Guidelines

For the Provision of Facilities and General Safety in the

Construction Industry

To Meet the Requirements of the Health and Safety in Employment Act 1992 and Regulations 1995

OSH
OCCUPATIONAL SAFETY & HEALTH SERVICE

DEPARTMENT OF LABOUR
TE TARI MAHI

Hon. Doug Kidd
Minister of Labour

Foreword

The Health and Safety in Employment Act 1992 reformed the law and provided, for the first time, comprehensive coverage and a consistency of approach to the management of safety and health in all New Zealand workplaces.

Since its introduction on 1 April 1993 the new law has proven to be innovative and effective. It has not only been successfully enforced through the courts, but — more importantly — has improved attitudes throughout all industries.

Regulations have now been passed which contain standards for matters not specifically addressed in the Act.

The importance of enforcing the law can't be ignored. However, there is also a real need for industry-specific information for employers and employees. These guidelines are an important part of this process, and they provide further information on means of compliance with the Act and the regulations.

My intention in publishing these guidelines is that they will be another step towards the ultimate goal of the legislation — which is to constructively change people's attitudes and responses to workplace health and safety.

Hon Doug Kidd
Minister of Labour

Contents

About these guidelines

These guidelines will apply to all construction workplaces.

They are part of a series aimed at different industries. Other guidelines have been produced for the following industries:

- Commercial and industrial premises
- Agriculture
- Forestry
- Machinery
- Woodworking machinery

In addition, separate regulations cover mining, petroleum, hazardous equipment (boilers, pressure vessels, cranes, and passenger ropeways) and tractor safety frames.

In the case of places of work not covered by the separate guidelines on industrial and commercial premises, agriculture or forestry (or by mining regulations), these "general" guidelines will provide useful information to assist principals, employers and employees to comply with their duties under the Act and regulations.

These guidelines are a guide to the regulations and to good practice in particular situations or hazards. Guidance on the Act is available from other OSH publications, such as *A Guide to the Health and Safety in Employment Act 1992*, or *A Guide to Managing Health and Safety to Meet the Requirements of the Health and Safety in Employment Act 1992*.

Content of these guidelines

These guidelines contain three categories of information on safety and health:

- Relevant sections of the Health and Safety in Employment Act 1992 and regulations;
- The guidelines themselves — based in part on standards contained in former legislation and on generally accepted good practice; and
- References to further information in support of the guidelines.

Application of reference information

1. Approved codes of practice

Any work carried on in a place of work for which there as been issued an approved code of practice under section 20 of the Act, should be carried out in accordance with that code.

LEGISLATIVE PROVISIONS THAT RELATE SPECIFICALLY TO THE SUBJECT OF THE GUIDELINE.

The **most relevant** sections of the Act and regulations are listed separately.

Often the section of the Act referred to contains general provisions, but has been quoted because it is most likely that any prosecution would be taken under it.

Regulations are reproduced as appropriate, and their observance is mandatory where they apply.

THE GUIDELINES THEMSELVES.

These guidelines contain **recommendations** for employers and others on means of compliance with the Health and Safety in Employment Act 1992 and regulations.

They describe good practices for specific work situations, and as such support the Act and regulations. Where appropriate they refer the reader on to Codes of Practice approved by the Minister of Labour under the Act, Standards, regulations made under other Acts of Parliament, and other recognised statements of good practice relevant to the particular area.

They are, however, ***guidelines***, and — while every effort has been made towards completeness and accuracy at the time of publication — they should at any time be read in conjunction with the legislation and other documents referred to.

REFERENCES TO FURTHER INFORMATION IN SUPPORT OF THE GUIDELINES.

These include New Zealand and other Standards, Occupational Safety and Health Service publications, other publications, and other sources of information which **support the guidelines**.

LEGISLATION - Personal protective equipment

ACT

10. **Significant hazards to employees to be minimised, and employees to be protected, where elimination and isolation impracticable**—
(1) Where—
(a) There is a significant hazard to employees at work; and
(b) Either—
(i) There are no practicable steps that may be taken to eliminate it; or
(ii) All practicable steps to eliminate it have been taken, but it has not been eliminated; and
(c) Either—
(i) There are no practicable steps that may be taken to isolate it from the employees; or
(ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,—
the employer shall take the steps set out in subsection (2) of this section.
(2) The steps are—
(a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
(b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and
...

REGULATIONS

11. **Noise**—(1) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that no employee is exposed to noise above the following levels:
(a) A noise exposure level, $L_{ex,8h}$, of 85 dB(A); and
(b) A peak noise level, L_{pc}, of 140 dB,—
whether or not the employee is wearing a personal hearing protection device.
(2) For the purposes of subclause (1) of this regulation,—
(a) The noise exposure level $(L_{ex,8h})$ is the level of the daily noise exposure normalised to a nominal 8 hour day, in dB(A) referenced to 20 micropascals; that is to say, it is the steady noise level that would, in the course of an eight hour period, cause the same A-frequency-weighted sound energy as that due to the actual noise over the actual working day; and
(b) The peak noise level, (Lpk peak), is the highest frequency-unweighted peak sound pressure level in the place of work in decibels referenced to 20 micropascals, measured using sound measuring equipment complying with the requirements of the Australian Standard numbered AS 1259.1-1990 and entitled "Sound level meters Part 1: Non-integrating"; and
(c) The levels of noise referred to in subclause (1) of this regulation shall be measured and assessed in accordance with the Australian Standard numbered

4.1 Personal protective equipment

Employers are responsible for the provision of personal protective equipment. The following general rules apply to its use:

- All employees and others should be trained in the use of personal protective equipment and made fully aware of the reasons for its use.
- Where it is impracticable to fix overhead protection and there is a risk of injury from falling objects, safety helmets, provided by the employer, shall be worn.
- Adequate eye protection should be worn whenever there is any possibility of eye damage from welding flash, or debris such as concrete or wood chips, or grinding dusts. (It should be noted that several people have lost an eye due to breaking off high-tensile masonry nails by sticking sideways with a hammer, the flying broken nail becoming lodged in the eye in each case.)
- Footwear shall be able to adequately protect the employees feet having regard to the sort of work being carried out. Usually only steel-capped boots or shoes will do this.
- Hearing protection shall be worn if noise levels are high. (The noise of a portable circular saw or hammer drill exceeds the safe limits at a distance of 0.5 m.)
- Gloves may be necessary for some tasks.
- Push sticks are always needed at the saw bench,
- Respiratory protection which is appropriate for the task should be personally provided to all employees exposed to respiratory hazards such as asbestos, chemical fumes and dust.

FURTHER INFORMATION

Standards

NZS 2264:1970, Amendment 2 1981 *Specification for industrial safety helmets (maximum protection)*
AS/NZS 2210.1: 1994 *Occupational protective footwear — Guide to selection, care and use*
AS/NZS 2210.2: 1994 *Occupational protective footwear — Specification*
AS/NZS 1337:1992 *Eye protectors for industrial applications*
AS 1270 :1988 *Acoustics — Hearing protectors*
AS/NZS 1716:1994 *Respiratory protective devices*
AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices*
OSH publications
Guide to Respirators and Breathing Apparatus
Approved Hearing Protection Devices

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2. Standards

These guidelines frequently refer to New Zealand and other Standards that provide technical guidance and specifications for employers and others.

In addition, Standards may be specified in particular regulations as having application to any place or type of work, equipment, plant, activity, or any other thing, covered by the regulations. In these cases, employers shall comply with the requirements of that Standard.

3. The Building Act 1991

Any building which is constructed or altered is required to comply with the requirements of the Building Act 1991 to the extent that those requirements apply to the construction of the building.

4. *OSH Handbook* for health and safety inspectors

This resource has been developed and maintained primarily for the use of Occupational Safety and Health Service employees. However, it has been referred to in these guidelines as a source of further information for people in industry, and may be sighted at any branch office of the Occupational Safety and Health Service.

Legislation — Definition of construction work

REGULATION.

2. **Interpretation**—In these regulations, unless the context otherwise requires,—

"Construction work"—

(a) Means any work in connection with the alteration, cleaning, construction, demolition, dismantling, erection, installation, maintenance, painting, removal, renewal, or repair, of—

(i) Any building, chimney, edifice, erection, fence, structure, or wall, whether constructed wholly above or below, or partly above and partly below, ground level:

(ii) Any aerodrome, cableway, canal, harbour works, motorway, railway, road, or tramway:

(iii) Any thing having the purpose of drainage, flood control, irrigation, or river control:

(iv) Any distribution system or network having the purpose of carrying electricity, gas, telecommunications, or water:

(v) Any aqueduct, bridge, culvert, dam, earthwork, pipeline, reclamation, reservoir, or viaduct:

(vi) Any scaffolding; and

(b) Includes any work in connection with any excavation, preparatory work, or site preparation carried out for the purposes of any work referred to in paragraph (a) of this definition; and

(c) Includes any work referred to in paragraph (a) or paragraph (b) of this definition carried out underwater, including work on buoys, obstructions to navigation, rafts, ships, and wrecks; and

(d) Includes the use of any materials or plant for the purposes of any work referred to in any of paragraphs (a) to (c) of this definition, and

(e) Includes any inspection or other work carried out for the purposes of ascertaining whether any work referred to in any of paragraphs (a) to (c) of this definition should be carried out; but

(f) Does not include any work in any mine, quarry, or tunnel:

Legislation — Notifiable work

REGULATION.

2. **Interpretation** — In these regulations, unless the context otherwise requires,—

.....

"Notifiable work" means—

(a) Any restricted work, as that term is defined in regulation 2 (1) of the Asbestos Regulations 1983:

(b) Any logging operation or tree-felling operation, being an operation that is undertaken for commercial purposes:

(c) Any construction work of one or more of the following kinds:

(i) Work in which a risk arises that any person may fall 5 metres or more, other than—

Work in connection with a residential building up to and including 2 full storeys:

Construction work defined

These guidelines have been developed to provide guidance in all of the situations described in the following definition of "Construction work":

Construction work means any work in connection with the alteration, carrying out , cleaning, construction, demolition, dismantling, erection, installation, maintenance, painting, removal, renewal, or repair of any structure or structures of any one or more of the following kinds:

(a) Any building, chimney, edifice, fence, structure, or wall, whether constructed wholly above or below, or partly above and partly below, ground level;

(b) Any aerodrome, cable way, canal, harbour works, motorway, railway, road, or tramway:

(c) Any drainage, flood control, irrigation, or river control work;

(d) Any electricity, gas, telecommunication, or water distribution system or network;

(e) Any aqueduct, bridge, culvert, dam, drive, earthwork, pipeline, reclamation, reservoir, tunnel, or viaduct, but excluding any adit, drive, tunnel, or underground working intended to be greater than 15 metres long, or any shaft intended to be greater than 4.5 metres deep;

(f) Any scaffolding.

This includes:

- Any work in connection with any excavation, site preparation, or preparatory work, carried out for the purpose of any construction work;
- The use of any plant, tools, gear, or materials for the purpose of any construction work;
- Any such work carried out underwater, including work on buoys, rafts, ships, wrecks, and obstructions to navigation; and
- Any inspection or other work carried out for the purpose of ascertaining whether construction work should be carried out.

Notifiable work

Some construction works are considered to be more hazardous, and the regulations require notification to a health and safety inspector at least 24 hours prior to the commencement of the work.

Notifiable work means —

(a) Any tree-felling or logging operation undertaken for commercial purposes in which one or more persons is employed or engaged.

(b) Any restricted work as defined in regulation 2(1) of the Asbestos Regulations 1983;

(c) Any construction work of one or more of the following kinds:

(i) Work in which a risk arises that persons employed or engaged in the work may fall 5 metres or more, other than —

• Work in connection with a residential building up to and including 2 full storeys;

• Work on overhead telecommunications lines and overhead electric power lines;

• Work carried out from a ladder only; or

• Maintenance and repair work of a minor or routine nature.

(ii) The construction or dismantling of scaffolding any part of which is 5 metres or more above the ground;

(iii) Work using a lifting appliance where the appliance has to lift a mass of 500 kg or more a vertical distance 5 metres or more, other than work using a self-propelled mobile crane, an excavator, or a forklift;

(iv) Work in any pit, shaft, trench, or other excavation in which persons employed or engaged in the work are required to work in a space more than 1.5 metres deep and having a depth greater than the horizontal width at the top;

(v) Work in any drive, heading, or excavation in which persons employed or engaged are required to work with a ground cover overhead;

(vi) Work on any excavation in which any face has a vertical height of more than 5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical;

(vii) Work in which explosives are used or in which explosives are kept on site for the purpose of being used;

(viii) Work in which persons employed or engaged in the work breathe air that is or has been compressed, or a respiratory medium other than air;

Notification must be in writing, and an appropriate form is available from any branch office of the Occupational Safety and Health Service.

Work on overhead telecommunications lines and overhead electric power lines:

Work carried out from a ladder only:

Maintenance and repair work of a minor or routine nature:

(ii) The erection or dismantling of scaffolding from which any person may fall 5 metres or more:

(iii) Work using a lifting appliance where the appliance has to lift a mass of 500 kilograms or more a vertical distance of 5 metres or more, other than work using an excavator, a fork-lift, or a self-propelled mobile crane:

(iv) Work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 metres deep and having a depth greater than the horizontal width at the top:

(v) Work in any drive, excavation, or heading in which any person is required to work with a ground cover overhead:

(vi) Work in any excavation in which any face has a vertical height of more than 5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical:

(vii) Work in which any explosive is used or in which any explosive is kept on the site for the purpose of being used:

(viii) Work in which any person breathes air that is or has been compressed or a respiratory medium other than air:

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26. **Notification**—(l) In this regulation, the term "employer" includes a person who controls a place of work.

(2) Subject to subclause (4) of this regulation, every employer who intends to commence any notifiable work or any work that will at any time include any notifiable work shall take all practicable steps to lodge notice of that intention in accordance with this regulation.

(3) A notice required to be lodged under subclause (2) of this regulation shall—

(a) Be lodged at an office that deals with occupational safety and health matters, being the nearest such office of the Department to the place where the work is to be carried out; and

(b) Be in writing; and

(c) Be given at least 24 hours before the time at which the employer intends to commence the work; and

(d) Contain the following particulars—

(i) The nature and location of the work; and

(ii) The name, address, and contact details of the employer; and

(iii) The intended date of commencement of the work, and

(iv) The estimated duration of the work.

(4) It shall not be necessary for any employer to comply with subclause (2) of this regulation before commencing any construction work or tree felling operation necessary to deal with an emergency arising from—

(a) Damage caused by any earthquake, explosion, fire, flood, lightning, ram, slip, storm, or washout; or

(b) The blockage or breakdown of any drain or sewer; or

(c) The blockage or breakdown of any distribution system or network for electricity, gas, telecommunications, or water.

FURTHER INFORMATION

OSH publications

OSH Handbook for health and safety inspectors

Approved Code of Practice for the Safe Erection and Use of Scaffolding

Approved Code of Practice for Excavations and Shafts for Foundations

Approved Code of Practice for Professional Divers

Approved Code of Practice for Demolition

Guidelines for the Management and Removal of Asbestos

Certificates of competency

Certain prescribed classes of work or operations require people to hold certificates of competency, prior to that person being able to carry out the work or operate the particular type of device or equipment.

