



Building and construction

In order to understand the workplace health and safety requirements for building and construction, and your obligations under the law you must consider and understand relevant legislation and codes of practice.

What law applies

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Housekeeping, equipment, common plant

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Workplace health and safety taskforce

Terms of reference and final report of the Building and Construction Industry (Workplace Health and Safety Taskforce 1999)

What law applies

In order to understand the workplace health and safety requirements for construction work, and your obligations under the law you must consider and understand relevant legislation and codes of practice.

General health and safety obligations

To understand your obligations and safety requirements you must be familiar with the:

- *Workplace Health and Safety Act 1995* which imposes obligations on people at workplaces to ensure workplace health and safety.

The *Workplace Health and Safety Act 1995* also helps you to meet your workplace health and safety obligations through the:

- *Workplace Health and Safety Regulation 1997* which describes what must be done to prevent or control certain hazards which cause injury, illness or death
- codes of practice (or prior to 18 November 2004, advisory standards) which are designed to give practical advice about ways to manage exposure to risks common to industry.

Every Queensland employer must have **workers' compensation** insurance. Most employers insure with WorkCover Queensland, while a small number of large organisations have their own insurance. This insurance coverage ensures that employees injured at work receive financial support.

What you must do

If the *Workplace Health and Safety Regulation 1997* describes how to prevent or minimise a risk at your workplace you **must** do what the regulation says.

If there is a code of practice (or prior to 18 November 2004, an advisory standard) that describes how to prevent or minimise a risk at your workplace you **must** do what the code says or adopt and follow another way that gives the same level of protection against the risk.

If there is no regulation or code of practice about a risk at your workplace you **must** choose an appropriate way to manage exposure to the risk. People must, where there is no regulation or code of practice about a risk, take reasonable precautions and exercise proper diligence against the risk.

See the *Risk Management Advisory Standard 2000* (now known as a Code of Practice) for further information.

Specific regulations for construction

Part 17 of the *Workplace Health and Safety Regulation 1997* specifies particular requirements for construction work.

The regulations cover:

- principal contractor construction safety plans
- work method statements for high-risk construction activities including demolition work and asbestos removal
- general and site-specific induction
- housekeeping practices
- safety of plant provided for common use
- excavations (including trenches)
- working at heights (including work on roofs, from ladders and trestle ladder platforms, and work to erect or dismantle scaffolding)
- protecting people from falling objects
- workplace amenities.

On-the-spot fines are attached to the regulations. The amount of fines will reflect the severity of the breach.

For further information refer to the following:

- construction safety induction (30215QLD)
- asbestos removal
- *Guide to safety in the civil construction industry*
- *Concrete cutting and drilling guide*
- *Concrete Pumping Code of Practice 2005*
- Construction diving
- scaffolding, dogging and rigging licences
- cranes and hoists licences
- prescribed occupations
- *Formwork Code of Practice 2006*
- *Scaffolding Advisory Standard 2004* (now known as a Code of Practice)
- *Steel Construction Advisory Standard 2004* (now known as a Code of Practice)
- *Tilt-up and Pre-cast Construction Code of Practice 2003*.

Please note, from 18 November 2004 the *Workplace Health and Safety Act 1995* was amended so that:

- all advisory standards that were in force on that day were continued as codes of practice and now expire 10 years after their commencement; and
- all existing industry codes of practice that were in force on that day now expire 10 years after their commencement.

What is construction work?

Factsheets: understanding the new definition of construction work

Changes to the law effective from 1 January 2006 include changes to the definition of construction work:

New definition of construction work

Example of how to apply new definition for construction, repair of road or upgrade/change to an existing road

Example of how to apply new definition for construction of a new building or refurbishment of an existing building, with fit-out

The building and construction industry is diverse with many high risk activities. Contractors, subcontractors and their workers face risks from hazards that must be managed to prevent deaths, injuries and illness.

Construction work

Construction work is work on a structure or part of a structure including its:

- erection, construction, extension or structural alteration
- alteration, conversion, fitting-out, renovation, repair, refurbishment, commissioning
- disassembling or decommissioning.

Construction work also includes:

- any work connected with site preparation
- any excavation or landscaping work done in connection with construction work
- assembling or installing prefabricated components for use in construction work
- taking apart a structure or part of a structure into its prefabricated components
- demolition work or asbestos removal work (prescribed activities).

What is a structure?

A **structure** includes all types of buildings, walls, or other steel or reinforced concrete construction.

