual demolition of frameworks

169. Before any framework is demolished or removed, all reasonable precautions need to be taken to ensure that the rest of the building does not collapse as a result. The removal of trusses needs to be done in way that does not cause wall instability.
170. An employer needs to ensure that a suitably qualified person (for example, a structural engineer) undertakes an assessment to determine the necessary supports required when cutting members. Members should not be cut unless they are supported safely and effectively. Measures need to be taken to prevent sudden spring, twist, collapse or other movement of the framework when it is cut, released or removed. Tag lines need to be used where necessary to control the load.
171. Any framework which is not demolished needs to be strong enough to remain safely in position, or needs to be guyed or otherwise supported to ensure that it will be stable in any adverse weather conditions.

Mechanical demolition

172. Mechanical demolition involves the use of powered mobile plant, such as excavators and cranes.
173. An employer or self-employed person must ensure that all powered mobile plant used for demolition work is fitted with a suitable combination of operator protective devices and designed to the appropriate standard to eliminate or minimise the risk, so far as is reasonably practicable, of operator injury due to factors including:
 - roll over and consequent cabin impact damage
 - objects falling on or over the cabin
 - objects penetrating the cabin, and
 - hazardous noise.**OHS Regulations r36 and r109**

For guidance regarding plant, see the *Plant compliance code* available at **worksafe.vic.gov.au**

Working on suspended floors

174. If powered mobile plant will be operated on a suspended floor, the employer needs to ensure that a suitably qualified person (for example, a structural engineer) verifies and documents:
- the type, size, weight and usage of any specified plant
 - that the floor is capable of sustaining the static and live loads of the plant (including attachments) and demolished materials, without excessive deformation or collapse, either:
 - without additional support from below, or
 - with specified propping to be applied from below so that the loads carried do not exceed their manufacturer's specified rating.
175. The employer needs to review the demolition SWMS and ensure that:
- where plant has been specified in the SWMS, another piece of plant of the same type and usage may only be substituted if:
 - the substituted plant is not heavier than the specified plant, and
 - advice is obtained from a suitably qualified person that the operating characteristics and dimensions of the substitute plant will not introduce any additional risks.
 - effective communication will be maintained between the equipment operator and the demolition supervisor while the equipment is operating
 - debris is progressively removed from each floor
 - vehicle buffers are used to prevent the plant from falling over the edge where plant is used to push or tip materials into nominated areas, and
 - guarding, hoarding or exclusion zones are used to protect persons against the risk of being struck by the plant or by falling debris and demolition materials.
176. Any powered mobile plant used in demolition work needs to be moved between suspended floor slabs by hoisting equipment or an appropriately fabricated ramp.
177. Load shifting equipment (for example, excavators) need to be located over a structural beam. Skid steer loaders using a breaker may not be appropriate on suspended floors due to their limited reach.
178. During the demolition work, the employer needs to ensure that the partially demolished structure can support any heavy loads. For example, the use of an excavator with a hydraulic rock breaker or pulverising attachment to break up walls and floors while other load shifting equipment is used to shift the debris on a suspended floor will result in a significant load. In the case of heavy loads, careful design and planning is needed to prevent a premature collapse of the building or structure.
179. For a checklist on the safe use of plant for demolition works, see **Appendix G**.

Part 5 – Demolition methods

Demolition of walls

180. When mobile plant (for example, an excavator with hydraulic rock breaker) is used to demolish walls, at least 900mm of the wall being demolished needs to be left intact above the floor level. This is to provide a protective barrier at the perimeter of the building and around all lift wells, stair wells, light wells and any other places where persons or objects could fall. The remaining wall can later be safely demolished from the floor below. All remaining sections of walls should be identified and highlighted as buffers for edge protection.
181. Walls should not be laterally loaded by accumulated rubble or debris, to the extent that they are in danger of collapse.