Certificates are issued for the following:

- Powder-actuated tool operators;
- Construction blasters (trained to use explosives);
- Scaffolders;
- Professional divers; and
- Restricted work with asbestos.

To obtain a certificate an applicant needs to be able to demonstrate that they have qualifications and training for the particular class of certificate applied for.

The regulations provide for the Secretary of Labour to recognise other agencies to issue these certificates. In the main these agencies will be industry training organisations with responsibility for training within a particular industry.

The following organisations have been recognised to issue certain classes of certificates:

Scaffolders

Building and Construction Training Organisation

Powder-actuated tool operators

Ramset Fasteners Ltd

A H Reid Ltd

These companies have been recognised to issue certificates of competence in respect for the makes and models of tools sold and distributed by them.

Legislation — Certificates of competency

ACT.

13. **Training and supervision**— Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work—

a) Either—

(i) Has; or

(ii) Is so supervised, by a person who has,— such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and

(b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

REGULATIONS.

2. **Interpretation** — In these regulations, unless the context otherwise requires,—

.....

"Certificate of competence" means a certificate of one of the kinds referred to in regulation 27 of these regulations:

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"Current", in relation to a certificate of competence, means a certificate of competence that has been issued under regulation 38 of these regulations and has not expired or been cancelled or suspended under regulation 41 of these regulations:

.....

47. **Application of regulations 48 and 49** — (1) In regulations 48 and 49 of these regulations, the term "employer" includes a person who controls a place of work.

(2) In regulations 48 and 49 of these regulations, the term "employee", in relation to a person who controls a place of work, means a person working in the place of work.

•S.R. 1992/109

48. **Diver**— (1) Every employer shall take all practicable steps to ensure that every employee who dives in the course of that employee's work is the holder of a current certificate of competence as a diver, being a certificate that authorises the holder to dive in the category of diving in which the employee is diving.

(2) Nothing in this regulation prevents an employee training to become the holder of a certificate of competence as a diver from delving, in the course of that employee's work, under the direct supervision of the holder of such a certificate, being a current certificate that authorises the holder to dive in the category of diving in which the employee is diving.

49. **Duty in respect of medical fitness of diver**— Notwithstanding anything in regulation 48 of these regulations, every employer shall take all practicable steps to ensure that every employee who dives in the course of that employee's work is, at the time of so diving, medically fit for diving.

Duties of Employers in Relation to Construction Work

50. **Application of regulations 51 to 53**—(1) In regulations *5I to 53* of these regulations, the term "employer" means—

(a) Every employer, in relation to every place of work under the control of that employer in which any construction work is carried out; and

(b) Every person who controls a place of work in which any construction work is carried out, including, in relation to regulation *52* of these regulations, every person who owns any powder actuated tool operated in any place of work in the course of construction work.

(2) In regulations *5I to 53* of these regulations, the term "employee",—

(a) In relation to an employer of the kind described in subclause (I) (a) of this regulation, means an employee of that employer; and

(b) In relation to a person of the kind described in subclause (I) (b) of this regulation, means a person working in the place of work.

51. **Construction blaster**— (1) Every employer shall take all practicable steps to ensure that every employee who, in the course of carrying out construction work, participates in a blasting operation is the holder of a current certificate of competence as a construction blaster, being a certificate that authorises the holder to participate in the categories of blasting operation and construction work that are taking place.

(2) Nothing in this regulation prevents an employee training to become the holder of a certificate of competence as a construction blaster from participating, in the course of carrying out construction work, in a blasting operation under the direct supervision of the holder of such a certificate, being a current certificate that authorises the holder to participate in the categories of blasting operation and construction work in which the employee is participating.

52. **Powder actuated tool operator** — (1) Every employer shall take all practicable steps to ensure that every employee who, in the course of carrying out construction work, operates a powder actuated tool is the holder of a current certificate of competence as a powder actuated tool operator, being a certificate that authorises the employee to operate the kind of tool being operated in the kind of work being carried out.

(2) Nothing in this regulation prevents an employee training to become the holder of a certificate of competence as a powder actuated tool operator from operating, in the course of carrying out construction work a powder actuated tool under the direct supervision of a holder of such a certificate, being a current certificate that authorises the holder to operate the kind of tool being operated by the employee in the kind of work being carried out by the employee.

53. Scaffolder— (1) Every employer shall take all practicable steps to ensure that every employee who, in the course of carrying out construction work, erects, stains, repairs, or dismantles scaffolding is the holder of a current certificate of competence with respect to—

(a) Basic scaffolding, where the scaffolding being erected, maintained, repaired, or dismantled is basic scaffolding; or

(b) Advanced scaffolding, where the scaffolding being erected, maintained, repaired, or dismantled is advanced scaffolding; or

(c) Suspended scaffolding, where the scaffolding being erected, maintained, repaired, or dismantled is suspended scaffolding.

(2) Nothing in this regulation prevents an employee training to become the holder of a certificate of competence as a scaffolder from erecting, maintaining, repairing, or dismantling scaffolding, in the course of carrying out construction work, under the direct supervision of the holder of such a certificate, being a current certificate that authorises the holder to erect, maintain, repair, or dismantle scaffolding of the type that the employee is erecting, maintaining, repairing, or dismantling.

Legislation — Washing facilities

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment; and

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION

4. **Duties in respect of facilities at every place of work**—(l) Every employer shall take all practicable steps to ensure—

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (l) of this regulation are—

.....

(b) Hand-washing facilities:

.....

5. **Duties in respect of facilities at certain places of work**—(1) Every employer shall take all practicable steps to ensure—

(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (l) of this regulation are,—

(a) Where the work is of such a nature that employees are reasonably likely to need facilities for washing the body, such facilities:

1.1 Washing facilities

There should be provided for the use of the persons employed on the construction work adequate and suitable facilities for washing.

The facilities should include hot water and suitable cleansing agents in any of the following cases:

- Where workers are exposed to skin contamination from poisonous, infectious, irritating, or sensitising substances;
- Where workers are handling materials that are difficult to wash from the skin with cold water;
- Where workers are performing work in offensive trades;
- Where workers have to clean the whole body; or
- Where, due to any of the circumstances mentioned above or where, because a worker has suffered prolonged exposure to excessive heat or cold or is employed for prolonged periods in unusually wet conditions, it is necessary for the worker to cleanse the whole of the body, an adequate number of showers should be provided.

1.2 Toilets

Suitable and sufficient conveniences complying with Acceptable Solution G1/AS1 of the Building Code are to be provided for the exclusive use of the males engaged or employed in about the place of work, and for the exclusive use of the females so employed in or about a place of work.

Where there are more than 15 employees the minimum requirements are:

- One urinal where 15 males are employed, plus one urinal for each 30 males or part thereof; and
- One water closet where 15 or less employees are employed, plus closets for each 30 employees or part thereof.

Where females are engaged or employed, there should be suitable provision for the disposal of sanitary towels.

Where conveniences for each sex are provided they shall be separated by walls of full height. They should be readily accessible, well-lit and ventilated, and protected from the weather. If situated outside, good footpath access with lighting should be provided. They should be constructed and situated in such a way as to ensure privacy for persons using them, and built of materials that can be easily cleaned.

Employers may provide for the use of employees, one toilet if:

• The maximum number of persons of either sex, engaged or employed at any one time is fewer than 10.

• It is completely enclosed, to ensure privacy;

• It has an inside lock; and

• Provision is made for the disposal of sanitary towels; and

• It does not contain a urinal.

Where circumstances warrant, an employer may arrange to share facilities with other employers.

Any toilets provided by an employer that are open to or available for use by members of the public should not be taken into account for the purpose of determining whether sufficient conveniences have been provided.

Legislation — Toilets

REGULATION

4. **Duties in respect of facilities at every place of work**—(1) Every employer shall take all practicable steps to ensure—

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (l) of this regulation are—

(a) Toilets:

(b) Hand-washing facilities:

.....

1.3 Drinking water

An adequate supply of wholesome drinking water should be provided to all persons on the construction work in accordance with the following conditions:

• It should be readily accessible to all persons engaged in the work and clearly labelled as drinking water.

• A common drinking container should not be used.

• If it is stored in a container, the container:

  — should be clean and protected from contamination and from heat; and

  — should be emptied and refilled daily from a wholesome source.

(Refer to the Ministry of Health standard for drinking water.)

Legislation — Drinking water

REGULATION

8. **Duty in respect of drinking water—** Every employer shall take all practicable steps to ensure—

(a) That drinking water is provided for employees at every place of work under the control of that employer; and

(b) That any such drinking water is wholesome; and

(c) That the amount of any such drinking water is sufficient, having regard to the number of employees in the place of work and the nature of the place of work; and

(d) That all employees have access to any such drinking water in a way that is convenient to them.

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1.4 First-aid facilities

Every employer is required to provide adequate first-aid facilities, appliances and requisites. Normally, first-aid is to prevent the condition of the injured person from becoming worse until more skilled help becomes available.

It is essential to the success of first-aid treatment that it should be immediately available. The longer a wound, even a very small one, is left untreated the greater the risk of infection. The first treatment of any injury is probably the most important item in the rehabilitation of an injured person, thus it is important that first-aid boxes or cabinets be reasonably available to every employee.

Legislation — First-aid facilities

REGULATION

4. **Duties in respect of facilities at every place of work**—(l) Every employer shall take all practicable steps to ensure—

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such

facilities in a way that is convenient to them.
(2) The facilities referred to in subclause (l) of this regulation are—
.....
(d) First-aid facilities:
.....

Regulation 7 describes tests for suitability and sufficiency of facilities. It is reproduced in section 1.9.

First-aid kits should be kept in construction vehicles as well as on site.

Each employer should have a suitably trained person to administer first-aid treatment. Lack of knowledge or inappropriate treatment could lead to more harm to the patient.

In determining whether any such facilities, appliances and requisites are adequate, due regard should be given to:

- the type of construction work;
- the duration of the work;
- the number of persons employed; and
- the proximity to first-aid and ambulance services.

Legislation — Accommodation for clothes and meals

REGULATION

4 (2) The facilities referred to in subclause (1) of this regulation are—
.....
(k) Facilities for employees to have meals during work hours in reasonable shelter and comfort, being facilities that are separate from any plant or materials used in the place of work and that are protected from any atmospheric contaminants, dirt, noise, or any other hazard produced by any work process.

5. **Duties in respect of facilities at certain places of work**—(1) Every employer shall take all practicable steps to ensure—
(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and
(b) That any such facilities are suitable for the purpose for which they are to be used; and
(c) That any such facilities are provided in sufficient numbers; and
(d) That any such facilities are maintained in good order and condition; and
(e) That all employees have access to any such facilities in a way that is convenient to them.
(2) The facilities referred to in subclause (l) of this regulation are,—
.....
(b) Where the work is of such a nature that employees' clothing is reasonably likely to become contaminated or wet, a place in which to change clothes:
(c) Where the work is of such a nature that it is reasonably likely that employees will bring to the place of work clothes that will not be used at work, facilities for keeping such clothes clean and dry:

1.5 Accommodation for clothes and meals

Adequate accommodation should be provided in which employees may take their meals, spend their rest periods, and shelter from bad weather.

Any such accommodation should have a suitable floor, be furnished with suitable seats and tables, and other furniture and equipment as to ensure that meals may be taken with reasonable comfort and security from the weather.

A suitable receptacle with a tightly fitting cover should be provided for rubbish, and it should be emptied and cleaned at suitable intervals.

Provision should made for boiling water at mealtimes and rest periods.

A suitable changing room should be provided for persons employed in the work, and adequate and suitable accommodation provided for clothing not worn during working hours.

Where employees are normally subject to wet conditions while at work, a means of drying clothes should be provided.

1.6 Lighting

Poor light can be a major contributor to accidents, and employers must ensure that adequate lighting is provided. Generally, natural light is preferred, but where this is not practicable, suitable and sufficient artificial lighting must be provided.

Lighting should be provided over the entire place of work — including amenity rooms, passages, stairs, ramps, ladders and gangways, which all should be capable of being lit at such times as people pass along them or use them.

People passing need not be employees, and may include other persons lawfully in the vicinity.

Adequate local lighting needs to be provided for detailed work, for dangerous processes, or where machinery is being used.

Adequate emergency lighting should also be provided.

Legislation — Lighting

REGULATION

4 (2) The facilities referred to in subclause (1) of this regulation are—

.....

(e) Facilities for lighting for the purposes of enabling employees to perform their work safely and to move safely about the place of work:

1.7 Maintenance of facilities

Every employer should ensure that facilities provided are properly maintained, in a clean and hygienic condition, and conveniently accessible to employees.

Legislation — Maintenance of facilities

REGULATION

4. **Duties in respect of facilities at every place of work**— (1) Every employer shall take all practicable steps to ensure—

.....

(d) That any such facilities are maintained in good order and condition;

.....

5. **Duties in respect of facilities at certain places of work**—(1) Every employer shall take all practicable steps to ensure—

.....

(d) That any such facilities are maintained in good order and condition;

.....

9. **Duty in respect of cleanliness of place of work—**Every employer shall take all practicable steps to ensure that every place of work under the control of that employer is kept in a clean and hygienic state.

1.8 Ventilation

All work sites should have an adequate supply of fresh air. This is not normally a problem on construction work where it is carried on outdoors. However, there are occasions when a supplementary supply of air has to be provided to ensure safe working conditions.

Excessively dusty conditions, such as concrete cutting or grinding, the use of volatile chemicals, such as adhesives, or sand blasting are examples of when extra ventilation will be necessary. This can be supplied by portable extraction equipment.

Where this is not practicable, workers should be supplied with personal protective equipment such as respirators and suitable eye protection.

Care must be taken when using extraction equipment to ensure that hazardous fumes are not vented into other work areas or sources of ignition.

In some situations it may be appropriate to provide portable extraction equipment and personal protective equipment, and ensure it is worn by employees.

Legislation — Ventilation

REGULATION

4 (2) The facilities referred to in subclause (1) of this regulation are—

.....

(f) Ventilation providing either fresh or purified air:

.....

j) Facilities for treating or carrying off any atmospheric contaminants for the purpose of minimising the likelihood that any atmospheric contaminants will be a cause or source of harm to any employee:

Legislation — Site facilities

REGULATION

7. **Tests for suitability and sufficiency of facilities**—(1) The suitability of any facilities provided in accordance with regulations 4 to 6 of these regulations shall be determined having regard to—

(a) The purpose for which the facilities are provided; and

(b) The circumstances in which the facilities are provided.

(2) The sufficiency of the numbers of any facilities provided in accordance with regulations 4 to 6 of these regulations shall be determined having regard to—

(a) The number of employees in the place of work; and

(b) The needs of employees in the place of work; and

(c) The nature of the place of work; and

(d) The nature of any particular hazard in the place of work; and

(e) The type or types of work being carried out in the place of work; and

Whether or not the work is always carried out at the same place of work.

1.9 Site facilities for works of short duration

Where completing works of short duration — such as sewerage, water supply, road maintenance, electric line maintenance, or similar works of normally short duration — work may be based from a central depot with facilities to meet the regulations. In addition, there should be the following minimum site provisions:

• Water storage and hand washing facilities;

• Either a vehicle that may be freely used for transport to suitable toilet facilities within reasonable travelling time (10 minutes), or toilet accommodation such as a proprietary unit or well maintained pit privy;

• A first aid kit on site; and

• Cover for shelter and meal purposes — This may be the transport vehicle, providing the area is not also used as a tool or material store.
A caravan fitted with seating, a table and with water heating facilities would be ideal. However, a vermin-proof shed, preferably lined, and with similar facilities would suffice.