Structures can also be:

- masts, towers, pylons, structural cables or telecommunications structures
- infrastructure or other public-use facilities including:

- underground works such as shafts, tunnels, pipes, pipelines, sea defence works, river works, earthworks or other earth retaining construction
- roads, highways, footpaths, driveways,
- railway lines or sidings, tramway lines
- airfields
- docks, harbours
- water storage or supply systems, sewerage or drainage systems
- electricity or gas generation, transmission or distribution facilities, gasholders
- parks or recreation grounds
- production, storage or distribution facilities for heavy industries, for example refineries
- fixed plant, for example boilers, air conditioning units
- ships or submarines
- scaffolds, formwork, falsework, or other construction designed or used to provide support, access or containment during construction work.

What is not construction work?

Constructing or erecting structures which are to be transported to another place is not construction work, for example constructing a manufactured home or prefabricated building.

Appointment of principal contractors

Owners must appoint a principal contractor where:

- demolition work or asbestos removal work (prescribed activities) is to be done, or
- the estimated final price for the construction work is more than \$80 000.

The owner must complete a notice of appointment and give a copy of this to the principal contractor and the nearest Workplace Health and Safety Queensland office at least 10 days before construction work starts.

Construction work ends when possession of the workplace is given to the owner.

Owner builders and own home renovators

An owner-builder who undertakes construction work with an estimated final price of more than \$80 000 may take on a number of roles under the workplace health and safety legislation depending on the extent to which work is contracted out.

These roles could include principal contractor, relevant person or worker. It may be possible for a person to have obligations in more than one role.

An owner-builder will be considered the principal contractor if the owner-builder takes on the role of managing the construction work to the extent that the owner-builder is in control of the building work. In this event, the owner-builder will be bound by the regulations applying to the principal contractor.

Homeowners doing their own renovations do not normally hold obligations under the *Workplace Health and Safety Act 1995* and are therefore, not bound by the construction regulations. However, the regulations and guidance material for the construction industry may help home owners to do their renovations safely.

When doing their own renovations, homeowners should take extra precautions when working around electrical wiring.

Where home owners engage a contractor/s to do construction work the builder and/or contractor is responsible for meeting workplace health and safety requirements.

Homeowners and renovators should be aware of the health and safety issues related to asbestos which may be present in their homes. Two national codes of practice have been adopted and provide practical guidance for the management and removal of asbestos. These codes should be followed. There are also licensing requirements relating to asbestos removal.

Safety plans and work method statements

Construction safety plans

A construction safety plan can assist principal contractors to manage their workplace health and safety obligations.

A principal contractor must prepare a construction safety plan before construction work starts.

The plan must state:

- workplace address
- name and address of the principal contractor
- principal contractor's ABN
- whether there is a WHS committee
- whether there is a WHS Officer appointed
- expected start date
- estimated duration of the work
- type of construction
- plant provided for common use site rules
- the risks the principal contractor is obliged to manage
- proposed control measures for the risks
- how the controls will be implemented
- arrangements for monitoring and reviewing controls
- emergency procedures
- public safety strategies.

The plan must be written so it is easy to understand, signed and dated by the principal contractor. It must be available for the length of the project.

The principal contractor must sign and date work method statements that have been received and keep them with the plan, as well as monitor their implementation.

The principal contractor cannot allow work to start unless:

- the plan has been discussed with or a copy given to all relevant people
- the plan is available or readily available for inspection.

The plan must be amended if there are changes in how risks will be managed. The principal contractor must inform any affected person of the change.

Work method statements

Work method statements can assist relevant people to consider how certain activities will be carried out safely.

A relevant person doing construction work needs to prepare a work method statement for high-risk activities including:

- where a person is –
 - to enter a trench more than 1.5 metres deep
 - using explosives
 - using a confined space
 - using a hazardous substance
- if a person could fall –
 - at least 3 metres for housing construction work, or
 - at least 2 metres for other construction work
- working on a roof with a pitch greater than 26°
- where the principal contractor concludes an activity could result in death or bodily harm
- demolition work or asbestos removal work (prescribed activities).

A work method statement is also required for high-risk activities which include:

- tilt-up and precast construction work
- structural alterations that require temporary support to prevent collapse
- moving powered mobile plant at the workplace
- working on a telecommunications tower
- working in, over or adjacent to water where there is a risk of drowning
- working on, or adjacent to, a road or railway
- working on or near a pressurised gas distribution mains and consumer piping
- working on or near a chemical, fuel or refrigerant line
- work near an exposed energised electrical installation
- work in an area that may have a contaminated or contaminated or flammable atmosphere
- work in an area where there are artificial extremes of temperature.

The work method statement must take into account the principal contractor's construction safety plan and also state:

- the high-risk construction activity
- the person's ABN
- the control measures to be used
- the way the activity will be performed
- how the control measures will be monitored and reviewed
- any relevant prescribed occupations.

