

Australian Capital Territory

Work Safety (ACT Code of Practice for Formwork) Code of Practice 2011

Disallowable instrument DI 2011–29

made under the

Work Safety Act 2008, section 18 (Codes of Practice)

1 Name of instrument

This instrument is the *Work Safety (ACT Code of Practice for Formwork) Code of Practice 2011*.

2 Commencement

This instrument commences on the day after notification.

3 Approval of a code of practice

Under section 18 of the *Work Safety Act 2008*, having consulted with the ACT Work Safety Council, I approve the ACT Code of Practice for Formwork as a code of practice.

Katy Gallagher
Minister for Industrial Relations

7 February 2011

WorkSafe ACT

Code of Practice

Formwork



2011

What is an ACT Code of Practice?

An approved ACT Code of Practice is a practical guide to help workers and businesses achieve the standard of health, safety and wellbeing of people required by the *Work Safety Act 2008* and Work Safety Regulation 2009.

Codes of Practice are approved by the Minister for Industrial Relations. In approving each Code of Practice, the Minister consults the ACT Work Safety Council, a tripartite advisory body that represents the interests of local workers and business owners.

What does this Code of Practice cover?

This Code of Practice has been developed by WorkSafe ACT and the ACT Office of Industrial Relations. The purpose of the Code is to provide businesses and workers with practical advice to help prevent injury to workers and bystanders when erecting and dismantling formwork and associated equipment.

This Code has been recommended for approval under the *Work Safety Act* by the ACT Work Safety Council.

How should I use this Code of Practice?

Codes of Practice provide practical guidance on how to comply with legal duties. This Code should be followed unless an alternative course of action results in the same standard of health, safety and wellbeing, or, a higher standard, at the workplace.

This Code outlines some relevant legal requirements set out in the *Work Safety Act* or Work Safety Regulation, and, recommended courses of action. The words 'must', 'requires' or 'mandatory' indicate that a legal requirement must be followed.

Codes of Practice should be used in conjunction with the Act and Regulation. If a person is uncertain about what to do, they should ensure they have complied with the Act and Regulation first. While a person cannot be prosecuted for not complying with a Code, an inspector or court can consider whether a Code has been complied with in deciding whether a person has met their legal duties.

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1. Introduction

This Code of Practice is the ACT *Code of Practice: Formwork* (2011). It provides advice to help prevent injury to workers and other people as a result of erecting and dismantling formwork and associated equipment. It covers the design, planning, preparation and conduct of work for erecting and dismantling formwork (and associated equipment).

Formwork is an inherently high risk activity. It usually involves work at heights over rough, uneven or possibly unstable terrain where other building materials and equipment are often present. It may also involve multi-storey work, with the associated risks of structural collapse or objects falling on workers and bystanders. Past incidents involving formwork in the ACT demonstrate that people falling from formwork or caught in a formwork collapse are likely to be seriously injured.

This Code of Practice commences on 1 January 2011. It is approved under section 18(1) of the *Work Safety Act 2008* by the Minister for Industrial Relations on the recommendation of the ACT Work Safety Council.

The *Work Safety Act 2008* replaced the former *Occupational Health and Safety Act 1989* in the Territory on 1 October 2009. It is a modern law that reflects best practice and addresses both emerging safety issues and contemporary work arrangements.

The Act sets out a general framework for the health, safety and wellbeing of people at work. The Work Safety Regulation 2009 provides further detail on specific hazards and for particular workplaces. The Act is also supported by Codes of Practice and guides. For further information on how work safety laws operate in the ACT refer to *Appendix A*.

2. Consultation

Consultation happens:

- when an employer raises safety issues with their workers and gives them a reasonable opportunity to express their views before making a decision; and
- when an employer is approached and takes worker views into account when making a decision

Consultation usually results in finding the best solutions to a problem through a genuine exchange of ideas. Consultation helps to resolve issues quickly, improve worker satisfaction, increases productivity and ensures decisions are properly implemented.

Consultation is not a negotiation as it does not remove the right of the employer to manage and does not require an agreement to be reached. That said, it is not just telling workers what their employer has already decided. It involves seeking out and listening to workers before decisions are made and taking worker's views into account. Effective consultation creates a genuine partnership between employers and workers for managing work safety risks.

Consultation is an essential part of every step in the risk management process. It is not a one-off activity – it should happen regularly so workers know how to raise work safety issues and tell their employer if something is not right on site (such as 'near misses') and can feel assured their employer will take their interests into account.

Consultation during formwork

All people engaged in the erection or dismantling of formwork should consult each other when implementing the recommendations of this Code and ensuring work safety by managing risk. This means consultation should include:

- any person or business commissioning relevant work;
- the principal contractor;
- the formwork subcontractor;
- engineers providing advice and assessments at all stages of the works;
- any other expert assisting with design, planning, construction or dismantling;
- any other person conducting a business or undertaking that is involved; and
- workers (and their representatives).

The consultation process should be first used during the planning and preparation stage to determine safe systems of work based on an assessment of risks. Designers (which may include developers, architects and structural engineers) should be involved in the consultation process when appropriate.

The consultation process should involve discussion of the following factors:

- nature of the work,
- the planned staging process for the work;
- the type of form to be used;
- the height of the formwork to be erected;
- the size of the formwork deck;

- availability of equipment;
- interaction with other trades and workplaces;
- workplace access;
- public safety; and
- the location of intermediate working decks.

Since 2009, the *Work Safety Act* has required all employers to consult their workers about work safety issues, no matter how many workers they have. Each business owner ('employer') has to consult every person they engage to perform work, whether they are a traditional 'employee' or not. There are also new flexible consultation options to meet the needs of different type of workplaces.

Work Safety Representatives

One option to consult workers is to arrange for them to elect a Work Safety Representative (also called a health and safety representative). This person would then speak for, and to, the workers about work safety issues (such as potential risks on site).

Once they are elected and have completed prescribed training (see the Work Safety Regulation), a Representative has specific powers and duties under the *Work Safety Act*. A Representative is usually a worker. However, if no worker is willing, another trained person can be elected if agreed by the employer. This could allow a Representative to be elected for more than one employer on a single site or across more than one site at the same time.

An employer must arrange for a Representative to be elected if more than half of the workers ask for one, or, if WorkSafe ACT directs that employer (or every employer in their industry) to have a Representative. Failing to do so is an offence.

Work Safety Committees

Work Safety Committees are another way to consult workers. Committees are an effective way to oversight work safety at a high level, particularly for large employers and for workplaces with a large number of employees. A Committee can be made up of workers, employer representatives and any Work Safety Representatives. A Committee can be formed across multiple work sites and/or multiple employers.

A Work Safety Committee can:

- give information, ideas and feedback to an employer about best practice;
- provide a forum for the employer to raise work safety concerns;
- encourage workers to take an interest in work safety issues at their workplace;
- review the circumstances of injuries, diseases and serious incidents at work; and make recommendations to the employer; and
- undertake other activities agreed between the employer and Committee that the Committee members have suitable qualifications and training to deal with.

An employer must arrange for a Committee to be elected if more than half of the workers ask for one, or, if WorkSafe ACT directs that employer (or every employer in their industry) to have a Committee. Failing to do so is an offence.

Who is responsible for consultation?

If there are multiple employers at one workplace (such as on a construction site) each employer must ensure that their workers are consulted. For example, the principal contractor and each subcontractor must consult all the workers they have engaged. The most effective and convenient approach where there are complex contractor arrangements might be for each sub-contractor to set up their own arrangements, and for the principal contractor to consult their sub-contractors.

For further detail on consultation, please refer to the ACT Work Safety Commissioner's guidance material, *Workplace Arrangements (A Detailed Guide)* (September 2009).