Using plant and attachments

182. All plant attachments need to be pinned and secured according to manufacturer's requirements. The plant fittings used in demolition need to be designed and fit for purpose. To avoid damaging the equipment itself and to prevent the risk of plant overturning, equipment should not be overloaded.
183. When plant is used to demolish vertical features such as columns or walls, the columns or walls should not be so high as to create a risk of debris falling onto the plant or operator.
184. The use of specialised high reach excavators can eliminate many of the hazards associated with other demolition methods. An employer needs to obtain advice from a suitably qualified person to determine whether high reach machinery can be used for a project.
185. Any member to be severed (with grapples, shears or pulverising attachments) needs to be effectively supported or, if it is allowed to fall, the duty holder needs to ensure that debris will not endanger persons or damage the remaining structure.
186. Part 3.5 of the OHS Regulations sets out requirements for duty holders (including employers) in relation to plant (including attachments). Further information on using plant safely can be found in the *Plant compliance code* and at worksafe.vic.gov.au. For a checklist on the safe use of plant for demolition works, see **Appendix G**.

Induced collapse

187. Induced collapse involves the systematic or sequential removal of key structural members and the application of a force to result in the controlled collapse of all or part of a building or structure. Expert advice needs to be sought from a suitably qualified person such as an appropriately experienced structural engineer, before this method is used.
188. Induced collapse methods should only be used on detached, isolated buildings or structures on reasonably level sites. There needs to be sufficient clear space into which the collapsing material can fall. The space needs to be large enough to contain the collapsed material. Personnel need to be moved to a safe area prior to the collapse.

Load reduction

189. Structures which are not carrying their design loads may be pre-weakened prior to deliberate collapse. This pre-weakening needs to be carefully planned so that, despite the removal of framework members or the partial cutting of load-bearing members, the remaining structure has sufficient strength to withstand severe weather conditions or impact loads until the actual collapse is initiated.
190. Dead load can be reduced by removing surplus material, machinery, roofs, cladding, walls and parts of floors before demolishing the structural frame.
191. Sometimes heavy loads are left at height to induce the collapse of the structure after movement is initiated. If this system is adopted, it needs to be carefully planned by a suitably qualified person to avoid premature collapse.

Wire rope, slings and chain pulling

192. If using wire rope, slings and chain pulling to demolish a structure, the pulling medium needs to be a securely anchored winch or plant designed for towing and heavy enough to apply the required tension without sliding or lifting from the surface on which it is located.
193. The wire rope, sling or chain needs to be long enough to ensure that the horizontal distance from the demolition work to the pulling medium is at least twice the height of the highest part to be pulled. Cable strength, available pulling capacity and connection details need to be determined and documented in the SWMS prior to undertaking the work.
194. The duty holder needs to ensure that no one is in any position where they could be struck by the wire rope, sling or chain in the event of a failure. The plant operator needs to be protected from rope breakage and flying debris. Exclusion zones need to be established where necessary to protect the safety of people who are working on or in the vicinity of the demolition work.
195. Before pulling of a wall commences, the wall need to be cut into appropriate sections having regard to height, width and construction. If it is not possible to isolate these sections, the chains or wire ropes need to be attached to their respective sections prior to the first pull being made. The free ends of the chains or ropes need to be left a safe distance from the structure. Vertical reinforcing bars should not be cut until after the wall has been pulled over.
196. All wire rope, slings and chains used in mechanical demolition need to comply with the relevant Australian Standards in **Appendix F**.

Part 5 – Demolition methods

Using explosives

197. Construction work that involves the use of explosives is HRCW, which will require preparation of a SWMS (see paragraphs 64 to 72).
198. The use of explosives as a demolition method should only be considered when it is not reasonably practicable to undertake demolition by any other method.
199. A person must be licensed by WorkSafe to use blasting explosives. If explosives are used in demolition work, a licensed person must develop a blast management plan and be responsible for all aspects of the use of explosives in the demolition. **Dangerous Goods (Explosives) Regulations 2011 r125 and r130**
200. A blast management plan must be in accordance with the applicable requirements of *AS 2187.2 Explosives – storage and use – use of explosives*, and must include a plan for dealing with any misfire. It must also be commensurate with the size, location, nature and complexity of the blasting operation to be undertaken. **Dangerous Goods (Explosives) Regulations 2011 r130**
201. A person intending to use explosives to demolish a building or structure, or part of a building or structure, must give WorkSafe written notice of that intention no later than 21 days before the intended date of the demolition. **Dangerous Goods (Explosives) Regulations 2011 r139**
202. Where explosives are being considered as a demolition method, advice needs to be obtained from a suitably qualified person (eg a person experienced in the controlled application of explosives for demolition purposes).
203. A suitably qualified person needs to thoroughly assess the structure to be demolished and the surrounding area to determine whether the safe use of explosives is possible.
204. The employer needs to ensure there is a suitably large exclusion zone around the demolition site to protect people and property from flying debris.
205. Procedures and any associated plant need to be in place to ensure that demolition can be completed if the explosives fail to induce complete collapse. This is to prevent a weakened structure being left standing and presenting a risk to the safety of people both on the demolition site and in the surrounding area. For example, it may be possible to have a robotic camera system in place to allow an engineer to remotely inspect the structure to determine its structural integrity and the safest method to achieve collapse.
206. All possession, storage, handling and use of explosives must be carried out in compliance with the *Dangerous Goods Act 1985* and the *Dangerous Goods (Explosives) Regulations 2011*. For more information on these duties, go to **worksafe.vic.gov.au**.