Such accommodation should be used exclusively for shelter and meal purposes and not for storing tools or materials.

The facilities should be adequate to cater for the maximum number employed on site.

Where more than one employer is engaged on the site suitable arrangements can be made between employers to share facilities or transport, providing the employees are consulted.

FURTHER INFORMATION

Standards

N Z Building Code and approved documents

Part 1, section G1 — *Personal hygiene*

NZS 6703:1984 *Code of practice for interior lighting and design*

Drinking Water Standards for New Zealand 1995; Ministry of Health

OSH publications

OSH Handbook for health and safety inspectors

Planning the Workplace

LEGISLATION - Working at heights over 3m

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

REGULATION

Duty in Relation to Heights at Some Workplaces

21. **Heights of more than 3 metres**—(1) In this regulation, the term "employer" does not include any employer who employs any employee to carry out any agricultural work in a place of work under the control of that employer.

(2) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

(a) Means are provided to prevent the employee from falling; and

(b) Any means so provided are suitable for the purpose for which they are to be used.

.

2.1 Working at heights over 3 metres

The first and essential step in ensuring that work is done safely is to ensure that it is practicable for the work to be carried out safely.

Planning

Those engaged in the architectural and engineering design of buildings, structures, and roofs should consider the effects that their designs may have on the safety of people who will undertake the work and work practices necessary to carry out the work.

Safe work practices may include one or more of the following:

- Guarding;
- Safety nets; or
- Fall arrest systems.

2.2 Perimeter of working platforms or places of work

Where a danger exists of any person or any materials or any other things falling from the platform or place of work. Consideration should be given to how far a person or any materials or other things might fall.

No account should be taken of any structure or thing temporarily placed below the working platform or working place unless it constitutes a safe means of arresting the fall of the person or materials.

Guardrails should be erected along the exposed edge of the working platform or working place in accordance with the requirements of section 2.3 following.

Where the working platform or working place is situated above a public thoroughfare and a danger exists of materials or other things falling from the platform or place on to persons using the thoroughfare, then unless the area below the platform or working place is barricaded off to prevent public access, screens or projecting platforms should be erected.

LEGISLATION - Guardrails/ toeboards

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

2.3 Guardrails/ toeboards

Where protection is required at the perimeter of the building or openings in roofs, floors or lift shaft, and is provided by a guardrail system, the guardrail should:

- Be 900-1100 mm above the working place;
- Incorporate a mid-rail; and

• Include the installation of a toeboard where there is a risk of tools or materials falling from the roof/place of work.

2.4 Safety nets

Safety nets can provide a satisfactory means of protection against falling, while allowing workers maximum flexibility of movement.

In considering the use of safety nets as a fall protection measure, employers may take into account the usefulness of safety nets for the safety of persons in other occupations involved with the roof structure.

Workers installing the nets should be protected from falling. Ideally a mobile work platform (cherry picker, scissors lift) should be used, but where such mechanical access is not possible, the workers should have the protection of scaffolding or a safety harness and line.

Nets should be hung as close as possible to the underside of the work area.

Nets should be installed with sufficient clearance to prevent contact with the surface below when a person falls on them.

2.5 Individual fall arrest systems

LEGISLATION - Individual fall arrest systems

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

Individual fall arrest systems include inertia reel systems, safety harnesses, lanyards and static lines. People required to use this equipment must be trained in its use.

Waist type belts should not be used for roof work.

People using safety harnesses should not work alone. It is important that the rescue of a worker who is suspended in a full body harness should occur within 20 minutes of the arrested fall.

Provision must be made for anchorage points for static lines, inertia reel lines, and/or safety nets as appropriate.

Inertia reel systems

Inertia reel systems can be used to prevent falls where workers are required to carry out their work near an unprotected edge.

When considering the use of inertia reels, users should bear in mind that they may be less effective for certain applications, e.g. in arresting a person falling down the inclined surface of a pitched roof.

Inertia reels are not designed for continuous support but become effective in the event of a fall. They should not therefore be used as working supports by locking the system and allowing it to support the user during normal work.

Safety harnesses

Safety harnesses can be used as travel restriction systems to prevent workers moving from safe to unsafe areas on the roof or work platform.

Fall arrest systems should be designed so that when preventing a fall, the maximum distance a person equipped with a parachute safety harness would fall is within 1.5 metres.

Full body harnesses of the parachute type, connected to the lanyard or lifeline at the top dorsal position, should be worn.

Individual fall arrest systems and safety harnesses should only be used with individual manufacturer's components known to be compatible.

LEGISLATION - Working on roofs

ACT

6. **Employers to ensure safety of employees**—Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

REGULATION

Duty in Relation to Heights at Some Workplaces

21. **Heights of more than 3 metres**—(1) In this regulation, the term "employer" does not include any employer who employs any employee to carry out any agricultural work in a place of work under the control of that employer.

(2) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

(a) Means are provided to prevent the employee from falling; and

(b) Any means so provided are suitable for the purpose for which they are to be used.

.

2.6 Working on roofs

Roof work should only be undertaken by persons who have the knowledge, experience and resources necessary for the work to be completed in safety.

Knowledge and experience are necessary before the work is taken on, as the person responsible for the work must consider what hazards are involved and how they can be overcome. In the planning and execution of the job, a safe system of work must be established, taking into account the type of equipment necessary, the experience of the workmen involved and the instruction and supervision required.

Even if the work will be of short duration, it is still necessary to identify the hazards and arrange appropriate safeguards. Where roof work is being carried out in circumstances where persons are liable to fall from the roof, precautions shall be taken either to prevent persons falling or, if this is impracticable, to prevent the fall from being the cause of serious injury.

In particular, when working on a roof the following points should be considered:

- The provision of anchorage points for static lines, inertia reel lines, and/or safety nets is appropriate.
- The roof structure is accessible for the installation of safety nets, anchorage points and static lines.
- Guardrailing or guardrail attachments are incorporated in the perimeter structure, especially prior to erection.
- The ground or floor below the roof area, including the perimeter, is prepared to provide a firm and level support for mobile equipment prior to the commencement of roofing operations.
- There is permanent access to the roof for maintenance and repair.

• The amount of work at height should be reduced as much as is practicable — for example, the use of sections pre-assembled on the ground and the installation of guard railing to perimeter structural members prior to hoisting.

• Protection against falling at the perimeter of the building can be effectively provided by the use of scaffolding and/or perimeter guard-rails.

Scaffolding, any part of which is 5 metres or more above the ground, shall be erected, altered or dismantled under the direct supervision of a certificated scaffolder. (See section 2.10.)

Mobile and tower frame scaffolds can be used to provide a safe working platform while installing safety mesh, including the stapling of overlaps where purlin spacing is excessive.

Where a perimeter scaffold is erected, the platform height should be as close as possible to the working edge and the gutter or facia level, and have rigid guard rails at a height of 900-1100mm above the gutter or fascia level.

2.7 Brittle roofs

LEGISLATION - Brittle roofs

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

Where not specifically identified as metal and in sound condition, roofs should be assumed to be covered with a brittle or fragile material and suitable precautions should be adopted.

Where a roof or part of a roof comprises fragile or brittle material the owner or occupier of the building should provide and maintain a warning sign at any place where persons can gain access to the roof.

Where it is necessary for maintenance to be carried out on a roof containing brittle materials, the employer or self-employed person required to carry out the work should:

• Inspect the underside of the roof to determine the extent of brittle roof material, existence of any safety mesh or sarking, and the structural soundness of the roof and any safety mesh;

• Provide temporary walkways where any person is required to work on the roof or use it as a means of access. (These walkways should be at least 450 mm in width, and should incorporate a guardrail. Where the slope of the roof exceeds one vertical unit of measure to six horizontal, timber cleats of not less that 500 mm by 12 mm should be fixed to the top side of the walkway planks at distances not more than 350 mm apart, centre-to-centre. The walkways should be adequately secured);

• Provide temporary roof ladders of sufficient strength where any person is required to carry out work on or adjacent to any part of a sloping roof sheathed in brittle material;

• Provide individual fall arrest systems, including anchorages for any person to work on or

adjacent to any brittle roof sheathing, including work from roof ladders; and

• Provide training and instruction — in appropriate languages — and supervision to ensure the risk of falling is eliminated by the correct use of fall protection equipment provided.

FURTHER INFORMATION

Standards

BS 3913:1982/1989 *Specification for industrial safety nets*

BS 8093 *Code of practice for the use of safety nets, containment nets and sheets in constructional works*

AS 1891:1983 *Industrial safety belts and harnesses*

AS 1891.3:1992 *Industrial fall-arrest systems and devices*

NZ Building Code and approved documents

OSH publications

Approved Code of Practice for the Safe Erection and Use of Scaffolding

LEGISLATION - Ladders

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

2.8 Ladders

The use of ladders to gain ready access to work sites as a means of carrying out some work activity is a necessity on construction work. Employers, employees and others required to use ladders should:

• Select the most suitable type of ladder for the work to be carried out.

• Provide or be provided with appropriate training in the use of ladders.

• Restrain ladders at both the top and bottom to prevent accidental displacement.

• Position ladders as close as possible to the work.

• Where a ladder is used to gain access to a working platform, ensure that it extends 1 metre above the working platform.

• Store ladders so as to avoid sagging.

• Keep ladders clean and free from foreign materials.

• Use two people to carry heavy, long ladders.

• Place the feet of single or extension ladders 1/4 of the ladder's working length away from the base structure.

• Use only step ladders with lockable spreader bars on both sides connected to the front and rear stiles.

• Not allow over reaching from any ladder. Where the work cannot be accessed from the ladder's position, the ladder should be moved to allow ease of access within the confines of the ladder.

FURTHER INFORMATION

Standards

NZS 5233:1986 *Specification for portable ladders (other than timber ladders)*

NZS/AS 1657:1985 *Fixed platforms, walkways, stairways and ladders — Design, construction and installation*

NZS 3609:1978 *Specification for timber ladders*

OSH publication

Safe Access

2.9 Abseiling

This is a technique used by a few specialised companies for gaining access to a place of work where other recognised means of access is not appropriate. Access is gained by means of rappelling down a rope fixed to a secure object, using a descent device and ancillary equipment.

People in this field of work should be in good physical condition and have a high standard of training.

Operation

There shall be at least two people on site where the work is carried out.

An effective method of communication shall be set up.

All ropes used should have their own identification and be checked regularly by the user or supervisor before each job.

Protection against fraying should be provided and inspected regularly by the user.

The fixed attachment for the rope is to be checked by a competent person before use.

The safety harness used should allow the user to be supported in a semi-sitting position.

An independent safety line should be attached between the person in the harness and a separate secure point of attachment.

Descent devices and their ancillary equipment should meet the appropriate standard.

Emergency procedures should be set up and discussed with all concerned — prior to the commencement of the operation.

FURTHER INFORMATION

Standards

NZS 5811 - Part 1: 1981 *Specification for industrial safety belts and harnesses*

NZS 5811 - Part 2 : 1981 *Code of practice for the selection, use, and maintenance of safety belts and harnesses*

AS 1891:1983 *Industrial safety belts and harnesses*

AS 1891.3:1992 *Industrial fall-arrest systems and devices*

LEGISLATION - Scaffolding

REGULATIONS.

2. Interpretation—In these regulations, unless the context otherwise requires,—

.....

"Scaffolding"—

(a) Means any advanced scaffolding, basic scaffolding, or suspended scaffolding or any framework or structure, of a temporary nature, used or intended to be used—

(i) For the support or protection of persons carrying out construction work or work connected with construction work, for the purpose of carrying out that work; or

(ii) For the support of materials used in connection with any such work; and

(b) Includes any scaffolding constructed as such and not dismantled, whether or not it is being used as scaffolding; and

(c) Includes any coupling, device, fastening, fitting, or plank used in connection with the construction, erection, or use of scaffolding:

.....

"Advanced scaffolding" includes—

(a) Basic scaffolding:

(b) Suspended scaffolding:

(c) A barrow ramp:

(d) A bracket scaffold for tank work and formwork:

(e) A cantilevered scaffold:

(f) A catch net:

(g) A hoist that is cantilevered from a scaffold, has a load limit not exceeding 250 kilograms, and is used for no purpose other than the support of material:

(h) Hung scaffolding, including scaffolding hung from a chain, tube, or wire rope:

(i) A load platform cantilevered from a scaffold:

(j) A mast climber:

(k) A safety net for public protection:

(l)Scaffolding associated with a perimeter safety screen or shutter:

(m) A sloping platform:

(n) A spurred scaffold:

(o) Tube and coupler scaffolding, including a covered way or gantry made of tube and coupler scaffolding:

.....

"Basic scaffolding" includes—

(a) A fall arrest system:

(b) A free-standing modular scaffolding system:

(c) A gin wheel:

(d) A rope:

(e) A static line:

.....

"Suspended scaffolding" includes—

(a) A boatswain's chair, whether hand-hauled or mechanical:

(b) A swinging stage, whether hand-hauled or mechanical:

.....

2.10 Scaffolding

Scaffolding is used throughout the construction industry to provide workers with a safe temporary working platform.

The requirements for scaffolding can be complex. Only persons who hold a certificate of competency as a scaffolder can erect a scaffolding any part of which is 5 metres or more above the ground.

It is important that a competent person inspect all scaffolding:

- Before it is used;
- At least weekly while it is in use;
- After bad weather or any other occurrence that could affect its stability; and
- After periods where the scaffold has not been used for some time.

The results of inspections should be recorded, including defects that were put right during the inspections. The records should be signed by the person who carried out the inspection.

The person carrying out such inspections should ensure the following requirements are met:

- There is proper access to the scaffold platform.
- All uprights are properly founded and provided with base plates. Where necessary, there should be timber sole plates, or some other means used to prevent slipping and/or sinking.
- The scaffold is secured to the building in enough places to prevent collapse and the ties are strong enough.
- If any ties have been removed since the scaffold was erected, then additional ties or other means of support should be provided to replace them.
- The scaffold is adequately braced to ensure stability.
- Load-bearing fittings are used where required.
- Uprights, ledgers, braces or struts have not been removed.
- Working platforms are fully planked, with the planks free from obvious defects such as knots and arranged to avoid tipping and tripping.
- All planks are securely restrained against movement.
- There are adequate guardrails and toeboards at every side from which a person could fall.
- If the scaffold has been designed and constructed for loading with materials, that these are evenly distributed.

• There are effective barriers or warning notices to stop people using an incomplete scaffold, e.g. one that is not fully planked.

Suspended scaffolding

Suspended scaffolding shall only be erected by a person who holds a certificate of competency for suspended scaffolding.

The following points should be observed when erecting or using suspended scaffolding:

• Hoisting ropes shall be anchored to a secure part of the structure, to outriggers, to specially designed brackets and parapet hooks or directly to counterweights.

• Guard rails, mid rails and toe boards shall be provided on both sides and both ends of suspended scaffolds.

• Every worker on a suspended platform shall wear a safety harness that is secured to a fixed support or to an independent lifeline.