3. Planning and Preparation

Formwork Systems

Traditional formwork systems were made on site from timber or plywood. In addition to traditional systems, modular systems are also available that are specially designed and manufactured off-site. These systems usually have proprietary formwork components and rated load calculations set out by the manufacturer and are often made from hardboard, plastics, steel and aluminium products. Most formwork systems use two or more materials (for example, plywood facing to steel frames for wall panels).

In choosing a formwork system for a particular job, you should take into account the safety implications for workers erecting, using and dismantling the system. In thinking about safety factors, pay particular attention to three key issues: stability, strength and how you will control the risk of falls (both falling people and falling objects).

When using a traditional system, you should use standard formwork frames that have a known tested loading capacity wherever possible and ensure that they are spaced at no more than the recommended distances apart. Wherever practical, it is preferable to use a proprietary formwork system as this usually results in improved safety for workers erecting and dismantling the formwork and handling and storing materials. The best proprietary systems available have integrated safety features that help to control the risk of falls and injury during manual tasks.

Both modular and traditional formwork systems should be designed to comply with the loadings and general principles in *AS 3610: Formwork for Concrete*.

Where a modular system is used in combination with a traditional system formwork drawings should be certified as complying with applicable Australian Standards. Similarly, components from another system should not be used as an integral part of the modular framework system unless the designer of the modular system states that this is permitted.

Throughout this Code of Practice, the word 'deck' is used to refer to both traditional plywood formwork and the equivalent working platform for people where a modular or composite deck system is being used.

Overview

Careful planning and preparation is the first essential step in ensuring that work is done safely and should begin as early as possible in the process. Planning and preparation should involve consultation with all people involved.

Section 14 of the *Work Safety Act* requires each person conducting a business or undertaking (such as principal contractors and subcontractors) to manage risk through a risk assessment process. This assessment should form part of a site-specific Safety Management Plan put together by the person in control of the project before work commences, particularly if five or more people are (or are likely to be) working at the same time.

The principal contractor should ensure that each person with control of formwork (including subcontractors and self-employed people) gives the principal contractor a written safe work method statement before work commences. These statements must be kept up to date and reviewed if there is a change to the work they relate to.

All formwork undertaken in the ACT should comply with **AS 3610 Formwork for Concrete**. This means that formwork should be designed, constructed and maintained to safely support all loads that are to be placed on it.

The adequacy of the components of the formwork for a suspended slab or beam should be inspected and certified in writing to comply with that Australian Standard, by a formwork engineer as being safe for its intended purpose and the loads that will be placed on it. This must occur prior to placing concrete for each stage of the works. However, this requirement does not apply where:

- the deck of the formwork system is less than 3 metres above the lowest surrounding ground level;
- the area of the discrete formwork is less than 16m² and is designed to hold not more than 2.5m³ (or 6 tonnes) of wet concrete (whichever is appropriate).

For further detail on Safe Work Management Plans or Safe Work Method Statements, please refer to the *National Standard for Construction Work* (2005).

Planning by designers

Designers for work involving formwork (such as developers, architects and structural engineers) have a duty to ensure work safety under Section 24 of the *Work Safety Act*. A designer must ensure work safety in relation to the design of plant or structure by managing risk if they are a person in control of:

- the design of plant or a structure that is used, is to be used or could reasonably be expected to be used, at work or at a workplace; or
- the design of a structure that is, is to be or could reasonably be expected to be, a workplace.

Control includes the authority to make decisions about the design. To comply with their duty, designers must take reasonably practicable steps to identify risks associated with

their work and eliminate any risk that might result – if it is not possible to eliminate a risk, the risk should be minimised so far as reasonably practicable. **The designer must also inform anyone else with a duty to manage risk about the risks they have identified.**

In undertaking design work under this Code, designers should consider the safety risks of the work practices needed to carry out the erection and dismantling of formwork. This should, at least, include the following:

- the possibility of using designs that do not require *in-situ* formwork, such as structures that may be constructed at ground level and lifted into position;
- the method and sequence of erecting and dismantling formwork;
- minimising the working heights for persons erecting and dismantling formwork;
- that guardrail systems (including toeboards), perimeter safety screens, scaffolding or other means are able to be installed when working at heights;
- that fall arrest systems (including safety lines) are able to be installed if required;
- advice and information (such as drawings, scope of work instructions and bills of quantity) should be provided to the formwork contractor and the principal contractor about the use of multiple level frames or high strutting where additional safety precautions may be required;
- that sloping surfaces on formwork are slip hazards and appropriate control measures be identified to prevent injury;
- any manual handling risks associated with the erection and dismantling of the formwork required by the design; and
- the formwork design should comply with *AS 3610 Formwork for Concrete*.

For further detail on these duties, please refer to the ACT Work Safety Commissioner's *Guide to ACT Safe Design: Safe Structure, Systems and Workplaces* (September 2009).

Planning by principal contractor

As a person conducting a business or undertaking, principal contractors have a duty under Section 21 of the *Work Safety Act* to ensure work safety by managing risk to the extent of their control on site. This applies whether the principal contractor is an individual, employer, self-employed person, corporation or franchisor. This duty includes, but is not limited to:

- providing and maintaining a safe workplace and safe systems of work;
- providing and maintaining plant that is safe and without risk to the work safety of workers and other people at the business or undertaking;
- ensuring that plant is operated only by workers and other people at the business or undertaking who are qualified to do so;
- ensuring the safe use, handling, storage and transport of substances;
- providing adequate facilities for workers and other people;
- monitoring the work safety of workers, and the conditions at the workplace, to ensure that work-related illness and injury are prevented; and
- keeping required information and records on work safety required (including incident reports and training records) in relation to their business;
- providing appropriate information, instruction, training or supervision to workers and other people to allow work to be carried out safely; and
- consulting workers on matters that directly affect their work safety.

Principal contractors are also likely to be a ‘person in control of premises’ under the *Work Safety Act*. A person is in control of premises in a range of circumstances, including where they have the authority to make decisions about how the premises are managed. This means that, in this additional capacity, they must ensure work safety in relation to the premises by managing risk, to the extent that the premises are within their control. For example, premises must be maintained in a way that is consistent with work safety, and, there must be safe entry to and exit from the premises.

To fulfil their obligations principal contractors must plan for work to be done safely. When planning the site layout and sequence of work the principal contractor should prepare and document a Safety Management Plan (as outlined above). This Plan should be based on consultation with contractors and workers (or their representatives) and include documented safe work method statements by contractors (where required).

Before formwork operations start, the principal contractor (in consultation with the contractor carrying out work) should:

- undertake an assessment of the risks involved in carrying out the work;
- identify the most appropriate methods to control any risk of injury. These include safeguards such as guardrail systems (including toeboards), perimeter safety screens, barriers and fall arrest systems;
- provide safe access to and from the site and safe movement on site;
- ensure that all workers have received appropriate training and instruction;
- ensure electrical safety, including systems of work for the safe use of equipment;
- ensure that the base on which formwork will be placed is adequate to support the weight of the formwork, concrete and any additional loads such as pumps, workers, mixers, placing concrete and so on;
- ensure unauthorised persons are prevented from entering the work area (including physical barriers and signs clearly displayed to warn people); and
- ensure the formwork complies with *AS 3610 Formwork for Concrete*.