For demolition work and asbestos removal work (prescribed activities) the work method statement must also state:

- the relevant certificate number
- the arrangements for appropriate training and supervision
- take account of AS 2601 *Demolition work* (non-Queensland Government link) for demolition work.

Work method statements must be easy to understand, signed and dated.

The work method statement must be amended if there is a change in the activity and a copy must be given to the principal contractor. All people affected by changes must be advised of amendments to the work method statement.

The work method statement must be readily available for inspection. It must also be reviewed each year and amended if necessary.

Inductions

Site-specific induction

Having measures in place at the workplace to ensure people are aware of the specific procedures and rules for the site will help minimise the risk of death, injury or illness.

A principal contractor must ensure a person has had a site-specific induction before that person starts construction work (other than housing construction work).

The principal contractor must ensure a person entering a part of the workplace where construction work is being done:

- has been given a site-specific induction, or
- is accompanied by the principal contractor or someone who has been given a site-specific induction.

The induction needs to address the contents of the construction safety plan.

The principal contractor must make a record of the people inducted and the date it was given. The record must be kept for the duration of the construction work.

Site-specific induction is not compulsory for workplaces where housing construction work is being carried out. It will be important for the contents of the principal contractor's construction safety plan to be communicated effectively where site-specific induction is not given.

Refer to Part 17 of the *Workplace Health and Safety Regulation 1997* for specific requirements on general and site-specific inductions.

Housekeeping, equipment, common plant

Housekeeping

Principal contractors play an important role in ensuring the orderly conduct of construction work.

The principal contractor needs to implement and maintain safe housekeeping practices, including:

- appropriate, safe and clear access to and from the workplace
- safe systems for collecting, storing and disposing of excess or waste materials
- adequate space for the storage of materials and plant
- an adequate number of safety signs that are kept in good condition. Appropriate signs may include signs about –
 - the direction to the site office or site amenities
 - where first aid and fire extinguishing equipment are kept
 - the means of access must be kept clear
 - where hazardous substances are kept
 - who the principal contractor is
 - head and foot protection must be worn
 - authorisations required for the site.

Relevant people must:

- implement and maintain the safe housekeeping practices that apply to their work
- manage risks from protruding objects such as exposed nails or vertical reinforcing steel.

Employers must ensure all workers on site are instructed to follow the safe housekeeping practices.

Equipment

Construction work usually requires the use of a wide range of plant and equipment and severe injury and death can result if these items are not used safely.

Plant and equipment should be checked before use. If any faults or problems are identified these should be attended to immediately. Do not use faulty plant or equipment.

Hand tools

- use the correct tool for the job
- use eye protection where appropriate
- use a lanyard or wrist strap to secure the tool if there is a risk of the tool falling, particularly onto people working below.

Explosive powered tools

These can cause injury to the operator or other people in an area which can extend up to 100 metres radius. These tools should:

- be used only by a person who has received instruction in their safe use
- be used in an area where appropriate warning signs have been displayed and where people are wearing eye and hearing protection.

Electrical equipment

Defective or carelessly used electrical gear can kill.

To help prevent electrocution you should:

- have electrical equipment tested and tagged
- not use leads, plugs, connectors, guards and other parts if damaged, defective or if they do not have a current inspection tag
- not use piggy-back plugs and double adaptors
- ensure each final sub-circuit of construction wiring is protected by a safety switch
- ensure leads are kept well away from heat sources, wet areas, sharp objects and other places where they could get damaged
- if necessary run cables at height to keep them dry and prevent them from being damaged
- ensure tools are in good condition
- use tools with insulated handgrips
- wear non-conductive footwear
- look out for overheating equipment
- keep as far away as possible from power lines and electrical cables.

There is more information available on electrical safety.

Compressed air

Compressed air has the potential to cause serious injury, especially to eyes and ears so:

- don't ever direct air jets against any part of your body or against other peoples' bodies
- before connection, check hoses and equipment for damage such as broken retainers, switches and guards – if any part is damaged or defective do not use it
- check that hoses are clear of walkways, doorways and vehicle access areas wear eye and ear protection.

Hot work

Equipment used in gas welding, cutting and electric welding should be handled only by competent operators, and:

- protection screens should be used to isolate the work area and protect people from UV related eye injury
- appropriate warning signs should be posted
- flammable liquids and gases and other combustible material must be moved a safe distance from the work area
- electrical equipment must have current tagging and/or safety switches
- parts such as gauges, hoses, connectors and torches should be checked for damage or defects
- flash back arresters should be fitted
- gas bottles should be secured in their trolley
- keys should be left in the bottles
- appropriate fire extinguishers should be immediately available
- protective face shields or goggles, clothing and gloves should be worn – do not look at arc welding without suitable eye protection.