• All suspended platforms shall be fitted with tilt switches which cut off the motors in the event of the platform becoming more than 10° out of level.

•Where suspended scaffolds are above throughfares, adequate and prominent warning notices shall be displayed.

• Where any special danger exists adequate protection of the public should be provided.

• The accumulation of surplus gear or materials on any suspended scaffold is hazardous and should be avoided.

• No persons are allowed to ride on the platform while it is being raised or lowered unless the controls on the platform are individually operated.

• A suspended scaffold register, record of inspection shall be kept on site and available for inspection by persons required to use the scaffold.

FURTHER INFORMATION

OSH publication

Approved Code of Practice for the Safe Erection and Use of Scaffolding

Building Maintenance Units and Powered Swinging Stages — a guide to their design, construction and use

Duty in Relation to Heights at Some Workplaces

21. **Heights of more than 3 metres**—(1) In this regulation, the term "employer ' does not include any employer who employs any employee to carry out any agricultural work in a place of work under the control of that employer.

(2) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

(a) Means are provided to prevent the employee from falling; and

(b) Any means so provided are suitable for the purpose for which they are to be used.

.....

Duty in Relation to Scaffolding in Construction Work

22. **Scaffolding**—(1) In this regulation, the term "employer" means—

(a) Every employer, in relation to every place of work under the control of that employer in which any construction work is carried out; and

(b) Every person who controls a place of work in which any construction work is carried out.

(2) Every employer shall take all practicable steps to ensure that, where any construction work cannot be carried out safely without the use of scaffolding,—

(a) Scaffolding is provided; and

(b) The scaffolding so provided is—

(i) Suitable for the purpose for which it is to be used; and

(ii) Properly constructed of sound material, and

(iii) Constructed with a sufficient reserve of strength having regard to the loads and stresses to which it may be subjected; and

(iv) Sufficient in amount for the purpose for which it is to be used.

.....

Regulations 50 and 53 describe the certification requirements for scaffolders. They are reproduced on page 9 of these guidelines.

LEGISLATION - Electrical supply

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

3.1 Electrical supply

Electricity is almost universally used on construction sites as a power source for a range of machinery and portable tools, as well as lighting and heating is in wide use on construction sites.

Portable electrical appliances shall be used in damp situations only with one of the following safeguards.

- A supply isolated from earth with a voltage between conductors not exceeding 230 volts;
- A monitored earth circuit where the supply to the appliance is automatically disconnected in the event of the earth to the appliance being broken or disconnected,
- The appliance is double insulated;
- A source connected to earth in such a way that the voltage to earth will not exceed 55 volts AC; or
- A residual current device.

LEGISLATION - Supply switchboards

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

3.2 Temporary supply switchboards

All supply switchboards used on building and construction sites should be of substantial construction and should:

- Where installed in outdoor locations, be so constructed that safe operation is not impaired by the weather;
- Incorporate a stand for the support of cables and flexible extension cords;
- Be provided with a door and locking facility acceptable to the electrical supply authority. Doors should be designed and attached in a manner that will not damage any flexible cord connected to the board and should protect the switches from mechanical damage.

The door should be provided with a sign stating "KEEP CLOSED — LEADS THROUGH BOTTOM".

- Have an insulated slot in the bottom for the passage of leads.
- Be attached to a permanent wall or suitable structure which has been designed for the purpose.
- Where pole or post mounted, be fixed by means of coach screws or bolts.

3.3 Inspection of equipment

All electrical tools and equipment should be inspected prior to their first use and thereafter at least at 3-monthly intervals.

All tools and equipment should have an identification tag stating the date of last inspection and when the next is due.

LEGISLATION - Inspection of equipment

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

3.4 Clearance from power lines

No part of a crane, digger, excavator, drill rig, or other mechanical plant, structure or scaffold may be brought closer than 4 m to an overhead line without the written consent of the power line owner.

LEGISLATION - Clearance from power lines

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

FURTHER INFORMATION

Building Authority or your local authority for information about the Building Act 1991, Regulations 1992, and approved documents.

Ministry of Commerce, Energy Inspection Group — for information about electrical wiring under the Electricity Act 1992, Electricity Regulations 1993, and electrical codes of practice.

OSH publication

OSH Handbook for health and safety inspectors

LEGISLATION - Personal protective equipment

ACT

10. **Significant hazards to employees to be minimised, and employees to be protected, where dimination and isolation impracticable**—
(1) Where—
(a) There is a significant hazard to employees at work; and
(b) Either—
(i) There are no practicable steps that may be taken to eliminate it; or
(ii) All practicable steps to elirninate it have been taken, but it has not been eliminated; and
(c) Either—
(i) There are no practicable steps that may be taken to isolate it from the employees; or
(ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,—
the employer shall take the steps set out in subsection (2) of this section.
(2) The steps are—
(a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
(b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and
....

REGULATIONS

18. **Woodworking and abrasive grinding machinery**—Where any machinery of a kind listed in column 1 of the First Schedule to these regulations is used in a place of work under the control of any employer, that employer shall take all practicable steps to ensure that the machinery is provided with a protective device or apparatus—
(a) Of the kind or kinds listed, opposite the name of that machinery, in column 2 of that schedule; and
(b) That is suitable for the purpose for which it is to be used.
.....
11. **Noise**—(1) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that no employee is exposed to noise above the following levels:
(a) A noise exposure level, $L_{Aeq,8h}$, of 85 dB(A); and
(b) A peak noise level, L_{peak}, of140 dB,—
whether or not the employee is wearing a personal hearing protection device.
(2) For the purposes of subclause (1) of this regulation,—
(a) The noise exposure level,$L_{Aeq,8h}$, is the level of the daily noise exposure normalised to a nominal 8 hour day, in dB(A) referenced to 20 micropascals; that is to say, it is the steady noise level that would, in the course of an eight hour period, cause the same A-frequency-weighted sound energy as that due to the

4.1 Personal protective equipment

Employers are responsible for the provision of personal protective equipment. The following general rules apply to its use:

• All employees and others should be trained in the use of personal protective equipment and made fully aware of the reasons for its use.

• Where it is impracticable to fix overhead protection and there is a risk of injury from falling objects, safety helmets, provided by the employer, shall be worn.

• Adequate eye protection should be worn whenever there is any possibility of eye damage from welding flash, or debris such as concrete or wood chips, or grinding dusts. (It should be noted that several people have lost an eye due to breaking off high-tensile masonry nails by sticking sideways with a hammer, the flying broken nail becoming lodged in the eye in each case.)

• Footwear shall be able to adequately protect the employee's feet having regard to the sort of work being carried out. Usually only steel-capped boots or shoes will do this.

• Hearing protection shall be worn if noise levels are high. (The noise of a portable circular saw or hammer drill exceeds the safe limits at a distance of 0.5 m.) See section 7.1. Noise.

• Gloves may be necessary for some tasks.

• Push sticks are always needed at the saw bench.

• Respiratory protection which is appropriate for the task should be personally provided to all employees exposed to respiratory hazards such as asbestos, chemical fumes and dust.

FURTHER INFORMATION

Standards

NZS 2264:1970, Amendment 2, 1981 *Specification for industrial safety helmets (maximum protection)*

AS/NZS 2210.1: 1994 *Occupational protective footwear — Guide to selection, care and use*

AS/NZS 2210.2: 1994 *Occupational protective footwear — Specification*

AS/NZS 1337:1992 *Eye protectors for industrial applications*

AS 1270:1988 *Acoustics — Hearing protectors*

AS/NZS 1716:1994 *Respiratory protective devices*

AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices*

OSH publications

Guide to Respirators and Breathing Apparatus

Approved Hearing Protection Devices

4.2 Skin hazards

Skin trouble is an issue of concern in the construction industry. It can, apart from causing pain and suffering, impede employees' ability to work or even lead to their being unable to continue working.

Many substances used in the workplace may induce skin disorders by either irritant or allergic reactions.

The most common skin reaction is **contact dermatitis**. It occurs at the site of contact — usually the hands or arms. It causes redness, swelling, crusting and scaling.

Non-allergic irritant reaction can occur through contact with some products such as detergents, solvents, or fibreglass insulation. Allergic contact dermatitis is caused by contact between sensitised individuals and contact allergens. Irritants and allergens cause itching as a primary symptom.

Skin cancer is a much rarer effect that can result from long-term exposure to tar and pitch.

Effects from exposure to ultraviolet rays can be reduced through the use of proprietary sun screens, hats and sun glasses and appropriate clothing.

Some substances which may cause skin problems in the construction industry include:

- Wet cement.
- Dry cement.
- Tar and pitch.
- Mineral oils in cement castings and brick making.
- Paint thinners.
- Acids for masonry cleaning.
- Synthetic mineral fibres.
- Chromate metal primers.
- Epoxy and acrylic resin hardeners.
- Bonding agents and sealers.
- Exposure to ultra-violet radiation.

Employees should be encouraged to report any skin trouble, particularly on the hands, and consult a doctor or nurse early.

Early advice gives the best chance of recovery. Longstanding cement dermatitis can be difficult to eliminate.

actual noise over the actual working day; and

(b) The peak noise level, L[Inf peak], is the highest frequency-unweighted peak sound pressure level in the place of work in decibels referenced to 20 micropascals, measured using sound measuring equipment with "P" time-weighting, as specified in the Australian Standard numbered AS 1259.1-1990 and entitled "Sound level meters Part 1: Non-integrating"; and

(c) The levels of noise referred to in subclause (1) of this regulation shall be measured and assessed in accordance with the Australian Standard numbered AS 1269-1989 and entitled "Acoustics— Hearing conservation".

(3) Where an employer has taken all practicable steps to ensure that no employee at any place of work under the control of that employer is exposed to noise above the levels specified in subclause (1) of this regulation but has not eliminated the risk that any employee may be exposed to noise above those levels, the employer shall communicate clearly, by way of signs, labelling of machinery, or other appropriate means—

(a) The fact that noise levels at the place of work are or are likely to be hazardous; and

(b) The sort of personal hearing protection device that is suitable to protect against the noise levels; and

(c) Where such a device may be obtained.

Regulations 68 and 69 impose duties on designers, manufacturers and suppliers of protective clothing and protective equipment. These are reproduced in section 7.8 of these guidelines.

LEGISLATION - Skin hazards

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

Avoiding exposure

A range of measures are available to reduce the risk of skin contact when working with hazardous substances. These include the use of barrier creams on the hands, or wearing gloves, long-sleeved shirts, full-length trousers and boots. Any gloves used should offer suitable protection for the substance being handled.

The risk of contact dermatitis increases with the time the hazardous substance remains in contact with the skin. Employees should therefore be required to wash any substance off the skin as soon as possible after contact has occurred.

These precautions will also help to prevent cement burns, see below.

Cement

The effects of freshly mixed concrete on the skin are well known as a cause of some occupational skin disease. Under certain conditions freshly mixed concrete or mortar can cause ulceration of the skin (cement burn), but this is rare.

Any special health precautions which are recommended by the manufacturer of the cement or related materials should be followed.

Employees' skin and eyes both need to be protected from contact with cement.

Contact should be avoided as much as possible. The use of a barrier cream may give some protection if contact is kept to a minimum.

Protective clothing should be worn where appropriate. This should include long sleeves, full length trousers, gloves, and suitable footwear.

There should be facilities for washing the body and changing clothes, in accordance with part 1 of these guidelines.

If cement dust or mixture gets into the eyes, they should be washed out immediately with cold water. If the irritation persists, medical attention should be sought.

Respiratory protective equipment should be worn during treatment of hardened concrete where dust is created.

4.3 Safe use of chemicals

Many different chemicals and hazardous substances are used in construction work. It is essential that effective control measures and policies are developed and implemented to ensure that the chemicals or substances are used safely.

These measures should include policy on:

- Safe handling of chemicals or hazardous substances;

- Correct storage procedures to be adopted;
- Safe transportation procedures; and
- Safe disposal procedures.

The safe handling of chemicals should be aimed at eliminating or minimising risk to employees or others, and will involve reading labels and Material Safety Data Sheets (MSDS) and complying with instructions.

All chemicals should be stored in their original containers in a safe, well ventilated, secure place and in accordance with directions on their labels and MSDS.

If chemicals are transported, regulatory requirements shall be observed in respect to documentation, compatibilities and load security.

All employees should be trained in the correct practices to be followed when using chemicals and hazardous substances, and how to deal with emergencies that may arise while using any substance.

FURTHER INFORMATION

Dangerous Goods (Class 2- Gases) Regulations 1980
Dangerous Goods (Class 3- Flammable Liquids) Regulations 1985
Dangerous Goods (Class 4- Flammable Solids or Substances and Class 5 Oxidising Substances) Regulations 1985

Standard

Code of Practice in the Use of Chemicals at Work, International Labour Office

4.4 Explosives (blasting)

Where explosives are used on construction work, the operation shall be supervised by a certificated construction blaster who has been trained to prepare, lay and initiate the explosives.

The certificated construction blaster is to be responsible for:

- The selection of explosives, detonators and fuses;
- The handling and storage of explosives;
- The layout of the blast, its charging and stemming;
- The proper testing of circuits;
- Preventing the scatter of debris, and avoiding risks to persons and property;
- Dealing with misfires and the disposal of surplus explosives; and
- Minimising the environmental effects of blasting, e.g. dust, noise and ground vibration.

LEGISLATION - Explosives (blasting)

ACT.

Duties of Employers in relation to Training and Supervision

13. **Training and supervision**—Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work—

a) Either—

(i) Has; or

(ii) Is so supervised, by a person who has such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and

(b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

.....

REGULATION.

Regulations 50 and 51 describe the requirements for the certification of construction blasters. They are reproduced on page 9 of these guidelines.

Storage of explosives

Detonators and explosives shall be kept in separate licensed explosives magazines. Only sufficient quantities for daily use shall be taken from the magazine to the site.

On site explosives shall be kept separate, secure, protected from the weather, and a safe distance from vehicular or pedestrian traffic and from mechanical, physical and electrical hazards.

Access control

All access points leading to the area where the construction blasting works are to be carried out shall be manned to prevent entry during the blast. If through traffic is involved, display warning signs and provide traffic control, including physical barriers where necessary.

An agreed warning signal shall be given before the blast is fired. After the blast, an all clear signal should be given when the construction blaster has determined that the area is safe.

FURTHER INFORMATION

Explosives Act 1957 and Explosives Regulations 1959

Handbook for Temporary Traffic Control and Safety at Roadworks Sites, Transit New Zealand

LEGISLATION - Asbestos

REGULATIONS

2. **Interpretation**— In these regulations, unless the context otherwise requires,—

.....

"Notifiable work" means—

(a) Any restricted work, as that term is defined in regulation 2 (1) of the Asbestos Regulations 1983:

.....

Regulation 26 contains notification requirements. It is reproduced on page 7 of these guidelines.

4.5 Asbestos

The inhalation of asbestos dust may result in serious lung disease. Most work involving asbestos (removal), except that using hand tools on asbestos cement products, is classified as "restricted work involving asbestos" by the Asbestos Regulations 1983. Such work is required to be notified to OSH, and shall only be carried out under the direct supervision of a person holding a certificate of competency, for restricted work with asbestos.

All persons involved in the work shall wear either disposable overalls or washable overalls. Respiratory protection is to be worn — usually a positive pressure face mask that provides filtered air to the mask at pressure.