Planning by Contractors

Each contractor involved in erecting or dismantling formwork has their own duties under the *Work Safety Act*. These duties apply whether they are an employer, self-employed person, corporation, sub-contractor or franchisor. As a person conducting a business or undertaking, each contractor must ensure work safety by managing risk to the extent of their control. This includes, but is not limited to:

- providing and maintaining a safe workplace and safe systems of work;
- providing and maintaining plant that is safe and without risk to the work safety of workers and other people at the business or undertaking;
- ensuring that plant is operated only by workers and other people at the business or undertaking who are qualified to operate the plant;
- ensuring the safe use, handling, storage and transport of substances;
- providing adequate facilities for workers and other people;
- monitoring the work safety of workers, and the conditions at the workplace, to ensure that work-related illness and injury are prevented;
- keeping required information and records on work safety (including incident reports and training records);

- providing appropriate information, instruction, training or supervision to workers and other people to allow work to be carried out safely; and
- consulting workers on matters that directly affect their work safety.

For further detail on these duties, please refer to the ACT Code of Practice for Construction Industry Amenities (2010).

Some contractors may also be a person in control of premises for the purposes of the *Work Safety Act* at specific times. A person is in control of premises in a range of circumstances, including where they have the authority to make decisions about how the premises are managed. This means that they must also manage risks in relation to the premises, such as by ensuring safe entry and exit and maintaining the premises in a way that ensures work safety, to the extent of their control over the premises.

Contractors erecting and dismantling formwork should consult the principal contractor to make sure their work fits together with the overall project plan. Prior to starting work, they should also (at least):

1. identify and assess risks associated with the work;
2. identify the most appropriate ways to prevent injuries (e.g. falls, slips and trips);
3. provide a written safe work method statement (if required);
4. ensure that the sequence of tasks is designed to maintain safety on site;
5. assess manual handling tasks that could cause injury (such as back strain) and provide systems of work that comply with the Work Safety Regulation (for example, selecting the size and weight of materials to be handled and the method of storage/stacking to reduce manual handling);
6. allocate tasks in a way that considers the relevant experience of each worker;
7. minimise the working height for people erecting and dismantling formwork;
8. ensure formwork complies with *AS 3610 Formwork for Concrete*;
9. ensure single props are secured to prevent accidental dislodgement (*AS 3610 Formwork for Concrete*);
10. ensure that components of formwork equipment are not mixed as this may be unsafe and lead to collapse of the formwork (such as mixing pins and braces);
11. ensure all formwork materials (such as joists, bearers, plywood, support frames, jacks and U heads) comply with the specification, relevant Codes and standards and are used in accordance with the manufacturer's specifications;
12. ensure the adequacy of formwork for a suspended slab or beam is inspected and certified in writing for compliance with clause 5.3.4 of *AS 3610 Formwork for Concrete* by a formwork engineer prior to placing concrete if required (above);
13. ensure stripping of formwork is undertaken in accordance with clauses 5.3.4 and 2.3 of *AS 3610 Formwork for Concrete* (or as certified by the engineer);
14. ensure formwork is dismantled in a safe manner that is controlled and planned in accordance with *AS 3610 Formwork for Concrete*. It should generally be a reverse of the erection procedure, follow any safe work method statement and site specific instructions. Drop stripping is unsafe and should not be carried out;
15. ensure partially erected or dismantled formwork are secured during high winds;
16. ensure safe access is provided to and from the site including each area of work. The position of frames should be planned to ensure safe access (such as by people walking between frames);
17. ensure electrical safety, including systems of work for the safe use of equipment;

18. ensure that all workers are provided with appropriate training and instruction (this should cover any safe work method statement);
19. ensure compliance with noise provisions in the Work Safety Regulation; and
20. ensure that all areas are kept free of projecting nails. All materials should be free of projecting nails. All nails should be removed from formwork material during dismantling. High tensile nails (such as explosive power tool nails) should be removed with an appropriate tool to prevent nails becoming projectiles.

Who is responsible on site?

Where multiple contractors are on site over a period of time, working together on a project, they will each have duties under the *Work Safety Act* to the extent of their control. Their duties are not limited because someone else has the same or overlapping duties. Each person with a duty must ensure that they have complied with the law and should consult with other duty holders to ensure that action is being taken.

Risk assessment and control

In addition to any other duty, a hazard identification and risk assessment should be carried out at the planning and preparation stage by the contractor doing the work in consultation with the principal contractor, to determine if people are at risk. Control measures, such as safe systems of work, must be put in place to control identified risks. The process of risk assessment and control is made up of the following steps:

1. identify the hazards;
2. assess the risk(s) arising from the hazards;
3. use appropriate control measures to eliminate or reduce the risk; and
4. monitor and review the control measures to ensure continual safety.

Hierarchy of control measures

The following hierarchy of control measures is listed in terms of levels. Select from the highest level possible:

Level 1. Eliminate the hazard (for example, discontinue activity or not use the plant).

Level 2. Minimise the risk, by:

- substituting the system of work or plant (with something safer);
- modifying the system of work or plant (to make it safer);
- isolating the hazard (e.g. introduce restricted work area);
introducing engineering controls (e.g. guarding, fencing, safety screens, or intermediate working decks).

Level 3. Other minimising controls:

- adopting administrative controls and safe work practices (e.g. specific training and work instructions);
- using personal protective equipment (e.g. safety lines, eye protection, helmets).

The control measures at Level 1 give the best result and should be adopted. The measures at the lower levels are less effective and they require more frequent reviews of hazards and systems of work. In most situations a combination of control measures may need to be used. However, the control measures recommended by the contractor doing the work should be considered by the principal contractor as part of any Safety Management Plan. Any new control measures should be evaluated to ensure that they are effective, safe and that new hazards are not created.

See *Appendix B* for a sample risk assessment checklist.

Preparation

When preparing for work to start, the principal contractor and the contractor doing the work should ensure that the site is safe. They should also check to ensure that all controls identified by their risk assessments have been put in place and that no new hazards exist. This process should be governed by any Safety Management Plan.

Preparation should also include at least the following:

- an assessment of climatic/environmental conditions including lighting levels;
- assessing safe access to and exit from the site and movement within the site;
- personal protective equipment on site (e.g. safety harnesses, lanyards, safety helmets, eye protection etc.);
- specific instructions for workers;
- any formwork drawings are certified by a formwork engineer if required;
- plant and tackle required for lifting materials is available and suitable;
- use of residual current devices (safety switches) to protect users of portable electric powered tools; and
- emergency and rescue procedures in case of an accident, injury or emergency (including to rescue people from safety harnesses after an arrested fall).

4. Work systems and control measures

The principal contractor and all subcontractors must ensure work safety by managing risk because they are all persons conducting a business or undertaking under the *Work Safety Act*. This means, in part, that they must provide and maintain a safe workplace and safe systems of work, to the extent of their control.

Control measures to prevent persons working at heights from falling should be provided and maintained as part of a safe system of work. The system of work and other control measures selected are usually determined by individual job factors (in consultation with workers and other duty holders) including factors identified in the risk assessment process. No matter what the height, or the extent of possible injuries, fall protection must be provided if a worker could fall from where they are working.

Prevention of falls

Each contractor on site must ensure work safety by managing the risk under the *Work Safety Act*. This duty includes, but is not limited to, providing and maintaining a safe workplace and safe systems of work, to the extent of their control. Control measures to

prevent persons working at heights from falling should be provided and maintained as part of a safe system of work.

If a contractor is going to erect or dismantle a formwork deck and supports they should first consider whether it is possible to eliminate the risk of a fall by undertaking all or part of the work on the ground. For example, it may be possible to use prefabricated roofs or wall frames, or, to use pre-cast or tilt up construction methods.

Risk controls should be implemented if a person is exposed to a risk of falling. A risk assessment must be conducted for all work at height. It is important that the person carrying out the risk assessment has the necessary information, knowledge and experience of the work environment and process to assess the risks competently.