❖ Part 6 – Demolition of special structures

Employers must, so far as is reasonably practicable, consult with employees and HSRs, if any, on matters related to health and 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 pages 6 and 7.

207. Some structures are complex or unusual because of the nature of their construction or condition. They include:
- pre or post-tensioned construction
 - pre-cast concrete panel and framed structures
 - stressed skin structures (eg buildings that rely on the sheeting, cladding or decking to stiffen and restrain the structural framework), and
 - slung structures (eg floors or roofs) that are in some way suspended from a framework, supported by a structural core.
208. Special structures require careful planning to be demolished safely. An appropriate demolition method and sequence needs to be selected and documented prior to the work commencing. A demolition plan and an assessment by a suitably qualified person of the proposed demolition method may assist with this process.

Pre and post-tensioned concrete

209. Pre-tensioned concrete contains tendons (wires, strands or bars) that have been tensioned before the concrete is placed. Post-tensioned concrete contains tendons that have been tensioned after the concrete has hardened.
210. Tensioned tendons require controlled removal because of the high level of stored energy in the tendons. It is also important that structural stability is retained during and after tendon removal, prior to the final demolition of the concrete element.
211. The tendons can be subject to corrosion that weakens them and decreases the structural integrity of the building. Damage is not usually evident externally, even if strand breakage is extensive, and conditions can vary widely even within an individual structure.
212. Before demolishing pre or post-tensioned concrete elements, the duty holder needs to review all available documentation on the building or structure including:
- building plans, designs and specifications to understand the type of tensioning used, the load carried, anchorage points and number of tendons, and
 - any construction photographs to obtain information on anchorage details, the construction sequencing, and any other measures that may affect moisture access.

Part 6 – Demolition of special structures

213. The condition of the concrete and tendons needs to be considered before and during demolition, for example by:
- conducting a visual inspection to confirm loads, obvious deviations from the original design and waterproofing details
 - assessing conditions throughout the building, as well as utilising selective testing in representative areas to assess any weakening or breakage of tendons
 - measuring humidity within tendon sheathing and analysing any sheathing contaminants
 - removing, inspecting and testing a small number of tendons to assess their condition, and
 - continuing to monitor tendon tension.
214. Suitable risk controls need to be implemented, for example using steel plates or other restraint measures at locations adjacent to pedestrian areas or where concrete cover is reduced. This will help to minimise the risk to people arising from the unexpected release of stored energy in tendons.
215. If partial demolition is required (ie cutting penetrations into tensioned floor slabs), precautions need to be taken to ensure the tendons are adequately restrained prior to work commencing. An employer needs to obtain advice from a suitably qualified person (for example, an experienced structural engineer) regarding the proposed work plan for partial demolition.

Fire-damaged, ruinous and structurally unsound buildings or structures

216. The employer or demolition contractor should request a written report by a suitably qualified person (for example, a structural engineer) specifying the hazards associated with the current state of the structure.
217. The report should clearly identify any areas of the building or structure where it is likely that hazardous materials (for example, asbestos) may exist but it has not been possible to check for their presence.
218. In specifying the hazards, or likely hazards, associated with the current state of the building or structure, the report should also specify the control measures that should be applied to the demolition.
219. Structurally unsound buildings or structures need to be demolished by mechanical means. Fire damaged or ruinous buildings should be assessed to determine if they are structurally unsound.