Lasers

If sufficiently high powered, lasers can cause damage to the eye or skin. Employers should ensure that on-site safety precautions appropriate to the class of laser being used are put in place.

Cranes and lifting gear

Because cranes and mechanical lifting gear are used to handle excessively heavy loads, there is always potential for injury to the operator and others. Before operation begins, the equipment, its location, setting up and intended use should be assessed to ensure that risks to health and safety are minimised or removed.

It is important to ensure:

- the crane or equipment is adequate for the job – you need to know the weight and mass of the load to be lifted and the capacity of the equipment to lift such a load
- the crane operator has the appropriate certificate
- dogger and riggers have appropriate certificate
- all components of the crane are properly maintained
- people will not be struck by counterweight, for example, by using barricades and signs.

Information on chains, slings, shackles and other lifting gear is provided in the *Guide for doggers* and *AS 2550.1 Cranes – Safe use – General requirements*.

Outriggers should be:

- fully extended
- kept clear of trenches and excavations
- supported by sole plates or pig-stied timbers.

Vehicles and other equipment

Vehicles and other 'driver operated' equipment should only be moved or used by a person who has an appropriate permit, licence or certificate.

Operators should stay away from hazards such as walkways, power lines, trenches, pits, unstable surfaces, steep gradients, projecting objects and other vehicles. Operators should remain alert to the position and movement of other people in the vicinity of their vehicles and other equipment.

Other people's responsibilities

- Traffic controllers should wear safety vests for identification.
- Other people in the area should remain well clear of the moving vehicle or equipment and should understand the operator has a restricted field of vision.
- People not involved in the work should keep clear of the immediate plant area and follow any safety instructions from competent operators.

Concrete pumping

- The operator should be trained in the use and operation of the machinery involved in concrete pumping and be aware of the dangers associated with pumping procedures.
- Whenever possible, people should stay out of the path of moving vehicles and avoid being under the concrete placing boom.
- People not involved with this work should keep clear and follow any safety instructions from competent operators.
- The boom pump operator must have an appropriate certificate.

More information on concrete pumping is provided in the *Plant Code of Practice – Concrete Pumping Supplement*.

Post-tensioning or pre-stressing

- Post-tensioning or pre-stressing work should only be carried out by people who have the expertise in this field and operators who are trained under the direct supervision of competent operators.
- Adequate barricades and other protection should be put in place.
- Appropriate warning signs should be clearly displayed.
- People not involved with this work should keep clear and follow any safety instructions from competent operators.

More information on plant and equipment is provided in the *Plant Code of Practice*.

Common plant

Common plant is plant provided by the principal contractor for use by any person at the workplace.

The principal contractor must:

- ensure the plant is safe for use
- maintain the plant
- comply with requirements in the *Workplace Health and Safety Regulation 1997* for that type of plant.

Relevant people using the plant must ensure any requirements about its safe use are complied with.

Major hazards

Excavations and trenches

Before excavation work is carried out, the **relevant person or principal contractor**, for construction work, must:

- find out what underground services exist
- obtain relevant information about the service (location, type, depth, restrictions to be followed)
- record the information.

Dial 1100 Before You Dig is a useful service.

A relevant person must:

- consider the information
- follow any reasonable restrictions
- implement necessary control measures.

A relevant person is responsible for managing the risks associated with:

- an excavation collapsing
- objects falling into an excavation
- a person falling into an excavation
- substance exposure in an excavation, for example, carbon monoxide from plant.

A barricade or hoarding at least 900mm must be erected around an excavation unless it is not possible or no members of the public are likely to be in the area of the excavation.

A relevant person must implement any control measures necessary to prevent risk from the collapse of another structure such as an adjoining building or road.

Trenches

A barricade at least 900mm high must be erected around a trench that is 1 metre or more deep unless it is not possible or only workers involved with the trench will be in the area; or another form of barrier exists, for example, excavated materials near the trench.

Relevant people need to ensure that if a person is entering a trench more than 1.5 metres deep it is either:

- shored or shielded
- benched - not higher than it is wide and no vertical face exceeding 1.5 metres

- battered - angle not exceeding 45° and bottom vertical face not exceeding 1.5 metres
- approved in writing by an engineer as safe to work in.

Written approval to vary the benching and battering requirements may be obtained from an engineer. The approval must be kept on site at all times.

Ladders used for access must be no more than 9 metres apart in the area of the trench where work will be carried out.