Recommended practice is to have the area where asbestos is being worked screened by impervious sheeting and have air pressure in the enclosure reduced, to stop the escape of dust.

Air tests may be required prior to reoccupation of the area.

FURTHER INFORMATION

Asbestos Regulations 1983

Standards

AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices*

AS/ NZS 1716:1994 *Respiratory protective devices*

OSH publications

Guide to Respirators and Breathing Apparatus

Guidelines for the Management and Removal of Asbestos

4.6 Flame cutting and welding with compressed gases

LEGISLATION - Flame cutting and welding with compressed gases

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

Main hazards

Provision should be made to guard against the following potential hazards:

• Fires caused by leakage of fuel (propane, acetylene) usually from damaged or badly joined sections of hose.

• Cylinder explosions caused by accidental leakage of oxygen from hoses or cutting torches.

• Operators may release oxygen deliberately to try to clear fumes from the air, with the effect that it creates a situation where — with too much oxygen in the air — just one spark may set clothing alight. Oily or greasy clothes may also catch fire spontaneously.

• Flashback caused by the operator trying to light the cutting torch when there is a mixture of oxygen and fuel gas in one hose.

• Explosions or fires caused by flame cutting or welding drums, or tanks, that contain flammable materials even in small amounts.

• Breathing in dangerous fumes during cutting or welding operations.

• Nearby flammable material catching fire.

Handling cylinders

Cylinders should never be rolled along the ground or handled roughly. Wherever possible, a cylinder trolley should be used, with the cylinders attached by chains.

Cylinders should never be placed in a free-standing position. All practicable steps should be taken to temporarily secure cylinders to a secure point.

Cylinders should have time to settle after being brought to a standing position before being used.

Storage

All hoses and cutting accessories should be removed at the completion of any work and stored away from cylinders.

Cylinders should be stored in an upright position away from other flammable substances and sources of ignition.

Equipment

Only hoses that meet the appropriate standard should be used. They should be checked every day for signs of damage.

The hose length should be kept as short as possible. If lengths of hose have to be joined following the removal of damaged sections, only proper hose couplers and proprietary hose clamps should be used. Makeshift couplers made from pipe and twisted wire are unsuitable. Proper couplers should be used to connect the hose to the cylinder regulator.

Soapy water should be use to check cylinders and hoses for leaks. If a leak is found and it cannot be stopped, the cylinder should be removed to a safe place in the open air and the supplier contacted for advice.

Flash-back arrestors should be fitted to each hose.

Oil and grease should be kept away from oxygen cylinders hoses and work clothes, oxygen build-up can lead to sudden, fierce fires.

Lighting up procedure

The manufacturer's recommended procedures should be followed when purging hoses (to reduce the risk of flashback). The area needs to be well ventilated.

Cutting drums and tanks

Drums, tanks, etc. shall not be welded or cut without special safety precautions. If they contain even a small amount of petrol, solvent, oil or other flammable liquid, sludge or solid, they may explode.

To avoid this danger such containers need to be thoroughly cleaned and tested before any hot cutting or welding is carried out.

Alternatively, the container may be completely filled with water and the top removed.

Fumes

A significant health problem that can arise from welding is lead poisoning caused by flame cutting steel coated with lead-based paint. Welders and gas cutters can suffer metal fume fever through working with plated metal. Cadmium and zinc-plated materials are especially dangerous.

Nitrous fumes produced during all welding and cutting operations can build up quickly in poorly ventilated areas such as excavations, pits small basements and tanks.

Forced ventilation is essential in these situations. All employees who carry out welding or cutting where there is a risk of breathing dangerous fumes will need to wear appropriate respiratory protection.

Fire fighting and protective equipment

Flammable materials shall be removed from the work area and suitable fire fighting equipment provided.

Employees should wear suitable eye protection and protective clothing to protect against burns.

4.7 Lead

Up until 1965, many paints used on New Zealand buildings had high lead levels. This was particularly true of pre-1945 paints. Even if a building has been recently painted, it may have been painted with lead-based paints or have layers of old paint covered by modern paint. Today, only special purpose paints contain lead and these are clearly labelled.

If a building is over 25 years old, it is best to assume that it has been painted with lead-based paints.

The removal of lead-based paint can result in harm to both the person doing the work and the people who live or work nearby. Untreated lead poisoning can lead to brain damage or even death.

Removing lead-based paints

If the paint is being removed from outside a building, all windows and doors should be closed to prevent contamination inside.

Children and animals should be kept away from the work area.

Workers should wash their faces and hands carefully before eating or smoking and change out of contaminated overalls (especially if dry sanding).

A hat or hair covering should be worn to prevent dust accumulating in the hair, particularly when dry sanding.

A good quality, properly fitted, toxic dust respirator should be worn when sanding, making dust or burning off lead-based paints.

Smoking should not be allowed while removing paint. The hand-to-mouth contact may increase the risk of eating or inhaling lead paint dust.

Collection and disposal of debris

All paint debris should be collected on a ground sheet large enough to contain all the material. If working on a scaffold, a sheet should be tied underneath to catch falling paint. If removing paint by water blasting, all flakes of paint should be collected from the surrounding area.

The area around the groundsheet should be cleaned with a vacuum cleaner to collect any paint debris and the contents disposed of immediately. After sanding, all surfaces need to be wiped to remove dust and then vacuumed using a commercial vacuum cleaner fitted with a dust filter.

LEGISLATION - Lead

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

All paint debris should be securely wrapped and disposed of at a rubbish tip. Debris should not be burnt.

FURTHER INFORMATION

Standard

NZS/AS 1716:1994 *Respiratory protective devices*

OSH publication

Guidelines for the Management of Lead-based Paint

LEGISLATION - Power tools

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

REGULATIONS

17. **Cleaning, maintenance, or repair of machinery**—(1) Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where the cleaning, maintenance, or repair of any machinery while the whole or a part of the machinery is moving may cause harm to any employee, the machinery is not cleaned, maintained, or repaired—

(a) Until every part of the machinery, including any extension or attachment, has been secured against movement, including inadvertent movement; and

(b) Until every control device has been secured in the inoperative position by the use of locks or lock-out procedures or other equally effective means.

(2) Every employer shall take all practicable steps to ensure, in relation to any machinery to which subclause (1) of this regulation applies, that, where it is essential to the process that the machinery performs, or to the procedure for cleaning, maintaining, or repairing the machinery, that the whole or a part of the machinery remains in motion during cleaning, maintenance, or repair,—

(a) A procedure is established for the carrying out of the cleaning, maintenance, or repair in a safe manner; and

(b) The procedure contains at least the following features:

(i) No employee who has not been adequately trained for the purpose shall carry out the cleaning, maintenance, or repair:

(ii) Where it is essential that a part of the machinery remains moving, only that part shall be set in motion; and

(c) The procedure is followed on every occasion to which it applies.

.....

55. **Injurious tasks**—Every employer shall take all practicable steps to ensure that no employee under the age of 15 years is required to lift any weight or to perform any task at any place of work under the control of that employer, where lifting the weight or performing the task would be likely to be injurious to the employee's health.

.....

56. **Machinery**—Every employer shall take all practicable steps to ensure that no employee under the age of 15 years, at any place of work under the control of that employer,—

(a) Works at or with any machinery; or

(b) Assists with work at or with any machinery.

5.1 Portable mechanically-powered nailers and staplers

The use of mechanically-powered nailers and staplers in place of the traditional carpenter's hammer is labour saving and also overcomes certain health hazards. But other hazards are presented through the use of compressed air, compressed inert gas or electricity as an energy medium at a force capable of penetrating body tissue.

Proper standards and the following of recommended work practices are therefore essential.

Employers are to ensure that the following safety rules are followed by all operators:

- Tools should never be pointed at any person, whether they contain fasteners or not.
- The operating mechanism or work-contacting element should never be depressed unless the nose of the tool is directed on a safe work surface or test material.
- Additional care should always be taken when nailing near the edge of material.
- No volatile or combustible gas is ever to be used to power a pneumatic tool. This includes **never using bottled oxygen**.
- Defective tools are never to be used.
- No operator is to discharge fasteners by bump nailing.
- Eye and hearing protection is appropriate for the tool and is used.

FURTHER INFORMATION

Manufacturers' instructions

5.2 Portable power tools

Power saws, planers, cement mixers, concrete cutting tools, and other power tools shall have proper guards in place at all times. Employers, employees and others required to use power tools are to ensure that:

- Every operator is trained in the use of the tools.
- Only the right tool is used for the job and appropriate work methods are adopted.
- Defective tools are not used until repaired.
- Transmission guards shall be in place.
- Electrical safety devices are used where appropriate.
- Cutting tools are kept sharp.
- Eye and hearing protection is appropriate for the tool and is used.

• Immediate floor areas around machines are kept clear.

• Extension cords are placed in such a manner to prevent damage from equipment or materials.

• Adequate lighting is provided to carry out the work.

FURTHER INFORMATION

Electricity Act 1992

Electricity Regulations 1993 and codes of practice

OSH publications

Guidelines for Guarding Principles and General Safety for Woodworking Machinery

Guidelines for Guarding Principles and General Safety for Machinery

5.3 Personnel/materials hoists

A summary of main requirements of a personnel/materials hoist are set out below.

Erection should be carried out by a suitably qualified person.

Minimum specifications

The hoist may be tower or cantilever.

The hoist should be on proper foundations and tied to the building, or guyed, if necessary.

Access for the operator and maintenance personnel must be safe.

The car must be at least 2 metres high, with sides and doors solid faced or enclosed with mesh of 3 mm diameter wire and a maximum opening of 9 mm. It should be roofed with 18 mm plywood or equivalent, and have a roof trapdoor.

The car door should be at least 2 metres high and have an effective lock. Solid doors are to have vision panels.

The distance from car platform to landing sill should be no more than 50 mm.

Landing gates are to be at least 2 metres high and as strong as guard rails, and not readily detachable. The distance from landing sill to gate is to be 150 mm or less.

Car and landing doors are to have electro-mechanical interlocks that can be released only from the car, that can be opened only when the car is at the landing, and that prevent hoist operation when open.

Towers inside structures should be enclosed by mesh, except at gates.

Hoist towers inside the structure are to be mesh or solid enclosed to at least 2 metres above the sill on sides used for access to and from the structure. At the lowest landing the structure should be enclosed on all sides to at least 3 metres high.

Over-run clearances are to be provided for car and counter-weights.

LEGISLATION - Personnel/ materials hoists

REGULATIONS.

17. **Cleaning, maintenance, or repair of machinery**—(1) Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where the cleaning, maintenance, or repair of any machinery while the whole or a part of the machinery is moving may cause harm to any employee, the machinery is not cleaned, maintained, or repaired—

(a) Until every part of the machinery, including any extension or attachment, has been secured against movement, including inadvertent movement; and

(b) Until every control device has been secured in the inoperative position by the use of locks or lock-out procedures or other equally effective means.

(2) Every employer shall take all practicable steps to ensure, in relation to any machinery to which subclause (1) of this regulation applies, that, where it is essential to the process that the machinery performs, or to the procedure for cleaning, maintaining, or repairing the machinery, that the whole or a part of the machinery remains in motion during cleaning, maintenance, or repair,—

(a) A procedure is established for the carrying out of the cleaning, maintenance, or repair in a safe manner; and

(b) The procedure contains at least the following features:

(i) No employee who has not been adequately trained for the purpose shall carry out the cleaning, maintenance, or repair:

(ii) Where it is essential that a part of the machinery remains moving, only that part shall be set in motion; and

(c) The procedure is followed on every occasion to which it applies.

.....

Regulations 66 and 67 impose duties on designers, manufacturers and sellers of plant. These regulations are reproduced in section 7.7 of these guidelines.

Only positive-drive mechanisms are to be used.

Hoisting is to be controlled from within the car.

All metal parts are effectively earthed.

Safety gear must be fitted to stop and hold the car under free fall and overspeed.

A notice of manufacture, model and load capacity is to be displayed in the car.

Rope size and servicing details are to be displayed on the driving machine.

Provision is to made for emergency operation and the release of persons trapped.

There should be an emergency alarm inside the car (a gong and striker will suffice).

Where possible there should be a communication system between all landings and the hoist car.

Operation of hoists

Where the hoist operator controls the movement of the car at the hoist, protection should be provided above the operating position. This protection should be of appropriate construction and adequate strength to protect the hoist operator from material which could fall from the hoist or building structure. The size of openings of an infill, if used, should be not greater than 50 mm square.

A signalling system should be provided at all landings where the operator does not have a clear, convenient view of all loading and unloading.

The operating controls of the signalling system should be set up at the landing gate giving access to the hoist.

Operators should be qualified and authorised to operate the hoist; and should take all reasonable steps each day to ensure that the hoist is in a safe operating condition.

Dangers from use of hoists

Provision should be made to guard against the following types of falls from a hoistway:

- From a landing level, e.g. a scaffold platform;
- From a hoist platform/cage;
- With the platform/cage because of operator error;
- With the platform/cage when the operating gear fails;
- Being struck by the platform/cage or other moving parts;
- Being hit by materials falling down the hoistway; and
- Being struck by landing levels or parts of the enclosure while riding the hoist.

FURTHER INFORMATION

AS 1417.7:1988 *Material hoists and concrete skip hoists*

BS 4465:1989 *Electric hoists for both passengers and materials*

ANSIA 10.4:1990 *Personnel hoists and employee elevators for construction and demolition operations*

5.4 Cranes and lifting appliances

Cranes and other lifting appliances are valuable assets on construction sites. It is important, however, to pay regular attention to certain aspects of their operation. Employers and employees using cranes and lifting appliances should ensure that:

- Cranes are inspected weekly, and thoroughly examined every 12 months by a competent person. The results of inspections should be recorded.
- There is a current test certificate.
- The driver is trained, competent and over 18 years of age.
- The controls (levers, handles, switches, etc.) are clearly marked.
- The driver and dogman determine the weight of every load before lifting.
- Every jib crane with a capacity of more than 1 tonne has an efficient automatic safe load indicator that is inspected weekly.
- A hydraulic excavator being used as a crane has the maximum safe load clearly marked and hydraulic check valves fitted where required.
- The crane is on a firm level base.
- There is enough space for safe operation.
- The dogman has been trained to give signals and to attach loads correctly and knows the lifting limitations of the crane.
- If it can vary its operating radius, the crane is clearly marked with its safe working loads and corresponding radii.
- The crane is regularly and thoroughly maintained.
- The lifting gear is in good condition and has been thoroughly examined.

FURTHER INFORMATION

Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations (draft)

OSH publication

Approved Code of Practice for Cranes and Lifting Appliances

Other publication

Crane Safety Manual, Power Crane Association

LEGISLATION - Cranes and lifting appliances

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

REGULATIONS.

Duty in Relation to Heights at Some Workplaces

21. **Heights of more than 3 metres** — (1) In this regulation, the term "employer" does not include any employer who employs any employee to carry out any agricultural work in a place of work under the control of that employer.

(2) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

(a) Means are provided to prevent the employee from falling; and

(b) Any means so provided are suitable for the purpose for which they are to be used.

.....

Duties of Employers to Young Persons

.....