Lift shafts

220. Lift shafts can be complex to demolish due to the combination of the lift shaft structure and the lift plant (including the lift cage or car, winders, counterweights, electrical supply and controls). Lift shafts may be demolished by manual or mechanical means depending on the circumstances at a particular site.

Part 6 – Demolition of special structures

221. In general, demolition procedures should include the following:
- temporary support of the lift cage and the disconnection of electric power to all areas of the lift machinery
 - lowering of any counterweights to an appropriate level for disconnection and the unwinding of cables in a controlled manner prior to the removal of drums
 - provision of temporary decking in the lift shaft, and
 - progressive demolition of the lift shaft walls onto existing floors and the removal of any debris.

Basements, cellars, vaults, domes and arched roofs

222. During the demolition of a basement, cellar, arch, vault or dome frequent inspections should be made to identify whether there has been any unplanned movement. If unplanned movement is detected, appropriate action needs to be taken to avoid any uncontrolled collapse.
223. If a basement, cellar, vault or void adjoins another property, any adjoining walls need to be inspected to determine whether they are strong enough to withstand the resultant ground pressure. If they are not, the proposed methods of strengthening them need to be subject to an assessment by a suitably qualified person (for example, a structural engineer).
224. LPG gas cylinders should not be used in any area, including basements and cellars, where it is likely that there will be insufficient ventilation to ensure any gas leakage is readily dispersed, unless specific risk control measures to ensure adequate ventilation are designed, implemented and continuously monitored.
225. If work is to be undertaken in a basement, it will be necessary to determine if the basement is a confined space. Part 3.4 of the OHS Regulations apply to working in confined spaces. Further information can be found in the *Confined spaces compliance code* at worksafe.vic.gov.au.
226. If a basement has been built in-ground with a high water table, measures need to be taken, as far as is reasonably practicable, to prevent any collapse as a result of hydraulic pressure, uncontrolled water inrush or flotation.

Masonry and brick arches

227. Masonry and brick arches need to be demolished in a sequence that allows for the removal of as much of the dead load material as possible without interfering with the stability of the main arch rings. The spandrel infilling should only be removed down to the springing line as the load-carrying capacity of many old arches relies on the filling between the spandrels. In multi-span arches, lateral restraints need to be provided at the springing level before individual spans are removed.

Part 6 – Demolition of special structures

Independent chimneys and spires

228. A detailed inspection and survey should be completed prior to the demolition of a chimney or spire. In particular, the condition of the structural material, which can range from stone and brick to steel, timber and concrete, should be assessed to identify any faults, such as fractured or badly weathered stone or rotten timbers.
229. Measurements should be taken to determine whether there is any deviation from the perpendicular. The possibility of chimney or spire instability resulting from inclement weather (for example, high winds) needs to be considered during all stages of demolition work.
230. If sequential demolition is used, it needs to be carried out progressively from the top of the chimney and, where required, from safe working platforms. Temporary supports may be required to ensure that premature collapse does not occur.
231. Induced collapse may also be used to demolish a chimney. Induced collapse of a weakened structure using mobile plant needs sufficient clear space – approximately 1.5 times the total height of the chimney and of sufficient width depending on the type of structure.

Precast concrete panels

232. If a structure is composed of a series of reinforced precast concrete panels, an inspection of the fixings to the rest of the structural elements, jointing between elements, and the lifting points or fittings needs to be undertaken to establish their nature and condition before any demolition of the structure begins.
233. Where possible, the panels need to be removed by a crane in the reverse sequence to that used for their erection. Wherever panels act as bracing, for example along a wall, sufficient temporary bracing needs to be provided to the structure, to maintain its stability during and after removal of the panels.
234. The original lifting points or fittings should not be reused to lift or support a panel during its removal.
235. Before removing any individual panel, it needs to be fully supported, both vertically and horizontally, above its centre of mass, to prevent any sudden rotational movement during its detachment from the supporting structure.