Work at heights

(excluding work on ladders or trestle ladder platforms and scaffolding work)

Risks must be managed if a person could **fall less than** 3 metres (housing construction), 2 metres (other construction) or if work is on a roof pitch not more than 26°. Hazards that may present a risk from a fall include:

- vertical reinforcing steel, the edge of a rubbish skip, a picket fence, or a stack of bricks below workers
- unsheathed floor bearers and joists 2 metres below workers
- work on a brittle roof.

Factors such as the type of activity being carried out should be taken into consideration to establish the degree of risk.

Control measures used to manage risks must comply with regulatory requirements.

Relevant people carrying out **work above these heights** or on a roof pitch more than 26° must:

- prevent a fall, or
- if prevention is not possible, arrest the fall and prevent or minimise the risk of death or injury from the arrest of the fall.

The controls could include:

Edge protection systems around elevated work areas must:

- be erected and used in accordance with the instructions of the manufacturer, supplier, engineer or competent person
- be designed to withstand a force which may reasonably be expected to fall against it
- be at least 900 mm high.

A fall protection cover placed over holes and openings must be:

- able to withstand the impact of a fall onto it of any person who may reasonably be expected to fall onto it
- be securely fixed in place to prevent it being moved or removed accidentally.

A travel restraint system is a personal fall prevention device and must:

- not allow a free fall either from an edge or through the work surface
- be installed by a competent person and be inspected by a competent person at least every six months (a written record of the inspection must be obtained)
- have an anchorage point with a capacity to withstand any load that could be exerted on it in its normal operation
- only be used by a person who has been trained in the safe and correct use of the system
- not be used if a component of the system shows evidence of wear or weakness to an extent that may affect the system's safety.

A fall arrest system consisting of harnesses or ladder belts attached by lanyards to a suitable anchor point must:

- have each anchorage point:
 - designed by an engineer and inspected and approved by a competent person before it is first used
 - with a capacity of 12 kN, if only 1 person is using the anchorage point and the person could have a limited free fall
 - with a capacity of 15 kN, if only 1 person is using the anchorage point and the person could have a free fall
 - with a capacity of 21 kN, if 2 people are using the anchorage point
- have each anchorage point located so that the person using the system can attach a lanyard without the risk of falling
- limit the force applied to a person by a fall to not more than 6 kN by the use of a personal energy absorber
- be installed and maintained in accordance with the instructions of the manufacturer, supplier, engineer or competent person
- have sufficient free fall distance taking into consideration:
 - the person's height
 - the height and position of the anchorage point
 - the length of the lanyard
 - any slack in the static line
 - any stretching of the lanyard or static line when extended by a fall
 - the length of the energy absorber when extended by a fall
 - any other relevant factor
- have no part of the system come into contact with anything that could affect the safe use of the system

- only be used by a person trained in the safe and correct use of the system
- have written safe rescue procedures
- not be used if a component of the system shows evidence of wear or weakness to an extent that may affect the system's safety
- be inspected by a competent person at least every 6 months (a written record of the inspection must be obtained)
- not be used after a fall unless its manufacturer or a competent person has inspected it and decided that it is fit for safe use
- not be used by a person working alone.

Twin tail fall arrest lanyards failure can be fatal - recommendations for design and lanyard assembly.

An industrial safety net must:

- be designed by an engineer or competent person
- be made of material designed to minimise injury to a person falling into the net
- have energy absorbing characteristics to reduce the shock or injury to a person falling into the net
- be installed so that a person falling into the net will not hit anything below the net
- be installed as close as possible below to where the person is working but not more than the distance specified by the manufacturer, supplier, engineer or competent person
- be installed, used, installed and maintained in accordance with the instructions of the manufacturer, supplier, engineer or competent person.

Refer to Part 17 of the *Workplace Health and Safety Regulation 1997* for more information on the requirements for these controls.

Ladders, trestles and scaffolding

Relevant people must prevent or minimise risks from using a ladder.

Single or extension ladders may only be used to:

- gain access
- carry out permitted work, section of the *Workplace Health and Safety Regulation 1997* where the material or equipment being carried does not restrict movement or cause loss of balance; the trunk of the body remains centred on the ladder; and equipment can be used with one hand (unless a control to prevent a fall is used).

A person using a ladder for access or permitted work must either:

- have three points of substantial contact with the ladder or a stable object, for example, standing on the ladder with two feet while holding a fascia board or timber stud
- prevent falls with a control measure, for example, a pole strap
- use a fall-arrest harness system (not attached to the ladder).

The ladder must have a load rating of not less than 120kg and be:

- secured against movement at or near its top or bottom, for example, by tying or clamping
- manufactured for industrial use
- used only for the designed purpose
- not more than 6.1 metres for a single ladder
- not more than 9.2 metres for an extension ladder used for electrical work or 7.5 metres for other work
- on a firm and stable surface
- erected at an angle between 70° and 80°
- extended at least 1 metre above a surface being accessed.