Following a risk assessment, control measures must be implemented to address each risk that is identified. These control measures might include fencing, handrails, safety screens, scaffolding, guardrails (including mid rail and toeboards or equivalent), safety nets, elevating work platforms, fall arrest systems (such as nets) or a combination of these measures. In deciding what controls to use, take into account:

1. factors that increase the risk of falling (for example, a slippery surface which may cause slips and falls); or
2. if it is a hazardous situation, such as where the surface condition onto which a person may fall would cause serious injuries (for example, falling on to reinforcing steel starter bars or building materials).

Control measures that provide the highest level of protection, such as those that prevent falls, should be used in preference to those providing a lower level of protection such as fall arrest systems. Fall protection systems should also be provided for workers installing and removing any safeguards.

The following hierarchy of control measures should be used until the risk of fall is minimised as far as reasonably practicable:

1. **Use of passive fall prevention devices.** Passive fall prevention devices include safe (temporary) work platforms (safety mesh, perimeter scaffolding or guardrailing, barriers or perimeter screens)
2. **Use of work positioning systems.** This means equipment designed to allow a worker to work safely in position for the duration of the task at heights. This requires greater competency and supervision of the worker than passive fall prevention devices. This includes use of industrial rope access systems, travel restraint systems.
3. **Use of fall injury minimisation systems.** This means equipment to prevent or reduce the severity of an injury if a fall happens, such as industrial safety nets, catch platforms and fall arrest systems (such as safety harnesses, nets or lazy joists).
4. **Use of ladders and administrative controls.** If ladders are used the contractor should do a risk assessment to make sure the work is done safely. Administrative

controls might be safe work procedures, limiting time spent at height and/or the number of workers who are at height.

It is also a specific offence under Section 74 of the Work Safety Regulation if a person conducting a business or undertaking (principal contractor or sub-contractor) does not provide **adequate fall protection** against a worker falling from a workplace IF:

1. because of the nature of the work, a worker must work in a workplace from which the worker could fall; and
2. if the worker fell, it is likely that the worker would be injured.

For the purposes of erecting or dismantling formwork (and associated equipment) under this Code, contractors should assume that a worker would be injured if they fell from any height.

To provide adequate fall protection a person must:

1. provide a safe means of entry to and exit from the workplace; and
2. provide a **protective barrier** for the workplace;

OR

3. if it is not reasonably practicable to provide a barrier, they must instead provide and maintain a "**safe system of work**".

Protective Barriers

To provide a protective barrier in accordance with the regulation, the contractor should provide edge protection on the exposed edges of all work areas. These include the perimeters of any structure (such as the deck) and any opening (void) in the deck.

When putting in place a protective barrier, the contractor should make sure that the workplace (i.e. deck) is of solid construction – this means that:

- the surface can support people, material and other loads applied; and
- the surface and gradient of the deck is even and readily negotiable for workers

Safe Systems of Work

Providing and maintaining a safe system of work means:

1. providing training on the risks associated with working where the worker is; and
2. providing supervision or assistance for people working there; and
3. Using the hierarchy of control measures so far as is reasonably practicable until the risk of injury from a fall is minimised as far as reasonably practicable (see hierarchy of control measures outlined above).

If a safe working platform (passive fall prevention device) cannot reasonably be provided at the workplace, the contractor should use a safety harness or pole safety static-line if that is practicable (as part of the combination of control measures used to provide a safe system of work).

For more information on protective barriers or safe systems of work refer to the *National Code of Practice for the Prevention of Falls in General Construction* or the *National Code of Practice for the Prevention of Falls in Housing Construction*.

Erecting a formwork deck and supports

Tasks that require particular attention in assessing the risk of falls in a formwork context are those carried out:

- on any structure or plant being constructed or installed, demolished or dismantled, inspected, tested, maintained, repaired or cleaned;
- on a fragile surface (for example cement sheeting roofs, rusty metal roofs, fibreglass sheeting roofs and skylights);
- on a potentially unstable surface (for example areas where there is potential for ground collapse, including poorly backfilled or compacted ground, or unstable areas such as on top of stacks of building materials, timber pallets or bricks);
- using equipment to work at the elevated level (for example when using scaffolds, elevating work platforms (EWPs) or portable ladders);
- on a sloping or slippery surface where it is difficult for people to maintain their balance (for example on glazed tiles);
- near an unprotected open edge (for example near perimeters without guardrails, or incomplete stairwells); and
- near a hole, shaft or pit into which a worker could fall (for example trenches, pile holes or service pits).

Inspection and Maintenance

Under the Work Safety Regulation, each person conducting a business or undertaking (including contractors) must ensure that any safety harness, safety line or anchorage provided or used at the workplace is regularly inspected and is kept in efficient working order. For a permanently fixed anchorage, this means it must be inspected at least every 6 months. The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

Under the Work Safety Regulation, it is also an offence if a person conducting a business or undertaking (including contractors) is aware that the load-bearing capacity of an anchorage at the workplace is impaired and allows that anchorage to be used before it is either repaired or replaced.

Worker Duties

It is an offence under the Work Safety Regulation for a person to intentionally use a safety harness or safety line at a workplace that is not suitable for use, is damaged, or is not effective and maintained in a suitable condition. The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

It is also an offence under the Work Safety Regulation if a person intentionally uses an anchorage at a workplace and the load-bearing capacity of the anchorage is impaired. The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

Manual tasks

Manual tasks require a person to use their musculoskeletal system to perform the activity. For example, lifting or carrying materials on a work site is a manual task.

Legal Duties on Manual Tasks

In addition to the general duty to manage risks to work safety, there are specific duties in the Work Safety Regulation to prevent injuries caused by carrying out manual tasks. Each principal contractor or subcontractor must give each worker carrying out manual tasks at the workplace information, instruction, training and supervision on:

- safe methods of carrying out the task;
- using safe systems of work; and
- ways that the worker may eliminate or minimise the risk of musculoskeletal disorders.

The contractor must do each of the above before the task is carried out, if any part of the work changes, and, while the work is being done if doing so is reasonably necessary to ensure work safety. Information given to the worker must include any new information that affects the task in that workplace, or any plant, substance, structure or system of work used for the task, as it is available. The information must be given in a way that takes into account the worker's needs (for example, if their first language is not English).

The maximum penalty for failing to comply with this duty is \$2200 for an individual or \$11,000 for a corporation.

It is likely that a principal contractor will be a person in control of premises, plant or system at a workplace while formwork is being erected or dismantled. Another person may also be in control of plant or a system as well (such as the formwork contractor). If you have the authority to make decisions about the management of the premises, or, about the plant/system or its operation on site, you are definitely a person in control under the Work Safety Regulation.

If a person has control of premises, plant or system they must give appropriate information, instruction, training and supervision to a worker who carries out a manual task at the premises or in relation to the plant or system to allow the worker to carry out the task safely and, to participate in managing risk in relation to the task.

This must include

- safe methods of carrying out the task;
- use of safe systems of work; and
- ways that the worker may eliminate or minimise the risk of musculoskeletal disorders.

The contractor must do so before the task is carried out, if any part of the work changes, and, while the work is being done if doing so is reasonably necessary to ensure work safety. Information given to the worker must include any new information that affects the task in that workplace, or any plant, substance, structure or system of work used for the task, as it is available. The information must be given in a way that takes into account the worker's needs (for example, if their first language is not English).

The maximum penalty for failing to comply with this duty is \$2200 for an individual or \$11,000 for a corporation.

Manual tasks during formwork

The following practical guidance outlines some ways in which manual handling risks can be controlled in formwork erection and dismantling. However, employers are still required to undertake their own risk assessments and implement control measures. This should also be included in any safe work method statement that is required.