Part 6 – Demolition of special structures

Facade retention

236. The retention of facades needs to be planned and documented before demolition work commences. The demolition method used should take into account the limits imposed by the planned facade retention.
237. Where there is a risk of persons being struck by falling debris or materials, guarding, hoarding or exclusion zones need to be used.
238. If a facade is retained, the risk of its collapse needs to be controlled. This may include repairing facade or footings, and the use of temporary support for the facade. Supports may need to be installed before demolition work commences or in stages during the demolition work, depending on the support design and other external factors such as wind.
239. The facade and any temporary facade supports need to be monitored for signs of potential structural failure such as movement, cracking or subsidence during the various stages of the demolition work. A suitably qualified person (for example, structural engineer) should inspect the facade and supports if any signs of structural failure are detected, and supervise any necessary remedial works to stabilise the structure. The structure needs to be inspected after incidents such as heavy rain or wind, an earth tremor or accidental impact on the facade or its supports.

Storage tanks and pipelines

240. Before an above ground or underground storage tank or associated pipelines are removed or demolished, any previous use needs to be determined and appropriate action taken to identify the contents so that appropriate controls can be implemented. Delivery lines and vent pipes need to be purged. Any contents found in the tank or pipes need to be safely removed and disposed of appropriately. If the tank or pipes have previously held dangerous goods, the occupier of the premises must ensure that the receptacle is thoroughly cleaned so that there is no discernible trace of the dangerous goods, or the contents neutralised, cured or chemically deactivated and that the atmosphere within the receptacle is cleared. [Dangerous Goods \(Storage and Handling Regulations\) 2012 r39](#)
241. Prior to demolition or removal, the employer needs to obtain advice from a suitably qualified person to confirm that tanks and pipelines are free of gas, flammable vapours or other hazardous substances.
242. If work is to be undertaken in storage tanks then it is necessary to determine whether they are a confined space for the purpose of the work. Part 3.4 of the OHS Regulations apply to working in confined spaces. For more information see the *Confined spaces compliance code* and other guidance at worksafe.vic.gov.au.

Part 6 – Demolition of special structures

General precautions

243. During the demolition of tanks and pipelines, the following precautions need to be taken:
- make sure that no flammable or toxic substances or combustible liquid is allowed to enter any drainage system or watercourse
 - if excavating underground tanks or pipelines, check the soil surrounding the tank/pipe to establish that it is not contaminated, either by leakage from the tank/pipe or by spillage, and
 - do not undertake hot work (for example, oxy-fuel gas cutting) where there is a chance that flammable material may be present as a result of leakage/spillage or after cleaning out the tank/pipe.

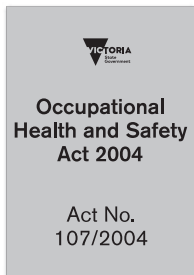
Hazardous facilities

244. Special precautions will be required during the demolition of major hazard facilities (MHFs), chemical works, gas works and similar establishments. These types of facilities need to be examined by a suitably qualified person (for example, a chemical engineer), in order to determine the nature of any plant and chemical deposits and their influence on the method of demolition or dismantling.

Containers that have held flammable or combustible material

245. Welding and cutting work on containers that have held flammable or combustible liquids, solids, gases or dusts can result in fire or explosion if the containers are not entirely free of these materials.
245. A rigorous cleaning process needs to be undertaken and any instructions for cleaning need to be followed. Containers which have held any of the following materials are considered unsafe and hot work must not be started before they are properly cleaned:
- petrol, kerosene, solvents, or light oils
 - acids and alkalines, which can react with metal to produce explosive or toxic gases
 - heavy oils, tars or solids which can release combustible gases when exposed to heat, and
 - flammable solids, whose finely divided particles may form an explosive dust cloud. [Dangerous Goods \(Storage and Handling Regulations\) 2012, r39](#)
246. Any container which has held flammable or combustible substances needs to be considered unsafe until confirmed otherwise by a suitably qualified person. For more information about testing the atmosphere in a container see the *Confined spaces compliance code* at worksafe.vic.gov.au.

Appendix A – The compliance framework



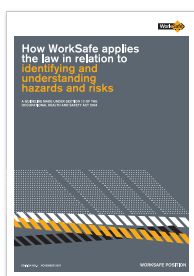
The Occupational Health and Safety Act 2004 (OHS Act) sets out the key principles, duties and rights in relation to occupational health and safety.