Relevant people must prevent or minimise risks from working on a platform supported by a trestle ladder.

Platforms used on trestle ladders below 3 metres for housing construction or 2 metres for other construction must be:

- 450 mm wide, or
- 225 mm wide if it is light work. Examples of light work include:
 - painting
 - installing a roof gutter, air-conditioning duct, metal fascia or lighting
 - placing pine roof trusses in position
 - performing inspections or tests
 - installing an electrical connection.

Fixing plaster board sheeting to an internal stairwell void, fixing cladding to a gable end of a roof or using a medium or heavy duty angle grinder or circular saw are not considered light work.

For work on a trestle ladder at 3 metres or more for housing construction or 2 metres or more for other construction:

- the trestle ladder must have edge protection
- each trestle ladder must be secured to prevent it moving, for example, tying the ladder to a sturdy wall or bracing it to the ground
- the platform must have an unobstructed surface width of 450mm
- not be higher than 5 metres.

A person erecting or dismantling scaffolding 3 metres or more in housing construction or 2 metres or more in other construction must:

- be prevented from falling
- use a fall arrest harness system, or
- immediately install platforms, edge protection and a means of access as each level is erected and retain a full deck of platform until the platforms are transferred.

More information on scaffolding is provided in the *Scaffolding Advisory Standard 2004* (now known as a Code of Practice).

Protection from falling objects

Principal contractors and relevant people must take precautions to ensure that objects do not fall onto or hit people doing construction work and people in adjoining areas. Adjoining areas could include a public footpath, road, square or the yard of a dwelling or other building beside a workplace.

Objects including equipment, material, tools and debris that can fall or be emitted sideways or upwards are considered as falling objects. Examples of falling objects include tools falling off a working platform, rock and soil falling into a trench, falling bricks deflected off the side of a building, and concrete pre-cast panels falling over.

Principal contractors

For housing and civil construction work, principal contractors must assess the risk from falling objects and use controls to prevent or minimise the risks. The controls chosen must comply with any regulatory requirements.

For construction work that is not civil or housing construction work, the principal contractor must implement one of the following controls based on the angle between the highest point where work is to be carried out and the line where the control will be placed:

- barricade or hoarding at least 900mm high $\leq 15^\circ$
- hoarding at least 1800mm high $>15^\circ$ and $\leq 30^\circ$
- fully sheeted hoarding at least 1800mm high $>30^\circ$; and
- if the angle is equal to or more than 75° and not demolition work or work erecting or dismantling formwork:
 - erect a gantry
 - close the adjoining area
 - erect a catch platform with vertical sheeting or perimeter screening.

For demolition work or work to erect or dismantle formwork, the principal contractor must:

- close the adjoining area, or
- erect perimeter containment screening.

However, if permission to close the adjoining area is withheld and perimeter containment screening cannot be erected, the principal contractor must ensure that another control measure is implemented to prevent objects falling on or otherwise hitting members of the public.

The public must be kept out of an adjoining area where loads are being lifted, unless a gantry that would withstand the force of the load if it fell, has been provided.

Relevant people

Where a principal contractor is not required for the construction work, the relevant person must comply with the principal contractor's obligations outlined above.

Refer to Part 17 of the *Workplace Health and Safety Regulation 1997* for specific requirements on control measures for protecting people from falling objects.

Demolition work and asbestos removal

Demolition work or asbestos removal work (prescribed activities) are now considered as construction work.

People performing this type of work must now comply with the construction related regulations. For example, relevant people doing demolition work or asbestos removal work on houses should implement control measures to prevent anyone from falling while doing the work.

Relevant people doing demolition work and asbestos removal work (prescribed activity) must hold a certificate to perform these activities and complete work method statements before starting any work.

Demolition work includes the:

- demolition or systematic dismantling of a building or other structure, or part of a building or other structure
- not including the systematic dismantling of a part of a building or other structure for alteration, maintenance, remodelling or repair

Demolition work involving the removal of asbestos materials, including fibro sheeting, needs extra safety precautions.

Asbestos removal work must be done in accordance with the *National Code of Practice for the Safe Removal of Asbestos* 2nd Edition.

Amenities

Meal areas

Principal contractors must ensure workers have reasonable access to a room or sheltered area to eat meals or take breaks. The area must:

- present no health or safety risk
- be hygienic
- if there are 15 or more workers at the site, have adequate space, seating and facilities for washing and storing utensils, boiling water and storing food in a cool place.

Toilets

Principal contractors must ensure workers have reasonable access to toilets. Reasonable access for a workplace where civil construction work is performed would be a toilet in the workplace's site compound boundaries. For other workplaces where construction work is performed, within the workplace's site boundaries.