56. **Machinery**—Every employer shall take all practicable steps to ensure that no employee under the age of 15 years, at any place of work under the control of that employer,—

(a) Works at or with any machinery; or

(b) Assists with work at or with any machinery.

.....

Regulations 66 and 67 impose duties on designers, manufacturers and sellers of plant. These regulations are reproduced in section 7.7 of these guidelines.

LEGISLATION - Power-operated elevated work platforms

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

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(2) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres,—

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(b) Any means so provided are suitable for the purpose for which they are to be used.

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(a) Works at or with any machinery; or

(b) Assists with work at or with any machinery.

.....

Regulations 66 and 67 impose duties on designers, manufacturers and sellers of plant. These regulations are reproduced in section 7.7 of these guidelines.

5.5 Power-operated elevating work platforms

Elevating work platforms are specialised machines designed to provide safe access to high places of work.

It is important that any machine is used in accordance with the manufacturer's recommendations, and not outside their intended specification.

Uses of elevating work platforms

Machines designed for indoor work should not be used outside, where even moderate wind forces could overload and overturn them.

Where machines are used for supporting equipment for film or television recording, the weight of any electrical cables hanging from the bucket should be included in any load calculations.

Such cables are not to be treated as "jungle vines", and horseplay should be discouraged.

Work platforms are designed for lifting personnel and their hand tools. They are not cranes, and must not be used as such.

Machines must receive proper and thorough maintenance.

Setting up

Before use, the work platform must be set up with stabilisers or outriggers fully extended and levelled as specified by the manufacturer, and any stabilisers actuated. Where necessary, suitable metal or timber spreaders should be used to provide a firm base.

The stated SWL of the work platform assumes that the chassis of the machine is set up on firm ground and has been levelled. A machine may overturn at a lesser load if these conditions are not met.

The parking brake must be applied and the brake lock used where provided.

Where the working area is in a public place, it must be ensured that the work platform can not be hit by other vehicles, and is protected by barricades and warning signs. Pedestrians should not have to walk under the platform and, where necessary, the public excluded from the area by the use of barriers.

Where the work area is close to fixed obstructions, the operator should check that outrigger settings are appropriate for the load to be carried, that clearances are adequate, and that there is no danger of any part of the work platform coming into contact with live electrical conductors or other obstructions.

Operation

The safe working load (SWL) of any machine shall never be exceeded — it could overturn or components could be overstressed.

Machines shall not be positioned over people or employees, or others allowed to go under a working platform unless it is essential to the operation. On these occasions special safety precautions should be followed, and the machine never moved unless the way is clear and will remain clear.

A safety harness attached to the platform should always be worn. The safety belt or harness should meet the requirements of NZS 5811: 1981 or an equivalent standard.

Safety devices, such as pressure relief valves, should not be adjusted or altered except by a competent person.

A platform shall not be used as a prop, tie or crane.

Platforms should never be moved close to overhead electric lines, unless the electrical supply authority has given permission in writing.

If any fault in the control system is suspected, operations should cease until the suspected fault is rectified.

Contact with power lines

If an **uninsulated** work platform comes into contact with live electrical lines or equipment, persons in the personnel bucket **at the time,** should remain there. **The safest course of action is to do nothing until the line is de-energised or help arrives.** Only as a last resort should they attempt to jump clear.

If they decide to jump clear, they should:

• **If it is safe to do so,** operate the controls to break contact;

• Warn all persons to keep clear and call for assistance to de-energise the lines; or

• If contact cannot be broken, and assistance is unavailable, as a last resort leave the platform in the following way:

- Switch off the motor and apply brakes;

- Remove any loose clothing;

- Climb down to a point about a metre above the ground from where it is possible to jump safely to the ground;

- **Jump** so that they clear the platform **before** any part of them touches the ground;

- Fall away from the machine and not towards it;

- **Don't** retouch the machine until the lines are de-energised.

FURTHER INFORMATION

Standards

ANSI/SIA 92.2:1990 *American national standard for vehicle-mounted elevating and rotating aerial devices*

ANSI/SIA 92.3:1990 *American national standard for manually-propelled elevating work platforms*

ANSI/SIA 92.5:1992 *American national standard for boom-supported elevating work platforms*

ANSI/SIA 92.6: 1990 *American national standard for self-propelled elevating work platforms*

BS 7171: 1989 *British standard specification for mobile elevating work platforms*

AS 1418.10:1987 *SAA Crane Code, Part 10 : Elevating work platforms*

OSH publication

Approved Code of Practice for Power-operated Elevating Work Platforms

5.6 Roll-over protective structures for earthmoving machines

Construction plant roll-overs cause the death of an average of three operators each year. A number of other operators are injured.

To reduce the number and severity of these accidents, machines which are prone to roll-over shall be fitted with roll-over protective structures (ROPS) and seat belts.

ROPS shall be designed, fabricated and installed in a manner which will support twice the weight of the machine or its articulated tractor. This should be applied at the point of impact on roll-over without exceeding the ultimate strength of the steel or the theoretical buckling load of any prop or strut.

Identification

In order to allow the identification of ROPS, a permanent label should be attached to the structure. It shall contain the following information:

- The name and address of the manufacturer or fabricator;
- The serial number and the make that the structure is designed to fit; and
- The relevant performance standard with which the structure complies.

Seat belt warning

A notice shall be prominently displayed in every ROPS — warning that a roll-over hazard exists, and the seat belts provided to protect the operator shall be worn.

FURTHER INFORMATION

The Society of Automotive Engineers USA - SAE J1040C, SAE J386

ISO 3471:1986 *Earthmoving machinery rollover protective structures — laboratory test and performance requirements*

AS 2294:1990 *Earthmoving machinery protective structures*

ISO 6683:1981 *Earthmoving machinery — seat belts and seat belt anchorages*

LEGISLATION - Roll-over protective structures for earthmoving machines

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

.....

REGULATIONS.

19. **Application of regulation 20**—(1) Subject to subclauses (2) to (6) of this regulation, regulation 20 of these regulations applies to every self-propelled mobile mechanical plant—

(a) Upon which any employee rides at a place of work under the control of an employer; and

(b) That is provided by that employer.

(2) Regulation 20 of these regulations does not apply to the following:

(a) Any agricultural harvester:

(b) Any bus:

(c) Any car:

(d) Any crane:

(e) Any drag line:

(f) Any fork-lift with a telescopic boom:

(g) Any log hauler:

(h) Any paving machinery:

(i) Any power operated elevated work platform:

(j) Any tractor used in agricultural work:

(k) Any truck:

(l) Any van:

(m) Any machinery that has a mass of 700 kilograms or less:

(n) Any machinery used in a mine, quarry, or tunnel.

(3) Regulation 20 of these regulations does not apply to any self-propelled mobile mechanical plant that has been designed to be used on level ground at all times, if the employer takes all practicable steps to ensure that every employee at every place of work under the control of that employer so uses the self-propelled mobile mechanical plant.

(4) The Secretary may, by certificate in writing, subject to such conditions, if any, as may be specified in the certificate, exempt from any or all of the provisions of regulation 20 of these regulations—

(a) Any particular kind of machinery; or

(b) Any machinery or kind of machinery when used in any particular work or in any particular kind of work,—

if satisfied that, having regard to any conditions imposed, the provision or provisions in respect of which the exemption is granted are not reasonably practicable or are not reasonably necessary for the protection of employees using the machinery or, as the case may require, carrying out the work.

(5) The Secretary may at any time cancel a certificate by which an exemption is granted under subclause (4) of this regulation, if satisfied that it is proper to do so.

(6) Where the Secretary cancels a certificate under subclause (5) of this regulation, the Secretary shall—

(a) Determine a date, being a date allowing a reasonable period after the date of the cancellation, after which the certificate shall cease to have effect:

(b) Where any such certificate has been issued to any particular person, notify that person of the date of the cancellation and the date after which the certificate shall cease to have effect:

(c) Where any such certificate has not been issued to any particular person, publish by way of a notice in the Gazette the date of the cancellation and the date after which the certificate shall cease to have effect.

20. **Self-propelled mobile mechanical plant**—(1) Every employer shall take all practicable steps to ensure that every self-propelled mobile mechanical plant to which this regulation applies is fitted with a roll-over protective structure and a seat belt.

(2) Every employer shall take all practicable steps to ensure—

(a) That every roll-over protective structure fitted to a self-propelled mobile mechanical plant pursuant to subclause (1) of this regulation is suitable for the purpose for which it is to be used; and

(b) That every seat belt fitted to a self-propelled mobile mechanical plant pursuant to subclause (1) of this regulation is of a kind, and fitted in a manner, that is suitable for the purpose for which it is to be used; and

(c) Where the roll-over protective structure fitted to any self-propelled mobile mechanical plant pursuant to subclause (1) of this regulation is damaged so that its effectiveness is substantially reduced, no employee uses the plant until the structure has been either—

(i) Replaced; or

(ii) Restored to a condition approved by the manufacturer or the manufacturer's principal agent in New Zealand, or by a registered engineer, as equal in strength and effectiveness to the structure as originally fitted.

LEGISLATION - Powder-actuated hand held fastening tools

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use;

REGULATIONS.

52. **Powder actuated tool operator**—(1) Every employer shall take all practicable steps to ensure that every employee who, in the course of carrying out construction work, operates a powder actuated tool is the holder of a current certificate of competence as a powder actuated tool operator, being a certificate that authorises the employee to operate the kind of tool being operated in the kind of work being carried out.

(2) Nothing in this regulation prevents an employee training to become the holder of a certificate of competence as a powder actuated tool operator from operating, in the course of carrying out construction work, a powder actuated tool under the direct supervision of a holder of such a certificate, being a current certificate that authorises the holder to operate the kind of tool being operated by the employee in the kind of work being carried out by the employee.

.....

56. **Machinery**—Every employer shall take all practicable steps to ensure that no employee under the age of 15 years, at any place of work under the control of that employer,—

(a) Works at or with any machinery; or

(b) Assists with work at or with any machinery.

5.7 Powder-actuated hand held fastening tools

When using a powder-actuated fastening tool, operators have a responsibility to protect themselves and others from hazards associated with this type of work. These hazards can and should be managed. The operator of a powder-actuated fastening tool should manage the hazards through compliance with an approved code of practice in conjunction with any manufacturer's requirements.

The operator should comply with the following requirements regarding loading of a powder-actuated fastening tool with a charge and fastener:

• Only load the powder-actuated fastening tool at the place where it is intended to be used and immediately prior to its use.

• Only carry a loaded powder-actuated fastening tool when, because of mechanical failure, it cannot be unloaded.

• If the powder-actuated fastening tool has been loaded but not put into immediate operation, remove both the charge and fastener.

• During firing of the powder-actuated fastening tool, operators should ensure that all persons required to be in the immediate vicinity of the firing activities, wear:

— Suitable eye protectors complying with AS/NZS 1337; and

— Suitable ear protectors complying with AS 1270.

FURTHER INFORMATION.

Standards

AS 1270 :1988 *Hearing protection devices*

NZS/AS 1319:1983 *Safety signs for the occupational environment*

AS/NZS 1337:1992 *Eye protectors for industrial applications*

AS/NZS 1873:1994 Parts 1-4 *Powder-actuated hand-held fastening tools, fasteners and explosive charges*

OSH publication

Approved Code of Practice for Powder-actuated Hand-held Fastening Tools

LEGISLATION - Confined spaces

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

6.1 Confined spaces

"Confined spaces" are not limited to closed tanks with restricted means of entry and exit. Also included are open manholes, trenches, pipes, flues, ducts, ceiling voids, enclosed rooms such as basements and other places where there is inadequate ventilation and/or the air is either contaminated or oxygen deficient.

Before entry to any confined space it shall be tested to determine that there are adequate levels of oxygen present, and that dangerous amounts of flammable and or poisonous gases are not present. (Proprietary meters are available.)

No one is to enter any space if testing shows that the air is dangerous inside. Forced ventilation should be used to remove or dilute the gases and supply fresh air. The air shall be tested again prior to entering, and monitoring continued while work is being conducted inside the space.

Types of confined space

Confined spaces may be inherently unsafe. Alternatively, different types of work being completed in the confined space may also make the atmosphere dangerous.

Some examples of confined spaces in which the work being done can make the space dangerous, are given below:

• Some painting work, and the application of certain adhesives, and liquids such as paint thinners. These can produce dangerous amounts of solvent vapour, which can cause dizziness and impair judgement. Such solvents are often flammable, so there is an accompanying risk of fire.

• The use of LPG appliances and petrol or diesel engines can lead to the build-up of poisonous carbon monoxide gas. There is also a risk of fire resulting from leaks.

Among the confined spaces that may be inherently hazardous are:

• Manholes, tunnels, trenches set in chalk soil, which can partly fill with carbon dioxide gas, displacing breathable air.

• Poisonous or flammable gases can collect in manholes in contaminated ground (e.g. near underground petrol tanks or refuse tips).

• In manholes, pits or trenches connected to sewers, there can be a build-up of flammable and/or poisonous gases and/or insufficient oxygen in the air.

• Sludges and other residues in tanks or pits, if disturbed may partially fill the confined space with dangerous gases.

• Rotting vegetation, rusting metal work, and similar natural oxidation processes may lead to an oxygen-deficient atmosphere inside the space.

Precautions

If work in a confined space could be potentially dangerous, entry shall be strictly controlled and detailed precautions taken.

Preferably employers should adopt an entry permit system, so as to ensure that employees and others are aware of the location of anyone required to enter confined spaces. As mentioned above, tests may be required to identify any dangerous amounts of flammable or poisonous gases.

Where the work being carried out could cause danger:

• The hazard should be kept out of the confined space. For example, petrol or diesel engines should not be used inside the space, but sited outside in a well ventilated area; and

• Paints and adhesives should be avoided which give off dangerous solvent vapours. (Use water-based adhesives where possible.)

If these steps cannot be taken, then provide adequate ventilation (forced ventilation may be required), or mechanical extraction to ensure that fumes are expelled in a safe area free from potential sources of ignition.

Where the confined space itself may be dangerous (regardless of the work carried out):

• People who are required to work in or enter the space should receive training and instruction in the precautions to be taken inside the area.

• At least one person should be stationed outside the space to keep watch and communicate with anyone inside.

• Rescue harnesses should be worn by all those inside the confined space, with a life-line attached to the harness and a suitable winching mechanism at or near the point of entry.

• Rescue procedures should be included in the training of workers. Reliance should never be placed on one person alone to lift injured or unconscious people out of a confined space during rescue, unless they are equipped with special lifting appliances. Rescue equipment, including emergency breathing apparatus, should be available near the entrance at all times.

• No attempt should ever be made to clear fumes or gases with pure oxygen.

• Appropriate respiratory protection shall be provided where the results of monitoring assessment indicates that a safe atmosphere cannot be established.

FURTHER INFORMATION.

OSH publication

Safety in Confined Spaces

LEGISLATION - Working on roads

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

REGULATION.

57. **Tractors and self-propelled mobile mechanical plant**—(1) In this regulation, the term "vehicle" means—

(a) Any tractor; and

(b) Any self-propelled mobile mechanical plant, other than a car, a truck, a motorcycle, or machinery that has a mass of 700 kilograms or less.