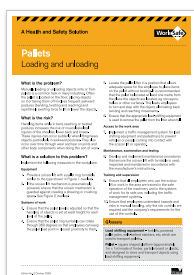
The Occupational Health and Safety Regulations 2017 (OHS Regulations) specify the way in which a duty imposed by the OHS Act must be performed, or prescribe procedural or administrative matters to support the OHS Act (eg requiring licences for specific activities, the keeping of records or giving notice).



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 – Demolition plan

Given the specialist nature of demolition work, a demolition plan should be prepared to collate the key information relevant to the work into a single document including some information relevant to occupational health and safety. A demolition plan is not a replacement for the various SWMS required for the high risk construction work. The SWMS may reference the demolition plan, such as for more detailed information the demolition methodology. The demolition plan should reference when SWMS will be required for the various tasks.

A demolition plan should include:

- the location of the site on which the structure to be demolished stands
- the overall height of the structure above ground level and the least distance from the structure to each site boundary
- the type of building (occupancy class), its structural support system and the principal materials of its construction
- the proposed methods of demolition including the number and types of major items of plant
- the proposed methods for handling and disposing of demolished materials and, in particular, of hazardous materials
- the proposed methods of controlling and maintaining access and egress to workplace
- the proposed sequence of carrying out the demolition works and an estimate of the time (in days) it is likely to take to complete all of each of the stages of the work
- the proposed hoardings, scaffolding and fencing, any overhead sidewalk protection or roadway footpath closures
- any other plans, illustrations, written documents, or specialist reports as may be necessary to support the proposed methods of work or protective structures
- traffic management arrangements, which includes managing vehicles and mobile plant hazards in relation to operation at the workplace and interaction with the public.
- the location and condition of the following:
 - services above or below ground, including:
 - > electricity
 - > drainage and sewerage
 - > gas
 - > water
 - > communications cables (eg telephone, radio and television relay lines)
 - > hydraulic pressure mains
 - > liquid fuel lines
 - > lubrication systems
 - > process lines (chemical, acid)
 - > above ground essential services
 - > hazardous materials including asbestos
 - > underground structures such as a basement, cellars, or storage tanks
 - > any confined spaces where work will be undertaken
 - > the general condition of structures on adjoining properties, particularly where these are close to or on the boundaries of the demolition workplace the effect demolition may have on people working in adjoining properties or seeking access to and egress from those properties, and
 - > the emergency arrangements, which should include equipment for the rescue of injured persons.

Appendix C – Engineering investigation considerations

Some of the issues to be considered when undertaking an engineering investigation include:

- obtaining the as-built details of the component members (if available)
- identifying the type of structural system involved
- conducting a search for engineering details specifying size, type and configuration of reinforcement and the strength of materials (if available) and the located documents referenced
- assessing the current load-carrying capacity of the structure, taking into account
 - the strength requirements set out in the relevant technical standards current at the time of construction compared to current standards
 - degradation of the original properties of the materials used due to time, weathering, wear, or other deleterious causes
 - the capacity of the structure as a whole and individual members to sustain superimposed loads without
 - > premature collapse of any member, or
 - > deforming to an extent leading to static instability of the member itself or to connected members
- verifying the composition or quality of structural components, if necessary, using methods such as
 - core drilling
 - electronic reinforcement location
 - exposure of reinforcement
- assessing any loss of structural strength resulting from any destructive investigation methods used
- identification and location of floor penetrations to facilitate construction or structural irregularities
- assessing whether the proposed methods and sequence of demolition can be executed without causing unpremeditated collapse of the whole or part of the structure, and
- identifying any other details of the structure regarding strength, construction or contents which will influence the selection of demolition methods/procedures.