In relation to manual tasks, each person required to ensure work safety by managing risk on site should, to the extent of their control:

- design or re design the manual task to eliminate or control the risk factor; and
- providing appropriate training to workers in safe handling techniques. This training should also include the prevention of manual handling injuries by an approach based on a hazard identification, risk assessment and control through job and task design.

Where re-design is not practicable, or when considering short term/temporary measures, the person should consider the following controls:

- provide mechanical aids and/or personal protective equipment. Manual handling risks may be controlled by using powered mechanical equipment to lift and move formwork frames and other materials such as floor centre spacings during erection and dismantling of formwork. Lifting equipment could include cranes, forklifts, electric pallet trucks and stackers. Mechanised systems such as climbing column formwork and table forms also eliminate manual handling;
- arrange for team lifting in order to reduce the risk. Team lifting (sharing the load between two or more workers) should be used for loading, unloading, stacking and moving frames and other large items where it is impractical to use mechanical assistance;
- ensure workers receive appropriate training in methods of manual handling involving team lifting procedures, correct use of the mechanical aids and PPE. Where the nature of the work activities or manual handling tasks are constantly

changing, the risk assessment and control process and training provided should be on an ongoing basis;

- weights that are manually handled should be minimised. Caution is particularly advised where loads are above 16-20kg. In general, workers should not be required to lift, lower or carry loads above 55 kg, unless mechanical assistance and/or team lifting arrangements are provided to lower the risk of injury. Where manual handling involves repetitive bending, twisting, over reaching, work overhead or where persons have pre existing injuries these loads should be further decreased. Loads may be reduced by substituting lighter weight components where possible (for example, using smaller sheet sizes of plywood and shorter bearers, using aluminium beams in place of steel or timber). 1800 mm x 1200 mm ply sheets could be used in preference to larger sizes and bearer lengths should be limited to 4.8 m where possible;
- the sequence of erection and frame components used should ensure that components can be removed separately so as to minimise weights that require manual handling. A combination of frame heights should be used to make up the height required instead of using telescoping extensions. Frames with telescoping extensions and screw jacks attached should not be manually lifted by one worker. Information about weights of framing components should be made available to workers;
- frames should be selected in consultation with workers at the planning stage. This should take into account the methods of manual lifting and carrying that must be used, the weight and balance of the frame and the way in which the weight of the frame is to be supported;
- frames and materials should be delivered as near to the work location as possible to eliminate double handling;
- materials should be stored on racks or other supports at a height of at least 600 mm where possible so that manual lifting can be done without excessive bending. Frames and sheets of ply that are carried in an upright position should be stored upright in a rack and secured in place.
- the overhang of planks should be limited to 150 mm beyond the frames so that they do not obstruct frames being lifted which can cause excessive bending. The overhang may be used to temporarily support the frame before it is placed in its final location. Cleats can be used to prevent planks from slipping off the frames.
- the rotation of work duties should be considered in consultation with workers so that workers are not subjected to the same task for the whole shift.

For further detail on these duties, please refer to the *National Standard for Manual Tasks* and *National Code of Practice for the Prevention of Musculoskeletal Disorders from performing Manual Tasks at Work*.

Access to Sites

The Work Safety Regulation requires each person conducting a business or undertaking at a workplace to ensure that anyone coming into or leaving the workplace is able to enter, exit and move safely about the workplace, and, is able to leave the workplace in an emergency. This duty also applies to a person in control of premises (such as the principal contractor) – each person with the duty must ensure the law is complied with to the extent of their control.

The maximum penalty for failing to do so in each case is \$3300 for an individual or \$16,500 for a corporation.

Housekeeping

On work sites where formwork is being erected or dismantled this means that all areas of access should be kept clear and free of obstructions. In particular:

- all materials should be properly stored to reduce trip and slip hazards, including those during dismantling ensuring all areas are kept free of projecting nails.
- all formwork materials should be free of projecting nails. All nails should be removed from the formwork material during the process of dismantling. High tensile nails, (for example, explosive power tool nails), should be removed with an appropriate tool to prevent nails becoming projectiles when being removed.
- all plywood sheet offcuts and stripped plywood pieces should be stored to prevent sheeting becoming a trip/slip hazard (such as in a suitable frame).

Stairways and Ladders

In considering how to ensure safe access the contractor should take into account the number of persons using each access point and any tools and equipment people may be required to carry to and from their work. Safe temporary access stairways and/or gangways with handrails should be provided where that is practicable.

When ladders are provided or used for access, each person at the workplace who conducts a business or undertaking must ensure that the ladder is of sound construction and is kept in a safe condition. The maximum penalty for failing to comply with this duty is \$2200 for an individual or \$11,000 for a corporation.

In addition, all ladders used under this Code of Practice:

- should be secured against displacement;
- should have non slip feet;
- be used in a manner so that a safe and adequately sized landing place is provided for stepping off the ladder; and
- the stiles of the ladder must extend at least one metre above that landing place.

Metal or wire reinforced ladders should not be used where there is a risk of contact with electrical conductor wires (powerlines) or of electrocution. Non-conducting

ladders should be used, or, a clearance of at least four metres from conductors should be maintained at all times.

The Work Safety Regulation also places a key duty on each worker on site – if any person intentionally uses a ladder in a way that creates a risk to the safety of any person (themselves or someone else) they have committed an offence. The maximum penalty for failing to comply with this duty is \$2200 for an individual or \$11,000 for a corporation.

If a portable single ladder or extension ladder is used on site it must be used so that:

- the horizontal distance between the ladder's top support point and its foot is less than or equal to $\frac{1}{4}$ of its supported length;
- the ladder is placed on a firm footing; and
- the ladder is secured to prevent slipping and sideways movement.

The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

If a ladder is used at a workplace to support planks for a working platform it must be a trestle ladder. Even where a trestle ladder is used for support, this type of working platform can only be used where the total weight on the ladder is less than 2.2kN (224kg), including a single point limit of 1kN (102kg). The maximum penalty for failing to comply with either of these requirements is \$3300 for an individual or \$16,500 for a corporation.

For further detail on ladders please refer to the *National Standard for Construction Work* and relevant *National Code of Practice*.

Scaffolding

Scaffolding should be erected in accordance with AS/ NZS 1576 *Scaffolding* which recommends that temporary working platforms should be at least 450 mm wide (roughly two planks). Cleats can be used to prevent planks from slipping off the frames. A risk control system should also be provided for persons exposed to a risk of falling.

For further detail on scaffolding please refer to the *National Standard for Construction Work* and relevant *National Code of Practice*.

Lighting

The Work Safety Regulation requires adequate lighting to be provided at a workplace by a person conducting a business or undertaking at that workplace. What is adequate depends on the tasks being performed by workers at the time. The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

Lighting must be sufficient to:

- allow workers to work safely;
- not create excessive glare or reflection;
- allow people who are not workers to move safely within the workplace; and

- facilitate safe entry to, and exit from, the workplace.

The maximum penalty for failing to comply with this duty is \$2200 for an individual or \$11,000 for a corporation.

Preventing falling objects

Falling objects cause a large number of serious injuries on sites. Some solutions are:

- perimeter edge protection should be constructed to effectively prevent any materials, tools or objects falling onto persons below;
- lanyards on tools should be used where there is a risk of the tool being dropped and striking a person below;
- loose formwork materials such as plywood and plant should be secured to prevent accidental displacement, especially during high winds;
- props which are not braced or tied should be secured or removed to prevent accidental dislodgement; and
- a physical barrier such as a temporary kerb should be provided to prevent mobile plant (such as a pedestrian operated fork lift truck) from falling off the edge of building or displacing formwork.