(2) Every employer shall take all practicable steps to ensure that no employee under the age of 15 years, while in any place of work under the control of that employer,—

(a) Drives any vehicle; or

(b) Rides upon any vehicle while it is drawing any implement; or

(c) Rides upon any vehicle while any implement is attached to it; or (d) Rides upon any implement (not being a sled or trailer designed or adapted exclusively or principally for the carriage of passengers or of goods) drawn by or attached to any vehicle.

.....

6.2 Working on roads

Road work operations need to be carefully planned and administered to avoid accidents to both persons carrying out the work and persons using the road where traffic has to pass through road construction or maintenance works.

The main causes of accidents at roadworks are inadequate signposting and lighting, and drivers failing to notice road workers.

Major changes in road conditions which require sudden driver reaction should be avoided wherever possible because they can lead to hazardous situations and accidents.

Where changes are unavoidable, drivers must be prepared for the change in driving conditions. Appropriate signs should be set up in accordance with the Transit New Zealand publication *Temporary Traffic Control and Safety at Road Works Sites*.

People who are required to work on roads or control traffic should wear suitable conspicuous clothing to ensure that they can be seen by motorist and mobile mechanical plant operators working on the road.

Where visual contact between traffic controllers is not possible, controllers should use two-way radio communication.

When temporary traffic control has been set up at a site it should be assessed for effectiveness — for both day and night time operation. Accident or near-accidents, damage signs, skid marks, traffic queues and unusually high or low speeds are all indications that control arrangements need to be reviewed. Any changes necessary should be made as soon as possible. Unnecessary traffic control signs or road markings must be removed, as they tend to confuse motorists and make them careless.

Where lengthy delays are likely, an employee should be assigned to inform motorists of the delay and how long it will last.

Speed limits

Speed limits set through a road works site should be as high as possible, consistent with safe site operations and traffic movements. If motorists perceive a speed limit to be unrealistic, they are more likely to disregard it.

Housekeeping

Confusion will be reduced and operations will be more efficient when the work area is orderly and tidy.

Observance of the following points will make roadworks safer and reduce the potential for accidents:

• The site roadway and employee and public access routes should be defined to the fullest extent possible. Employees have been run over by trucks or plant which they have not

heard approaching because of site noise or other distractions.

• Plant and materials should be located in areas which do not obstruct traffic or limit driver vision.

• Materials should be stored in an orderly manner that will prevent them falling and spreading, with easy access provided.

• All spills of oil should be cleaned up or covered with sand. Areas which have become waterlogged or churned up, and over which people, plant and machinery have to pass should be provided with a sound working surface by drainage improvement, metalling or other means.

Fire safety

No smoking or naked flame shall be permitted near fuel or oil storage areas or where such goods are dispensed. Decanting of flammable liquids and the refuelling of portable plant should be done outdoors.

Waste material should not be allowed to accumulate on site. Rubbish drums should be provided as necessary and rubbish regularly removed from the site or burned in an incinerator a safe distance from any flammable material.

Weed spraying

Employees involved in roadside weed spraying operations are liable to health problems through inhaling or absorbing through their skin the toxic chemicals being sprayed. Employers should ensure that employees:

• Wear waterproof or impervious protective clothing, including gloves and footwear;

• Avoid spray drift, and wear respiratory protective equipment appropriate for the herbicide being sprayed;

• Read the labels on all containers to determine the extent of the hazard;

• Wash hands before meal breaks and on completion of the spraying. A daily shower is also recommended; and

• Display suitable signs to inform the public that chemical spraying is being carried out.

Handling lime

Employees required to operate bulk spreaders and handle bagged lime are vulnerable to skin irritations and burns. When quicklime is being handled, particular care should be taken because of the aggressive nature of the material.

Employers should ensure that employers handling lime:

• Wear dust masks, goggles, overalls or long trousers, long sleeved shirts, gauntlet type gloves and a hat or cap.

ACT.

10. **Significant hazards to employees to be minimised, and employees to be protected, where dimination and isolation impracticable**—
(1) Where—
(a) There is a significant hazard to employees at work; and
(b) Either—
(i) There are no practicable steps that may be taken to eliminate it; or
(ii) All practicable steps to elirninate it have been taken, but it has not been eliminated; and
(c) Either—
(i) There are no practicable steps that may be taken to isolate it from the employees; or
(ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,—
the employer shall take the steps set out in subsection (2) of this section.
(2) The steps are—
(a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
(b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and
....

ACT

Refer to section 10 (2) (b) of the Act, reproduced on the preceding page.

• Avoid tightly fitting clothes around the neck and wrists, as chafing in the presence of lime can cause skin irritation. Trousers legs should be tied over the boots.

• Attend to personal hygiene, and change clothes daily.

The skin should not be permitted to become heavily contaminated with lime for long periods. Barrier creams provide useful protection to exposed parts of the body.

Handling petroleum products

Employers required to handle petroleum products should wear clean overalls and PVC-coated flexible gloves. Goggles should be worn if there is a danger of liquid entering the eyes.

Handling bitumen

Employees handling bitumen on sealing operations should wear overalls or long trousers and long-sleeved shirts of flannel or woollen material. Trousers should be worn outside boots and socks, not tucked in.

Employees handling hoses, valves, hatches and clips should wear heat-resistant gloves that are made of thick, soft leather or fabric. Gloves should have a tightly fitting wrist band without flared gauntlets.

Employees filling or discharging bitumen tankers should wear full-face eye shields.

All employees should wear heavy duty safety boots or gumboots.

FURTHER INFORMATION

Handbook for Temporary Traffic Control and Safety at Roadworks Sites, Transit New Zealand.

A Guide to Safe Practices for the Handling, Transportation and Storage of Bitumen, Bitumen Contractors' Association.

6.3 Excavations

Excavations present a range of particular hazards to employees or others who are required to work in them or in the vicinity. The extent of these hazards is determined by such factors as the stability of the soil, the proximity of underground services, or the presence of water.

Prior to commencing work on an excavation it is important that employers and employees ensure the following requirements are met:

• All underground services have been located (with locators and/or plans), marked, and precautions taken to avoid them;

• An adequate supply of suitable timber, trench sheets, props or other supporting material has been delivered to the site before excavation work begins;

• A safe method is used for putting in and taking out the timbering, i.e. one that does not

LEGISLATION - Excavations

ACT

6. **Employers to ensure safety of employees**—Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment;

....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

REGULATONS

2. **Interpretation**—In these regulations, unless the context otherwise requires,—

"Notifiable work" means—

.....

(c) Any construction work of one or more of the followingkinds:

(i) Work in which a risk arises that any person may fall 5 metres or more, other than—

.....

(iv) Work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 metres deep and having a depth greater than the horizontal width at the top:

(v) Work in any drive, excavation, or heading in which any person is required to work with a ground cover overhead:

(vi) Work in any excavation in which any face has a vertical height of more than 5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical:

(vii) Work in which any explosive is used or in which any explosive is kept on the site for the purpose of being used:

(viii) Work in which any person breathes air that is or has been compressed or a respiratory medium other than air:

rely on people working within an unsupported trench; or

• The sides of the excavation are sloped back or battered, with the angle of batter sufficient to prevent collapse;

The excavation should be inspected daily. It should be thoroughly examined after explosives have been used, after unexpected falls of materials, or adverse weather conditions. The inspection should ensure:

• There is safe access to the excavation, e.g. by a ladder of adequate length;

• There are barriers to stop people falling in;

• The excavation does not affect the stability of neighbouring buildings;

• Precautions are taken against any risk of the excavation flooding;

• Materials, spoil or plant are not stacked near the edge of the excavation that are likely to cause a collapse at the side;

• Where vehicles tip into the excavation, properly secured stop blocks are used.

More detailed information can be found in the publication set out below.

FURTHER INFORMATION

OSH publication

Approved Code of Practice for Safety in Excavations and Shafts for Foundations

24. **Excavations with face more than 1.5 metres high**—(1) Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure that, where any face of any excavation is more than 1.5 metres high, that face is shored.

(2) Subclause (1) of this regulation does not apply where—

(a) The face is cut back to a safe slope; or

(b) The material in the face is of proven good standing quality under all reasonably foreseeable conditions of work and weather; or

(c) By reason of the nature of the work and the position of any employee in the vicinity, there is no danger to any employee; or

(d) The provision of shoring is impracticable or unreasonable by reason of the nature of the work and the employer takes all practicable steps to ensure that other precautions are taken to make the face as safe as possible in the circumstances.

(3) Every employer shall take all practicable steps to ensure that any shoring used in any excavation at the place of work—

(a) Consists of materials that are suitable for the purpose for which they are to be used, of sound quality, and adequate in strength for the particular use; and

(b) Has bracings, jacks, and struts that are securely held to prevent accidental displacement, and packings and wedges that are held by nails or spikes; and

(c) Is placed in a proper manner by an experienced person under competent supervision; and

(d) Is not altered, dismantled, or interfered with except on the instructions of the employer or a representative of the employer.

25. **Excavations of hazardous depth**—Every employer shall take all practicable steps to ensure, where any excavation is—

(a) Readily accessible to any person; and

(b) Likely to collect or retain water of such a depth as to constitute a danger to any person,—

that—

(c) Any such excavation is covered or fenced, when no employee is in the immediate vicinity to prevent access to it by any person; and

(d) Any such excavation created in the course of the work is covered, fenced, or filled at the completion of the work.

.....

Regulation 26 sets out the requirements for the notification of hazardous work, it is reproduced on p9 of these guidelines.

LEGISLATION - Underwater diving

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment; and

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use; and

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control; and

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

REGULATIONS

2. **Interpretation**— In these regulations, unless the context otherwise requires,—

.....

"Current", in relation to a certificate of competence, means acertificate of competence that has been issued under regulation 38 of these regulations and has not expired or been cancelled or suspended under regulation 41 of these regulations:

.....

"Diving" means diving under water where the diver breathes gases at greater than atmospheric pressure; and "diver" has a corresponding meaning:

.....

"Notifiable work" means—

.....

(c) Any construction work of one or more of the following kinds:

.....

(viii) Work in which any person breathes air that is or has been compressed or a respiratory medium other than air:

.....

Regulation 26 describes the requirements for notification of hazardous work. It is reproduced on page 7 of these guidelines.

.....

Regulations 47, 48 and 49 contain the requirements for certification of construction divers. They are reproduced on page 9 of these guidelines.

6.4 Underwater diving

Underwater construction work can only be undertaken by a person holding the appropriate class of certificate of competency as a professional diver.

The minimum team recommended for underwater work is 3 people — 2 divers and a supervisor. Other diving work may require more personnel, depending upon the nature of the work to be carried out.

Diving requirements

To ensure the diving is carried out safely the following requirements should be met:

- Only divers who hold the appropriate certificate of competency may work except for divers who are being trained while working under direct supervision of a diver holding a certificate of competency as a professional diver.
- Divers shall be medically fit.
- The work must be notified to OSH.
- A dive plan is to be prepared.
- If decompression stops are necessary, a recompression chamber and medical attention should be immediately available.
- Divers shall have reserve breathing supplies.
- Scuba diving should involve "buddy" diving or a lifeline.
- Exhaust gases should be adequately vented when refilling breathing air cylinders.
- Log books should be kept.
- If a "buddy" system is not used, there must be an effective alternative communication system in place.
- A diving supervisor should be appointed to be in charge of the operation. This person may also be a diver.

FURTHER INFORMATION

OSH publication

Approved Code of Practice for Safety in Professional Diving Work (draft)

6.5 Demolition

Demolition is extremely hazardous work. Where inappropriate work methods have been or are adopted, the lives of employees and other people in the vicinity are placed at risk.

Contractors or employers who carry out demolition work or contract others to should take all practicable steps to ensure:

- The public are protected from the rubble, dust and traffic by proper gantries and fenced walkways.
- Power, gas, telecommunications, sewerage and water services have been disconnected.
- Walls are never left free-standing that could be blown down by unexpected winds.
- Where any wall is to be toppled by pulling, there is a surrounding clear space of 1.5 x wall height.
- Floors are not overloaded with demolition debris or plant being loaded on to floors. (Loadings should be checked by a competent engineer.)
- Adequate measures are taken to overcome asbestos hazards from old insulation and construction materials.
- Empty tanks are checked for explosive or toxic materials.
- Professional advice is taken before tackling prestressed concrete structures.
- Noise is controlled at the source.
- Protective helmets, also eye, feet and hearing protection is provided and it is ensured that it is used.
- Precautions are taken to avoid fire in debris.
- The public is protected from the site.
- When chainsaws are used, protection is provided for the user's legs, eyes and ears.
- Traffic crossing footpaths is controlled by adequately trained personnel.
- Access is prevented to any person once any controlled collapse demolition process has started.
- All mobile mechanical plant has been fitted with an appropriate falling object protective structure.
- Additional support is provided for employees required to remove brittle roofing.

FURTHER INFORMATION

NZ Building Code and approved documents

OSH publication

Approved Code of Practice for Demolition

LEGISLATION - Demolition

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment; and

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

(c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use; and

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control; and

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

....

REGULATIONS

2. **Interpretation**— In these regulations, unless the context otherwise requires,—

.....

"Notifiable work" means—

(a) Any restricted work, as that term is defined in regulation 2 (1) of the Asbestos Regulations 1983:

.....

(c) Any construction work of one or more of the following kinds:

(i) Work in which a risk arises that any person may fall 5 metres or more, other than—

Work in connection with a residential building up to and including 2 full storeys:

Work on overhead telecommunications lines and overhead electric power lines:

Work carried out from a ladder only:

Maintenance and repair work of a minor or routine nature:

(ii) The erection or dismantling of scaffolding from which any person may fall 5 metres or more:

(iii) Work using a lifting appliance where the appliance has to lift a mass of 500 kilograms or more a vertical distance of 5 metres or more, other than work using an excavator, a fork-lift, or a self-propelled mobile crane:

.....

(vii) Work in which any explosive is used or in which any explosive is kept on the site for the purpose of being used:

.....

Regulation 26 describes the requirements for notification of hazardous work. It is reproduced on page 7 of these guidelines.

LEGISLATION - Noise

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

REGULATIONS.

11. **Noise**—(1) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that no employee is exposed to noise above the following levels:

(a) A noise exposure level, $L_{Aeq,8h}$, of 85 dB(A); and

(b) A peak noise level, L_{peak}, of140 dB,—

whether or not the employee is wearing a personal hearing protection device.

(2) For the purposes of subclause (1) of this regulation,—

(a) The noise exposure level,$L_{Aeq,8h}$, is the level of the daily noise exposure normalised to a nominal 8 hour day, in dB(A) referenced to 20 micropascals; that is to say, it is the steady noise level that would, in the course of an eight hour period, cause the same A-frequency-weighted sound energy as that due to the actual noise over the actual working day; and

(b) The peak noise level, L[Inf peak], is the highest frequency-unweighted peak sound pressure level in the place of work in decibels referenced to 20 micropascals, measured using sound measuring equipment with "P" time-weighting, as specified in the Australian Standard numbered AS 1259.1-1990 and entitled "Sound level meters Part 1: Non-integrating"; and

(c) The levels of noise referred to in subclause (1) of this regulation shall be measured and assessed in accordance with the Australian Standard numbered AS 1269-1989 and entitled "Acoustics— Hearing conservation".