There must be 1 toilet available for each 15, or part number of workers.

A toilet connected to sewerage, a septic system, a pump-out holding tank storage type system ("connected") or a portable toilet is acceptable for a workplace with fewer than 15 workers. However, if the number of the workers increases and the toilet provided was portable, it must be replaced by a connected toilet within 2 weeks after the number of workers has increased.

A workplace with four or more levels must have a toilet on the ground and fourth floor and every third floor thereafter.

Toilets must:

- be in a cubicle or room fitted with a door and located in a position that allows privacy
- have fresh air
- if used by female construction workers – be equipped with sanitary disposal facilities; and separated so that urinals are not visible
- have an adequate supply of toilet paper.

Washing facilities

The principal contractor must ensure workers have access to washing facilities. The facilities must be separate from toilets if there are no separate toilet facilities for females. Examples of washing facilities include:

- a hose at a housing construction site
- a water container with a tap at a road construction site

- wash basins provided with portable or connected toilets at a high rise building construction site.

Drinking water

Employers must ensure workers have access to drinking water that has been supplied by the principal contractor from a source other than toilet, hand or face washing facilities. Reasonable access for a housing construction site would be within 30 metres from where the work is being done and for a high rise building, access on the ground level and every second level of the building.

First aid

Employers must provide workers with reasonable access to appropriate and adequate first aid equipment.

A self-employed person is responsible for ensuring reasonable access to appropriate and adequate first aid equipment.

For more information on workplace amenities.

General health and safety issues

Personal safety, manual tasks

Wearing personal protective equipment (PPE) can protect a person from injury, and can save time and money.

PPE in the building and construction industry may include:

- hard hats
- boots
- hand protection
- eye protection
- hearing protection
- respiratory protection
- protective clothing.

Manual tasks a big part of construction work and include activities such as driving heavy machinery, pushing a wheelbarrow, holding a plasterboard sheet while it is attached to the ceiling or using hand tools.

Manual tasks cover any activity where you are required to grasp, manipulate, strike, throw, carry, move (lift, lower, push, pull), hold or restrain an object or body part.

Sun exposure and hazardous substances

People who work in the sun for all or part of the day have a high risk of developing skin cancer.

Many of the substances used on a construction site are potentially hazardous. Different hazardous substances have different health effects and safe use requirements.

Hazardous substances of particular concern in the building and construction include:

- silica dust
- asbestos
- lacquers, polyurethanes, enamels and solvents used in spray painting.

Confined spaces and emergencies

In some construction workplaces there will be areas which are very high risk environments such as silos, vats, pipelines, trenches, pits and crawl spaces.

Working in confined spaces can be extremely dangerous. Part 15 of the *Workplace Health and Safety Regulation 1997* must be followed.

Emergencies happen on construction sites. Fire, explosion, structural collapse, gas leaks, as well as serious injury or death can occur.

Details about emergency procedures must be outlined in the principal contractor's construction safety plan and during site-specific inductions.

Noise

In the demolition and construction industry a number of activities are notoriously noisy, for example, rock breaking during demolition work or the operation of a jack hammer. The use of vibrating wacker plates, electric tools, explosive powered nail guns and vibrators during concrete pours, all cause specific noise problems for the operators and workers in the vicinity in relation to maintaining their hearing ability.

In the demolition and construction industry, a large variety of power tools, equipment and plant is used on a daily basis. Rock breakers, jack hammers and similar types of equipment on demolition sites cause noise levels ranging between 100 - 120dB(A) at the operators' ears. Because of their impulsive nature and the way our ears operate, the noises from these rock breakers and jackhammers are potentially more hazardous to our hearing than excessive noise from operating machines or power tools for example.

Explosive powered nail guns on construction sites may cause peak noise levels well in excess of 140dB(C) at operator ear level.

Electric saws, routers and planers can cause noise levels ranging between 90-100dB(A) at the operator ear level.

Typically a large number of power tools are used for short periods at a time, for example to cut a piece of wood. However, these activities occur many times per day and accumulate to a significant exposure during the day.

Almost all trades on demolition and construction sites are exposed to excessive noise on a daily basis, with form workers, dogmen, concreters, line hands, steel fixers and carpenters having the highest exposures.

The noise levels they are exposed to are comparable to those in a nightclub or hotel where loud music is produced.