Moving loads and materials

Systems of work must ensure the safety of persons in the vicinity of materials or loads being moved. For example:

- tag lines should be used to guide and control suspended loads;
- a person in control of loads suspended from a crane must hold a high risk work licence for dogging or the equivalent certificate of competency;
- areas in the vicinity of materials or loads being moved should be clear of persons when moving long materials such as joists, bearers, planks and frames to prevent striking persons nearby; and
- areas beneath suspended loads should be clear of persons.

Using dangerous substances

Where hazardous substances or materials are used at the workplace, each contractor doing the work and the principal contractor should ensure compliance with the *Dangerous Substances Act 2004* to the extent of their control so that formwork operations do not become a risk to health. This includes providing training in the safe labelling, handling and use of each substance, and, providing the manufacturer's Material Data Safety Sheet which sets out information about the hazards involved in using the substance and how to use the substance safely (if available).

Managing noise

Workers should not be exposed to noise above the exposure standard in the Work Safety Regulation. This is:

- an 8-hour equivalent continuous A-weighted sound pressure level, $L_{Aeq,8h}$ of 85dB (A) referenced to 20 μ Pa; and
- a C-weighted peak sound pressure level, $L_{C,peak}$ of 140dB (C) referenced to 20 μ Pa.

The risk of causing permanent hearing damage is related to both loudness of the noise and the length of exposure. For example two minutes working in noise levels of 114 decibels dB(A) may cause the same amount of damage as eight hours working in 85 dB(A). A noise assessment should be conducted to determine the level of noise that employees are exposed to.

The Work Safety Regulation requires each contractor on site to properly maintain noise control measures at the workplace and:

- give workers at the workplace information and training about noise control measures in accordance with *AS/NZS 1269*; and
- ensure that any personal hearing protectors given to a worker are used and maintained in accordance with *AS/NZS 1269*.

The maximum penalty for failing to do so is \$3300 for an individual or \$16,500 for a corporation.

If the contractor must take action to reduce noise levels on site, the contractor must do each of the following in order, so far as reasonably practicable, until the noise level is at or below the exposure standard:

1. Implement engineering controls;
2. Implement administrative controls;
3. Give the worker/s personal hearing protectors. These must meet the requirements of *AS/NZS 1270*, and, have been selected according to the procedures stated in *AS/NZS 1269.3*.

If noise levels at the workplace exceed the exposure standard and the person conducting a business or undertaking at that workplace (contractor) does not take the actions outlined above they will be in breach of the Work Safety Regulation. The maximum penalty is \$2200 for an individual or \$11,000 for a corporation.

The Work Safety Regulation also places a key duty on each worker on site – if noise control measures are taken by the contractor and the worker

- intentionally does not comply with those measures, so far as reasonably practicable; or
- is given personal hearing protectors and is given information and training about them in accordance with *AS/NZS 1269*, and does not use the protectors, so far as reasonably practicable;

the worker will also be in breach of the Work Safety Regulation. The maximum penalty for each of these offences is \$2200 for an individual or \$11,000 for a corporation.

5. Personal protective equipment (PPE)

Providing PPE

Under the Work Safety Regulation all persons that provide PPE as part of their duty to manage risk must ensure, to the extent of their control, that:

- the PPE is adequate for the person it is provided to;
- the PPE minimises the risk for the person;
- the person is told of any limitations of the PPE;
- the person is given the instruction and training necessary to ensure the PPE minimises the risk for that person;
- the PPE is properly maintained, and, repaired or replaced as necessary to minimise the risk for the person using it; and
- the PPE is kept in a clean and hygienic condition.

The maximum penalty for failing to do so is \$2200 for an individual or \$11,000 for a corporation. The same penalties apply if PPE is not stored at an accessible place at the workplace, or, if there are areas where PPE must be used but the areas are not clearly identified.

The Work Safety Regulation also sets out specific situations where PPE must be provided. This is where a person should be highly visible because of the nature of the workplace (such as due to poor lighting or proximity to vehicles or mobile plant), and, where it is reasonably foreseeable that a person could, while at the workplace

- be struck by an object or other material capable of causing injury;
- be injured by coming into contact with a sharp object;
- be subject to a risk to health or safety because of exposure to a substance, agent, contaminant, radiation or extreme of temperature; or
- be exposed to a risk of injury to eyesight or to hearing capacity; or

Where any one of these circumstances applies, all persons conducting a business or undertaking on site (contractors) must ensure that adequate PPE is provided to each person at the workplace. It is also an offence if use of the PPE provided may affect a person's ability to communicate and the contractor does not take appropriate steps to ensure that this does not create a risk to the health or safety of that worker or anyone else. The maximum penalty for failing to comply with either requirement is \$3300 for an individual or \$16,500 for a corporation.

It is likely that a principal contractor will be a person in control of a workplace while formwork is being erected or dismantled, to some extent. Other persons may also be in control of the site. A person in control of premises commits an offence if:

1. adequate personal protective and safety equipment is not required in the specific circumstances above but it is not provided to anyone at the premises; or

2. use of the PPE provided may affect a person's ability to communicate and the person in control does not take appropriate steps to ensure that this does not create a risk to the health or safety of that worker or anyone else.

These duties overlap with the duty of contractors on site, so that the principal contractor (or other person with this duty) must ensure that these duties are met to the extent of their control of the premises. This is a question of fact based on actual control of the site at a specific time. The maximum penalty for failing to comply with either of the above requirements is \$3300 for an individual or \$16,500 for a corporation.

PPE and Formwork

Before erecting or dismantling any formwork, contractors should assess the risks likely to affect the health and safety of the workers and him/herself, as identified by the risk assessment procedure, and must provide and arrange for the use of appropriate and compatible PPE. A fall arrest system is a form of PPE.

The following PPE should be provided where required by the Work Safety Regulation (because it is mandatory or because a risk assessment indicates it is needed).

Safety helmets

The use of safety helmets may prevent or lessen a head injury from falling objects or a person hitting their head against something. Where there is a likelihood of persons being injured by falling objects and overhead protection is not provided, persons should be provided with (and use) a safety helmet. Safety helmets should also be provided and used where a person may strike their head against a fixed or protruding object or where there is a risk of accidental head contact with electrical hazards.

Eye protection

Where workers are carrying out cutting, grinding, chipping or welding of concrete or metals they should be provided with (and use) eye protection complying with *AS 1337* Eye protectors for Industrial Applications to reduce the risk of eye injury. Eye protection complying with *AS 1337* should also be provided (and used) where persons carry out other work, such as carpentry, where there is a risk of eye injury.

There should be sufficient supervision and monitoring conducted to ensure that employees are provided with (and use) the eye protection.

Safety gloves and footwear

Safety gloves and footwear should be provided when handling materials such as timbers, scaffolding components and steel frames to reduce the risk of injury.

Protection from sun

Workers should be protected from sunlight/UV radiation by using a sunscreen with an SPF (sun protection factor) rating of at least 15+ and wearing hats, long sleeves and long trousers. If short sleeved shirts and shorts are worn in very hot weather, the exposed parts of the body should be protected by using the appropriate sunscreen.

Persons exposed to reflective surfaces (such as formwork decks) should be protected from the risks of eye damage from the increasing exposure to the sun by UV protection glasses to AS 1337 and AS 1338 as part of personal protective equipment. Even with protection, there should be sufficient supervision and monitoring conducted to ensure that workers do not have extended exposure to strong sunlight and reflection.

Clothing

Clothing should be comfortable in all positions such as standing, bending and crouching and be suitable for the work being done and the weather conditions. Loose clothing or equipment which may snag or create a trip hazard should be avoided where possible.