Appendix D – Health and Safety Coordination Plan Template

(OHS Regulations r337)

Health and safety coordination plan			
Project:		Location:	
Prepared by:		Date:	
Name of principal contractor:		Phone number:	
<p><i>Note: A co-ordination plan must be reviewed if there are any significant changes to the work. It must be available for inspection by anyone doing construction work on the project, new employees, health and safety representatives, and members of the health and safety committee.</i></p>			
People with specific health and safety responsibilities			
Name	Position	Phone number	Brief description of OHS responsibilities
Arrangements for co-ordinating the health and safety of the project			
Describe the responsibilities for the arrangements. Include the arrangements for communicating with contractors and others who may be off-site from time to time.			
Item			Responsible person

Health and safety coordination plan (continued)	
Arrangements for managing health and safety incidents	
Include responsibilities for notifying emergency services and WorkSafe.	
Item	Responsible person
Site safety rules	
Each rule should be simple and clear, covering only one issue. Set out who is covered by each rule and who is responsible for communicating it.	
Item	Responsible person



Appendix E – Safe Work Method Statement Template

Sample SWMS Template for High Risk Construction Work (HRCW)

This template should be used in conjunction with WorkSafe's publication Information about Safe Work Method Statements

DUTIES:

- 1) A SWMS **must** be prepared if proposed works involve any of the HRCW activities listed below and that work poses a risk to the health and safety of any person.
- 2) Affected employees and their HSRs **must** be consulted in the preparation of the SWMS.
- 3) Once a SWMS has been developed and implemented, the HRCW to which it relates **must** be performed in accordance with the SWMS.
- 4) Duty holders (builder and sub-contractor) **must** stop the HRCW immediately or as soon as it is safe to do so if the SWMS is not being complied with; the HRCW must not resume until the SWMS is complied with or reviewed and revised as necessary.
- 5) The SWMS **must** be reviewed and if necessary, revised whenever the HRCW changes, or after any incident that occurs during HRCW, or if there is any indication that risk control measures are not adequately controlling the risks.
- 6) An employer **must** retain a copy of the SWMS for the duration of the HRCW.

Direct employer:		Principal contractor (PC): (Name and contact details)	
Work supervisor: (Name and contact details)		Date SWMS provided to PC:	
Work activity: (Job description)		Workplace and works location:	

High risk construction work:

<input type="checkbox"/> Where there is a risk of a person falling more than two metres.	<input type="checkbox"/> On or adjacent to roadways or railways used by road or rail traffic.	<input type="checkbox"/> In, over or adjacent to water or other liquids where there is a risk of drowning.
<input type="checkbox"/> At workplaces where there is any movement of powered mobile plant.	<input type="checkbox"/> Involving structural alterations that require temporary support to prevent collapse.	<input type="checkbox"/> In an area where there are artificial extremes of temperature.
<input type="checkbox"/> On or near energised electrical installations or services.	<input type="checkbox"/> Involving a trench or shaft if the excavated depth is more than 1.5 metres.	<input type="checkbox"/> On or near pressurised gas distribution mains or piping.
<input type="checkbox"/> Involving demolition.	<input type="checkbox"/> Involving a confined space.	<input type="checkbox"/> On or near chemical, fuel or refrigerant lines.
<input type="checkbox"/> Involving tilt-up or precast concrete.	<input type="checkbox"/> On telecommunications towers.	<input type="checkbox"/> Involving diving.
<input type="checkbox"/> Involving removal or likely disturbance of asbestos (note: preparation of an asbestos control plan is taken to be preparation of a SWMS).	<input type="checkbox"/> In an area that may have a contaminated or flammable atmosphere.	<input type="checkbox"/> Involving the use of explosives.
		<input type="checkbox"/> Involving a tunnel.


Person responsible for ensuring compliance with SWMS:		Date SWMS received:	
What measures are in place to ensure compliance with the SWMS? (eg direct supervision, regular spot checks)			
Person responsible for reviewing SWMS control measures (eg PC's representative):		Date SWMS received by reviewer:	
How will the SWMS control measures be reviewed?			
Review date:		Reviewer's signature:	

Selecting risk controls:
Any risk to health or safety must be **eliminated**, or if that is not reasonably practicable, **reduced** so far as is reasonably practicable by:

- implementing any mandated controls specified by law (eg the OHS Regulations 2017)
- substituting a new activity, procedure, plant, process or substance (eg scaffold in preference to ladders)
- isolating persons from the hazard (eg fence off areas for mobile plant operation)
- using engineering controls (eg guard rails, trench shields) – or a combination of the above.

If any risk to health or safety remains, it must be reduced by using:

- administration controls (eg activity specific safety training, work instructions, warning signs)
- PPE such as respiratory protection, hardhats, high visibility clothing – or a combination of the above.