Typical noise sources

Some typical noise sources in the demolition industry at operator ear level include:

Rock breaker at 3 metres	
on concrete	90 - 92dB(A)
on steel beam	98 – 101dB(A)

Drott operating at 4 metres	93 - 94dB(A)
Jack hammer	100 - 110dB(A)
Rotary screw compressor	88 - 90dB(A)

Some typical noise sources in the construction industry at operator ear level include:

Angle grinder	95 - 105dB(A)
Back hoe	84 - 89dB(A)
Explosive operated nail gun	125 - 147dB(A)
Wacker plate compactor	94 - 97dB(A)

A further risk to hearing is caused by combinations of noise sources in the ambient noise levels on construction sites.

Noise control measures

As with all risk exposures in the workplace, risk management must be applied through a hierarchy of control measures, i.e. elimination, substitution, engineering and/or administrative controls, and as a last resort, (or as an interim measure!), reliance on protective equipment.

Noise on construction or demolition sites should, wherever possible, be controlled through engineering and/or administrative noise control measures.

Examples of controls for demolition work include:

- efficient silencers or exhausts fitted on jack hammers, excavators, back hoes, dumpers etc. In extreme noise sensitive areas so called 'critical residential type mufflers' can be fitted as a replacement of existing exhausts. Noise reduction of about 15dB(A) can be achieved this way
- hiring compressors with acoustical grade casings
- keeping enclosure panels on compressors closed.

Examples of controls for construction work include:

- maintaining pneumatic tools in optimum condition and keep air lines leaking
- fitting silencers or mufflers
- keeping power saw blades sharp
- using vibration damped blades
- clamping material to be cut

- using partial acoustic enclosures, which can easily be moved around the site.

Where noise control cannot be achieved through these measures an employer should provide suitable personal hearing protectors as well as proper instruction in their use so that exposed workers can perform their work in a manner which is safe and without risks to their health and safety.

Unprotected exposure to excessive noise for as little as two minutes a day can cause permanent hearing damage. Permanent hearing damage is just that, permanent. There is no cure.

WHSO, WHSR and committees

Workplace health and safety officers (WHSO) are appointed by employers and principal contractors where there are 30 or more people at the workplace to provide advice about workplace health and safety. They carry out inspections and audits, set up educational programs about workplace health and safety, help investigate all workplace incidents and conduct annual workplace assessments. WHSOs require special training.

Refer to Part 8 of the *Workplace Health and Safety Act 1995* for specific requirements in relation to WHSOs.

Workplace health and safety representatives (WHSR) are elected by fellow workers. Representatives are entitled to carry out inspections and review the circumstances of workplace incidents. They are also entitled to participate in the workplace health and safety committee. A workplace health and safety representative does not need any experience or special qualifications, but is entitled to paid training on request.

Refer to Part 7 of the *Workplace Health and Safety Act 1995* for specific requirements in relation to WHSRs.

Workplace health and safety committees help in the cooperation between employers and workers. A committee member must be an employer, principal contractor or worker at the workplace. A committee considers health and safety issues and reports on these to the employer. An employer may form a workplace health and safety committee on his or her own initiative, but must do so if the WHSR requests it.

Refer to Part 7 of the *Workplace Health and Safety Act 1995* for specific requirements in relation to workplace health and safety committees.

Construction Industry Action Plan

The Queensland Workplace Health and Safety Strategy Construction Industry Action Plan 2004-2007 was released on 22 October 2004 and identifies the key workplace health and safety activities to be undertaken in the construction industry from 2004 to 2007.

This action plan contains a range of goals:

- improve data management and analysis
- identify priorities and influence the workplace health and safety agenda
- strategic evidence based development of workplace health and safety legislation, standards and codes
- access to information resources that assist in achieving industry compliance
- practical industry guidance based on sound risk management principles and industry/worker experience
- specific and general industry deterrence strategies
- improve methods for increasing industry workplace health and safety awareness of obligations holders and the broader community
- increase skills of all industry stakeholders
- improve incentives for genuine prevention efforts in the industry.

Full download suitable for printing (PDF, 638 KB).

The action plan supports the Queensland Workplace Health and Safety Strategy 2004-12.

Read about other action plans.

Workplace Health and Safety Taskforce

The Building and Construction Industry (Workplace Health and Safety Taskforce 1999) was established by the then Minister for Employment Training and Industrial Relations.

The terms of the Taskforce were to:

- research and develop better health and safety data collection methods from which more informed intervention strategies may be initiated
- make recommendations that will minimise exposure to risk
- introduce a package of measures that will improve compliance levels of all parties to meet their health and safety obligations.

The final report of the taskforce was released on 30 August 2000.

The report focussed on the key hazard areas that contributed to major injury and loss within the industry.

The report made 78 recommendations including:

- the need for clearer and more enforceable rules
- broad-based industry education on health and safety
- the introduction of more on-the-spot fines for high risk hazards
- a tracking system to better monitor poor safety performance.