Workers using PPE

The Work Safety Regulation requires workers that have been provided with PPE at a workplace to use it. If the worker is given the instruction and training necessary to ensure that the PPE minimises risk for them and the worker intentionally does not use the PPE, or, does not use it as instructed, they are in breach of the Regulation. The maximum penalty is \$2200.

It is also an offence if a worker:

- intentionally misuses or damages PPE at the workplace; or
- becomes aware of damage to, a defect in, or a need to clean or sterilise, PPE at their workplace and intentionally does not tell the person conducting the business or undertaking about that damage, defect or need.

The maximum penalty for each of these offences is \$2200.

6. Training and instruction

Under the *Work Safety Act*, each person conducting a business or undertaking (contractor) must provide appropriate information, instruction, training or supervision to workers and other people at the business to allow work to be carried out safely. They must also ensure that plant is operated only by workers or other people who are qualified to do so - this may require a high risk work licence or a certificate of competency in the ACT.

All persons involved in erecting and dismantling of formwork should be trained to follow systems of work and work practices that enable them to perform in a manner that is safe and without risks to health, and must hold an appropriate high risk work licence or certificate of competency (where that is required). Only workers who have received required training and instruction should carry out tasks involved in erecting and dismantling formwork.

The contractor must monitor the systems of work and provide refresher training to ensure that safe systems and work practices are being followed, including the use of PPE. The training provided and instruction given should include at least:

- construction induction training which complies with the requirements of the Work Safety Regulation;

- the work method to be used for erecting and dismantling of formwork and the manual handling of equipment by operators, including control measures based on the risk assessment to prevent injury;
- the correct use, care and storage in accordance with the manufacturer's recommendations (or Australian Standards, where appropriate) of:
 - personal protective equipment
 - tools and equipment to be used
 - individual fall arrest equipment.
- the use of plant and associated equipment including electrical safety and hazardous substances; and
- procedures to be adopted in the event of accident, injury or other emergency.

7. Legal Requirements: the *Work Safety Act 2008*

Work Safety

Every person at a workplace has a duty under the *Work Safety Act 2008*, whether they are a person conducting a business, a worker, or a person in control of premises where work is carried out. While the duties for each person are different, each person must ensure that the way they carry out their work does not interfere with the health, safety or wellbeing of other people at the workplace.

Person conducting a business or undertaking

People conducting a business or undertaking must ensure the health, safety and wellbeing of people in relation to work and to comply with the *Work Safety Act* and Work Safety Regulation to the extent of their control, by managing risk. This duty applies to employers, self employed people, corporations, sub-contractors and franchisors, for example. This includes, but is not limited to:

- providing and maintaining a safe workplace and safe systems of work;
- providing and maintaining plant that is safe and without risk to the work safety of workers and other people at the business or undertaking;
- ensuring that plant is operated only by workers and other people at the business or undertaking who are qualified to operate the plant;
- ensuring the safe use, handling, storage and transport of substances;
- providing adequate facilities for the work safety of workers and other people at the business or undertaking;
- monitoring the work safety of workers at the business or undertaking, and conditions at the workplace, to ensure that work-related illness and injury are prevented;
- keeping required information and records under this Act, including incident reports and training records, in relation to the business or undertaking;
- providing appropriate information, instruction, training or supervision to workers and other people at the business to allow work to be done safely; and
- consulting workers at the business or undertaking on matters that directly affect their work safety; and
- any other duty prescribed by regulation.

Workers

Workers must not expose themselves or other people who may be affected by their work, to work safety risks because of that work. This includes, but is not limited to, cooperating with, and complying with instructions from, the person they work for, and person in control of their workplace, to allow that person to comply with their duties under the *Work Safety Act*. They must also use equipment supplied for work safety properly, and, report any risk illness or injury connected with work of which they are aware.

Manufacturers

A person in control of manufacture must ensure work safety in relation to the manufacture of the plant or structure by managing risk. This includes, but is not limited to:

- manufacturing it to be safe and without risk to work safety when used in the way it is intended;
- carrying out research, testing and examination to identify and eliminate, or minimise, any risk to work safety by use of it;
- giving, to each person to whom they provide it, information on its intended use, results of any research, testing and examination, the conditions needed for it to be safely used; and
- giving the same information, on request, to any person who uses or will use, it.

Importers and suppliers

A person in control of the import or supply of plant, or of a structure, must ensure work safety in relation to the plant or structure by managing risk. This includes, but is not limited to:

- supplying the thing safely and without risk to work safety when used in the way it is intended;
- if importing the thing to supply it, ensuring the designer and manufacturer have complied with their duties under the *Work Safety Act*; and
- giving to a person intending to use the thing, or whose work safety may be affected by the use of the thing, information about its intended use, the conditions necessary for it to be used safely, and, about how to maintain it to ensure it remains safe to use.

Designers

A person in control of the design of plant or a structure must ensure work safety in relation to the design of that plant or structure by managing risk.

Persons in control of plant or system

A person in control of plant or system (or its operation) must ensure work safety in relation to that plant or system by managing risk. This includes, but is not limited to, maintaining the plant or system in a way that is consistent with work safety.

Persons in control of premises

A person in control of premises has a duty to ensure work safety in relation to the premises by managing risk. This includes, but is not limited to,

- maintaining the premises in a way that is consistent with work safety; and
- providing safe entry to, and exit from, the premises.

Some relevant laws and standards

The following Acts and Regulations apply to formwork:

- *Work Safety Act 2008*;
- *Work Safety Regulation 2009*;
- *Dangerous Substances Act 2004*; and
- *Dangerous Substances (General) Regulation 2004*.

The following Australian Standards are also relevant:

- AS 3610 *Formwork for Concrete*;
- AS/NZ 1576 *Scaffolding*;
- AS/NZS 1576 *Scaffolding*;
- AS 1657 *Fixed Platforms, Walkways, Stairways & Ladders*;
- AS 1337 *Eye protectors for Industrial Applications*;
- AS 1891 *Industrial Safety Belts and Harnesses*;
- AS/NZ 3000 *Australian/New Zealand Standard for Wiring Rules*;
- AS/NZ3012 *Electrical installations—Construction and demolition sites*; and
- AS/NZ3760 *In-Service Safety Inspection and Testing of Electrical Equipment*.

The above documents have been mentioned in this Code to provide assistance in directing readers to other legislative requirements which may have some application. The list is not exhaustive and is included in this Code by way of assistance only.

Definitions

These definitions are for the purposes of this Code:

Construction work means any work carried out on or near a construction site in relation to the construction of a structure, including:

- demolishing or dismantling all or part of the structure and removing from the site anything resulting from the demolition or dismantlement;
- assembling prefabricated elements to form the structure or disassembling the prefabricated elements that formed the structure;
- excavation, landscaping, preparatory work or site preparation on site;
- work carried out under water, including on a buoy, an obstruction to navigation, a raft, ship or wreck;

but not including exploring for, or extracting, minerals or preparatory work in relation to the extraction carried out where exploration or extraction is carried out.

Construction site means a workplace at which construction work is carried out.

Designer means a person in control of:

- the design of plant or a structure that is used, is to be used or could reasonably be expected to be used, at work or at a workplace; or
- the design of a structure that is, is to be or could reasonably be expected to be, a workplace.

Formwork means the surface, support and framing used to define the shape of concrete until it is self-supporting.

Note: This term includes the forms on which the concrete is poured, the supports which withstand the loads imposed by the forms and the concrete, the bracing which may be added to ensure stability, and the footings. When complete the formwork can be known as the formwork assembly. Supports and bracing mentioned above are sometimes known as falsework.

Formwork contractor (often referred to as a subcontractor) means the person responsible for the erecting and dismantling the formwork and associated equipment.