What are the tasks involved?			What are the hazards and risks?			What are the risk control measures?		
<i>List the work tasks in a logical order.</i>			<i>What aspects of the work could harm workers or the public?</i>			<i>Describe what will be done to make the activity as safe as possible?</i>		

Name of Worker	Signature	Date	Name of Worker	Signature	Date	Name of Worker	Signature	Date



Appendix F – Documents associated with this compliance code

The references listed are not incorporated into this Code; they are included to provide an indication of sources of additional information. This means the references do not form part of this Code. Note that some references may have legal status in their own right.

- Security fencing, falling materials, overhead protection and hoardings
 - *AS 2601: The demolition of structures.*
- Lead
 - *AS 4361.1 Guide to lead paint management – industrial applications.*
- Demolition methods
 - *AS 2601: The demolition of structures.*
- Wire ropes and slings in mechanical demolition
 - *AS 1353 Flat synthetic-webbing slings*
 - *AS 1666 Wire-rope slings*
 - *AS 3775 Chain slings for lifting purposes*
 - *AS 1438 Wire-coil flat slings*

Appendix G – Checklist for safe use of plant for demolition works

Item		Yes / No
Plant:		
1	Is the plant suitable for the environment (eg the type of surface and slopes that the plant is required to travel on)?	
2	Are the operators controls protected from sustaining damage due to the demolition activities such as debris and oxy-cutting?	
3	Is the plant maintained and in a safe condition to use?	
4	Is the safe working load of the plant clearly marked as appropriate?	
5	Does the plant have the required lifting capacity for the task taking into account the weight of any attachments such as shears, pulverisers etc? If using a crane to secure and remove building components then the rated capacity of the crane should be at least 1.5 times the assessed load to allow for dynamic loads.	
6	Does the plant have the required reach for the intended task?	
7	Is the plant fitted with the appropriate warning devices and, where required, work lighting?	
8	Is the plant fitted with appropriate designed operator protection systems (eg rollover protection structure, falling objective structure, cabin window safety grilles)?	
9	Is there sufficient space and traffic management in place to allow for safe plant delivery, storage and collection?	
10	Are there systems of work in place to separate persons from mobile plant such as no-go or exclusion zones	

Structure:		Yes / No
11	Are pre-tensioned or post-tensioned elements present?	
12	Has the type of structure and material been assessed for suitability against proposed demolition method? Has the structure and individual structural elements been assessed for bearing capacity to take the plant and associated demolition loads that is to be placed upon them including: <ul style="list-style-type: none"> ▪ mass of plant (including point loadings) ▪ mass of any lifted / attached loads ▪ any impact loads from demolition ▪ demolition materials 	
14	Has the presence of any basements or other cavities within the structure been identified, investigated and assessed?	

Appendix G – Checklist for safe use of plant for demolition works

Structure:		Yes / No
15	Have all services and infrastructure assets been identified and located?	
	Will any services or assets impact on the capacity of proposed plant to operate safely?	
16	Is there sufficient space available to operate the required plant (eg crane and demolition ball)?	

Temporary Works:		Yes / No
17	Has the need for any temporary propping been assessed?	
18	Has any temporary propping been designed by a suitably qualified person?	
19	Has the load carrying capacity of any proposed hard standing areas for plant been assessed by a suitably qualified person?	
20	Has the stability of any ramps (temporary or existing) intended to be used by plant been assessed by a suitably qualified person?	

Employees:		Yes / No
21	Are plant operators competent in the operation of the specific plant and any attachments fitted (eg make and model)?	
22	Where required, do operators have appropriate high risk work licences?	
23	Has the appropriate level of supervision been assigned based on complexity and scope of work and the experience profile of employees?	

Safe Work Method Statement (SWMS):		Yes / No
24	Has a SWMS been developed for all demolition work and all other high risk construction work (for example, movement of powered mobile plant)?	
25	Have all relevant employees been consulted on the development of the SWMS?	
26	Have all relevant employees been inducted, and trained as necessary, on the implementation of the SWMS?	
27	Does the SWMS include control measures for protecting other workers and members of the public from risks arising from the demolition work?	



WorkSafe Agents

Agent contact details are all available at worksafe.vic.gov.au/agents

For information about WorkSafe in your own language, call TIS National on 13 14 50

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