Formwork engineer means a person qualified for corporate membership of the Institution of Engineers, Australia, having not less than 12 months' experience in the design of formwork and who is responsible for the coordination of the formwork design, erection and dismantling for a particular job.

Importer or Supplier means a person in control of:

- the import or supply of plant, or a structure, that is used, is to be used or could reasonably be expected to be used, at work or at a workplace; or
- the import or supply of a structure that is, is to be or could reasonably be expected to be, a workplace

but does not include a person who:

- carries on the business of financing the buying or use of things
- by other people;
- has, in the business, acquired an interest in the thing only to
- finance its acquisition by someone else from another person or
- its provision to someone else by another person;
- has not taken possession of the thing, or has taken possession
- of the thing only to pass possession to the other person; and
- supplies the thing to the other person.

For the purposes of this definition, a person also supplies a structure when they have ownership or control of the structure.

A person **manages risk** by taking reasonably practicable steps:

- to identify any risk that might be associated with the duty;
- to eliminate any risk that might result if the duty is not exercised; and
- if it is not reasonably practicable to eliminate each risk that might result if the duty is not exercised—to minimise each risk;

and by informing anyone else who has the duty about the possible risks.

If a person is required to **minimise a risk**, they must do each of the following that is available, in the following order, until the risk is reduced as far as is reasonably practicable:

- substitute the thing giving rise to the risk with something that gives rise to a lesser risk;
- isolate the thing giving rise to the risk from anyone otherwise put at risk;
- minimise the risk by engineering means;
- minimise the risk by administrative means (such as safe working practices, training, instruction or information); and
- ensure personal protective and safety equipment is used.

To work out what are **reasonably practicable steps** to eliminate or minimise a risk, each of the following must be considered:

- the seriousness of the risk;
- the availability and suitability of ways to eliminate or minimise the risk;
- what the duty holder knows or ought reasonably to know about the hazard giving rise to the risk, the risk itself, and, ways of eliminating or minimising the risk;
- the cost of eliminating or minimising the risk (including burdens and disadvantages such as time spent and inconvenience); and
- anything else required in the Work Safety Regulation.

Manufacturer means a person in control of:

- the manufacture of plant or a structure that is used, is to be used or could reasonably be expected to be used, at work or at a workplace; or

- the manufacture of a structure that is, is to be or could reasonably be expected to be, a workplace.

Person in control of plant or a system means a person who is in control of plant or a system or the operation of the plant or system. This includes anyone with authority to make decisions about the plant or system, or its operation.

Principal contractor (often referred to as the head or main contractor) means the person with the overall responsibility for the construction work being undertaken.

Self-employed person means an individual who works for gain or reward otherwise than under a contract of employment or apprenticeship, whether or not he or she engages other workers.

Worker means an individual who carries out work in relation to a business or undertaking, whether for reward or otherwise, under an arrangement with the person conducting the business or undertaking. This includes employees, apprentices, independent contractors, outworkers, work experience students and volunteers.

Safe work method statement means a (written) statement that:

- identifies the work activity assessed as having a safety risk or risks;
- states the safety risk or risks associated with that activity;
- describes the control measures that will be applied to the activity;
- describes how safety measures will be implemented to do the work safely; and
- includes a description of the equipment used in the work, the qualifications of involved workers and the training required to do the work safely.

Safety management plan means a site-specific plan to ensure work safety that includes:

- a statement of responsibilities, listing the names, positions and responsibilities of all persons who have specific responsibilities for work safety on site;
- detailed arrangements for ensuring compliance with induction training requirements;
- detailed arrangements for the co-ordination of work safety issues for workers undertaking construction work on site;
- detailed arrangements for managing incidents when they occur, including the identities of and contact details of persons who will be available to prevent, prepare for, respond to and manage recovery from incidents;
- any site safety rules, with detailed arrangements for ensuring all persons at the site (such as workers, contractors, suppliers or visitors, are told of the rules;
- the hazard identification, risk assessment and risk control information for all work activities assessed as having safety risks; and
- all required safe work method statements.

Work Safety means the health, safety and wellbeing of people in relation to work.

Further information

ACT Codes of Practice:

- ACT Code of Practice for Construction Industry Amenities;
- ACT Code of Practice for First Aid in the Workplace;
- ACT Code of Practice for Safe Demolition Work; and
- ACT Code of Practice for Steel Construction.

National Standards adopted in the ACT:

- National Standard for Plant;
- National Code of Practice for Noise Management and Protection of Hearing at Work;
- National Code of Practice for the Prevention of Falls in General Construction;
- National Code of Practice for the Prevention of Falls in Housing Construction;
- National Code of Practice for the Prevention of Musculoskeletal Disorders from performing Manual Tasks at Work;
- National Standard for Construction Work;
- National Standard for Manual Tasks; and
- National Standard for Occupational Noise.

Standards Australia publications:

- AS 1337 *Eye protectors for Industrial Applications;*
- AS/NZS 1338.2:1992 *Filters for protection against ultraviolet radiation;*
- AS/NZS 1576 *Scaffolding;*
- AS 1657 *Fixed Platforms, Walkways, Stairways and Ladders;*
- AS 1891 *Industrial Safety Belts and Harnesses;*
- AS 2626 *Industrial Safety Belts and Harnesses Selection, Use and Maintenance;*
- AS 3610 *Formwork for Concrete;*
- AS/NZS 4576 *Guidelines for Scaffolding;*
- BS EN 1263-1:2002 *Safety nets. Safety Requirements, test methods;*
- AS/NZ 3000 *Australian/New Zealand Standard for Wiring Rules;*
- AS/NZ3012 *Electrical installations—Construction and demolition sites; and*
- AS/NZ3760 *In-Service Safety Inspection and Testing of Electrical Equipment.*

Where to Go for More Information

For further information about managing risks to work safety or about the *Work Safety Act 2008* please contact the Office of the ACT Work Safety Commissioner:

Phone 02 6205 0333

Email worksafety@act.gov.au

Web www.worksafety.act.gov.au

Further advice can also be sought from the Office of Regulatory Services, WorkSafe ACT (www.ors.act.gov.au).

Copies of the *Work Safety Act 2008* and Work Safety Regulation 2009 are available for viewing through the Office of the Work Safety Commissioner, the Office of Regulatory Services (ACT) and online at <http://www.legislation.act.gov.au>.

How Work Safety Laws Operate in the ACT

The *Work Safety Act 2008* sets out the overall framework for work safety in the ACT and a range of duties designed to ensure work safety, health and wellbeing. The Act is supported by Regulations, Codes of Practice, and a variety of guidance material.

Work Safety Regulations

The Work Safety Regulation spells out minimum standards for the same duty holders to ensure work safety in specific hazards and risks (such as construction, plant and the performance of manual tasks). Regulations have the force of law and must be adhered to. Failure to comply may result in a criminal penalty or on-the-spot fine.

Codes of Practice

Codes of Practice provide practical guidance on how to comply with legal duties. Codes have formal status, allowing courts to consider whether a Code has been complied with in deciding whether legal duties have been met. The steps set out in a Code are not compulsory but you should follow the Code or an equivalent alternative.

Other Guidance

Other guides have no formal legal status and do not establish compulsory duties – they are designed to assist people to comply with the Act and Regulations. They can sometimes be used in court as evidence.

National Standards and Australian Standards

National Standards and National Codes of Practice are developed by Safe Work Australia (formerly the Australian Safety and Compensation Council or NOHSC). These, as well as ACT developed Codes of Practice, are often declared to apply in the ACT - they are then model documents and legally enforceable. Australian Standards are separate, technical guides which may also assist a person in complying with a particular work safety duty.