(3) Where an employer has taken all practicable steps to ensure that no employee at any place of work under the control of that employer is exposed to noise above the levels specified in subclause (1) of this regulation but has not eliminated the risk that any employee may be exposed to noise above those levels, the employer shall communicate clearly, by way of signs, labelling of machinery, or other appropriate means—

(a) The fact that noise levels at the place of work are or are likely to be hazardous; and

(b) The sort of personal hearing protection device that is suitable to protect against the noise levels; and

(c) Where such a device may be obtained.

.....

7.1 Noise

Employers operating machinery should take all practical steps to reduce noise produced by machinery to levels below the exposure limit (elimination).

Where it is not practical to do this, then all practical steps should be taken to isolate the excessive noise from people.

Where both are not practical, systems should be put in place to ensure that people exposed to the remaining excessive noise are unlikely to suffer harm.

Further information on the management of noise hazards is contained in the *Guidelines for the Provision of Facilities and General Safety in Commercial and Industrial Premises*.

Noise levels in construction work

Exposure to noise above a daily average level of 85 dB(A), (over no more than 8 hours each day) or a peak level of 140 dB is likely to cause people with unprotected hearing to suffer noise-induced hearing loss.

People can suffer hearing loss due to noise made by machinery and equipment they operate or are exposed to at work, home and during recreational activities. Short-term exposure to noise levels above 85 dB(A) may cause temporary hearing loss, but continued exposure over long periods can result in permanent hearing loss and stress-related problems.

Approximate noise levels in decibels
(vary with distance, etc.)

0	Acute threshold of hearing
15	Average threshold of hearing
30	Soft whisper
40	Quiet office or home at night
60	Normal speech
70	Noisy office
80	Busy street
85	Threshold of possible damage. Below this level an 8-hr day can be worked without using hearing protection devices. However, protection is still desirable.
85-100	Power tools
91	Heavy truck (damage after about 2.5 hrs.)
94	Lawnmower (damage after 45 mins.)
97	Pneumatic drill (damage after about 15 mins.)
110	Rock group, trail bike (damage after 1.5 mins.)

115 Chainsaw (damage after 30 secs.)

120 Car horn (above 130 dB(A) may cause pain)

133 Jet taking off

140 Shotgun blast

Employers on construction work should provide hearing protection at the required level to all employees and ensure that it is worn.

Protection required

Noise level	*Protection level*
84 to 91 dBA	Grade 1 earmuffs
Up to 97 dBA	Grade 2 earmuffs
Up to 103 dBA	Grade 3 earmuffs
Up to 109 dBA	Grade 4 earmuffs
Up to 115 dBA	Grade 5 earmuffs

7.2 Manual handling

Construction workers have one of the highest rates of manual handling injury. They are third after drivers and nurses.

The nature and duration of many construction tasks, such as:

- Installing ceiling linings;
- Installing ventilation ducts in confined spaces;
- Erecting scaffolding;
- Working in excavations;
- Using concrete mixers;
- Lifting heavy equipment; and
- Use of a hammer.

Particular risk factors for manual handling injury that exist in the construction industry are:

- Awkward postures and tasks;
- A long time spent doing awkward tasks;
- Awkwardness and weight of loads handled;
- The "macho" image of construction work;
- Poorly designed tools; and

LEGISLATION - Manual handling

ACT

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control;

.....

• Inadequate work space.

Many of these risk factors are difficult to overcome. It may be necessary to reduce the risk involved in a task, such as lining out a ceiling with Gibraltar board, by arranging for the operator to spend half the day doing other, less taxing tasks. Labour saving devices and work techniques also have a role to play.

There are other risk factors that can only be removed in the design stage. Architects, engineers and other designers should be aware of their responsibilities under the regulations to design in a manner that is safe. This applies not only to equipment but to work procedures.

LEGISLATION - Fire protection

ACT

12. **Information for employees generally—**Every employer shall ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work has been given, in such a form and manner that the employee is reasonably likely to understand it, information about—

(a) What to do if an emergency arises while the employee is doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place; and

(b) All identified hazards to which the employee is or may be exposed while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to the employee; and

(c) All identified hazards the employee will or may create while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that piace, and the steps to be taken to minimise the likelihood that the ha~ards will be a cause or source of harm to other people; and

(d) Where all necessary safety clothing, devices, equipment, and materials are kept.

7.3 Fire protection

Suitable and sufficient equipment should be provided to ensure people engaged in construction work are protected in the event of fire.

Employers should ensure that:

• Employees are trained to use fire protection equipment;

• Combustible material does not accumulate so as to constitute a fire hazard;

• Sources of ignition are not introduced to any place where combustible materials are stored;

• Storage or handling areas for combustible materials are clearly identified with easily legible lettering “DANGER: NO SMOKING OR NAKED LIGHTS”;

• Fire extinguishers are provided in workshops, site offices, main switchboard rooms and in site accommodation. Also, in every place where combustible materials are stored, in every place where welding or flame cutting processes are being carried out, and on every floor of a building or structure.

• Where the construction work includes the installation of a permanent rising water main, the main is installed as the work proceeds as far as practicable so as to be available for use no more than 9 metres below the uppermost working floor;

• Emergency procedures are established for the event of fire. These should include:

- Effective warning systems to facilitate immediate evacuation;

- Clearly defined areas where employers and other persons on site can assemble; and

- A procedure for trial evacuations, at not more than three-monthly intervals.

FURTHER INFORMATION

Standards

NZS 4503:1974 *Code of practice for the distribution, installation and maintenance of hand-operated fire-fighting equipment for use in buildings*

NZS 4510: 1978 *Code of practice for riser mains for fire service use*

NZ Building Code and approved documents

7.4 Housekeeping (general)

Confusion will be reduced and operations will be more efficient when the work area is orderly and tidy. Tidiness and safety go hand in hand. Untidiness causes accidents — for example, employees trip over objects, slide on greasy surfaces, cut hands on projecting nails, or walk into poorly stacked materials, or vehicles run over or back into materials, plant or employees.

All rubbish around machinery, plant, accessways, stairwells, site facilities and the site in general should be regularly gathered and disposed of in suitable bins.

Where rubbish is burned on site, this should be in a suitable incinerator well away from flammable material. Appropriate permits may need to be obtained to burn rubbish on site.

Safe access

Employers should ensure that:

- All employees are able to reach their place of work safely.
- There are safe roads, gangways, passageways, ladders and scaffolds.
- All walkways are level and free from obstructions.
- Materials are stored safely.
- Holes are securely fenced or covered and clearly marked.
- Chutes are available to avoid waste being thrown down in the open.
- Nails in re-used timber are removed or hammered down.
- There is adequate lighting provided for the work (see section 1.6).
- Temporary props and shoring are in place to support temporary work as necessary.

LEGISLATION - Housekeeping (general)

ACT.

6. **Employers to ensure safety of employees—** Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment; and

.....

7.5 Public safety

Construction sites can pose a variety of hazards to people in the vicinity of the work. Local authorities, construction companies, and workers all have a part to play in ensuring the public are not endangered by construction work.

Hazards

Construction site hazards that can affect the public in the vicinity include:

- Objects falling from buildings. These have included concrete debris, chisels, bolts, timber off-cuts, scaffold planks and even steel beams.
- Bundles and trays of building materials swung above people's heads.
- Construction trucks crossing footpaths, or emerging suddenly and unseen from a site.
- Broken and uneven footpaths, holes not filled in, footpaths covered in mud and in water.

LEGISLATION - Public safety

ACT.

Other Duties

15. **Duties of employers to people who are not employees**—Every employer shall take all practicable steps to ensure that no action or inaction of any employee while at work harms any other person.

16. **Duties of persons with control of places of work**—

To the extent that a person is—

(a) The owner, lessee, sublessee, occupier, or person in possession of a place of work or any part of a place of work (not being a home occupied by the person); or

(b) The owner, lessee, sublessee, or bailee, of any plant in a place of work (not being a home occupied by the person),—the person shall take all practicable steps to ensure that people in the place of work, and people in the vicinity of the place of work, are not harmed by any hazard that is or arises in the place of work.

17. **Duties of self-employed people**—Every self-employed person shall take all practicable steps to ensure that no action or inaction of the self-employed person while at work harms the self-employed person or any other person.

18. **Duties of principals**—(1) Every principal shall take all practicable steps to ensure that—

(a) No employee of a contractor or subcontractor;

and

(b) If an individual, no contractor or subcontractor,—is harmed while doing any work (other than residential work) that the contractor was engaged to do

(2) Subsection (1) of this section shall be read subject to section 2 (2) of this Act.

19. **Duties of employees**—Every employee shall take all practicable steps to ensure—

(a) The employee's safety while at work; and

(b) That no action or inaction of the employee while at work causes harm to any other person.

.....

REGULATIONS

25. **Excavations of hazardous depth**—Every employer shall take all practicable steps to ensure, where any excavation is—

(a) Readily accessible to any person; and

(b) Likely to collect or retain water of such a depth as to constitute a danger to any person,—

that—

(c) Any such excavation is covered or fenced, when no employee is in the immediate vicinity to prevent access to it by any person; and

(d) Any such excavation created in the course of the work is covered, fenced, or filled at the completion of the work.

.....

Duties of Other Persons to Young Persons

59. **Presence of young persons**— (1) Subject to subclause (2) of this regulation, every person who controls a place of work shall take all practicable steps to ensure, in relation to every place of work under the control of that person, that no person under the age of 15 years is present in any area at the place of work—

(a) At any time when goods are being prepared or manufactured for trade or sale in that area:

(b) At any time when any construction work is being carried out in that area:

(c) At any time when any logging operation or tree-felling operation is being carried out in that area:

(d) At any time when any work is being carried out in that area that is likely to cause harm to the health and safety of a person under the age of 15 years.

(2) Subclause (1) of this regulation does not apply to any area if any person under the age of 15 years is at all times—

(a) In any part of that area to which the public generally has access; or

(b) Under the direct supervision of an adult in that area; or

(c) On a guided tour of that area; or

(d) In any office in that area; or

(e) In any part of that area used only for selling goods or services.

• Paint, water, concrete or grit sprinkled on people or cars.

• Pedestrians having to negotiate between scaffolding tubes or possibly tripping over awkwardly placed sole plates.

• Open excavations that an adult or child could fall into.

• Noisy concrete pumps or compressors near where the public walk.

• Pedestrians being forced to walk on the roadway, without any protection from traffic.

• Trucks double-parked on the roadway, or with protruding loads impeding traffic.

• Site noise, dust and welding flashes, and an absence of suitable hoardings.

• Site security during non-working periods.

• Footpath obstacles for the aged, people with disabilities, and pram wheelers that force them to step over, walk around hoses, debris, or building material, or detour over kerbs, where simple ramps or run-ups could be provided.

Responsibility for public safety

Employers have a legal responsibility to ensure that nothing they or their workers do will endanger members of the public by any action.

This means they should take steps to ensure that:

• Pedestrian detours are clearly defined, and pedestrians protected from the dangers of road traffic when using any detour.

• The passage of vehicles across footpaths is to be supervised, to remove danger to the public.

• Flagmen, barriers, signs or traffic lights are used to stop the public passing under suspended loads (unless there is a protective gantry).

• Excavations are fenced, and, if they are like to retain water, are covered and securely fenced to prevent access for children. If in public places, they should have warning signs, and warning lights at night.

• Pneumatic tools are to have silencers, and piling dollies are to be of timber or neoprene so that noise is kept to acceptable levels.

• If scaffolding must intrude on to footpaths, it is to be clearly marked, and padded if there is any risk of causing injury.

• Adequate security of the site is to be provided during non-working periods. This involves ensuring excavations and openings are covered or fenced, materials are stacked safely, plant immobilised, ladders removed or lowered to the ground.

FURTHER INFORMATION

Standards

NZ Building Code and approved documents

Part 5: Construction and Demolition Hazards.

Working on the Road, Transit New Zealand

OSH publications

Approved Code of Practice for the Safe Erection and Use of Scaffolding

Code of Practice for Safety in Excavations and Shafts for Foundations

Welding Safety

OSH Handbook for health and safety inspectors

7.6 Restriction on the employment of young persons

Hazardous work

No employer shall employ any person under 15 years of age in a place where construction work is carried out.

Persons under 15 years of age may visit construction workplaces if under the direct supervision of an adult or on a guided tour with the prior permission of the person in charge of the operation.

Codes of practice set out detailed requirements for such visits.

Night employment

Every employer shall take all practicable steps to ensure that no person who has not attained the age of 16 years is employed between the hours of 10 pm on any day and 6 am on the next day, unless the employee's employment is in accordance with an approved code of practice relating to work of that kind or description.

LEGISLATION - Restriction on the employment of young persons

REGULATIONS.

54. **Employment of young persons**—(1) Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure that no employee under the age of 15 years works in any area at a place of work under the control of that employer—

(a) At any time when goods are being prepared or manufactured for trade or sale in that area:

(b) At any time when any construction work is being carried out in that area:

(c) At any time when any logging operation or tree-felling operation is being carried out in that area:

(d) At any time when any work is being carried out in that area that is likely to cause harm to the health and safety of a person under the age of 15 years.

(2) Subclause (1) of this regulation does not apply to any area if an employee under the age of 15 years works at all times—

(a) In any office in that area; or

(b) In any part of that area used only for selling goods or services.

58. **Night employment**—Every employer shall take all practicable steps to ensure that no employee under the age of 16 years works, at any place of work under the control of that employer, between the hours of 10 p.m. on any day and 6 a.m. on the next day, unless the employee's employment is in all respects in accordance with an approved code of practice relating to the employment of people under the age of 16 years between those hours in work of the kind the employee is doing.

7.7 Duties of designers, manufacturers, suppliers and sellers of plant

Designers of plant are required to take all practicable steps to ensure that plant and machinery they design and that is to be used in a place of work is designed so that it will not be a source of harm to any person during manufacture, use and maintenance. In the design process consideration shall be given to applicable ergonomic principles especially in the placing of power controls.

Adequate information shall be given to the manufacturer concerning the use for which it was designed, installation, use, adjustment, maintenance, repair, cleaning, dismantling and any other relevant matters.

LEGISLATION - Duties of designers, manufacturers, and suppliers

REGULATIONS.

PART VII

Duties of Designers, Manufacturers, and Suppliers

65. **Sufficient compliance with certain duties in this Part**—(1) The Secretary may, from time to time, grant recognition to any document containing requirements relating to the duties imposed by any of the following provisions of these regulations:

(a) Regulation 66 (1):

(b) Regulation 67 (1) or (2):

(c) Regulation 68 (1):

(d) Regulation 69 (1), (2), or (3).

(2) On granting recognition to a document under subclause (1) of this regulation, the Secretary shall publish a notice in the Gazette—

(a) Specifying the title of the document and the provision or provisions to which the requirements in the document relate; and

(b) Stating that the document has been granted recognition under subclause (1) of this regulation.

(3) The Secretary may, at any time, withdraw a recognition granted under subclause (1) of this regulation and, on doing so, shall publish a notice in the Gazette to that effect.

(4) It shall, for all purposes, be sufficient compliance with a provision to which subclause (1) of this regulation refers if the designer, manufacturer, or supplier, as the case may be, takes all practicable steps to comply with the requirements in a document—

(a) That contains requirements relating to the duties imposed by that provision; and

(b) That is the subject of a current recognition granted under subclause (1) of this regulation.

(5) For the purposes of subclause (4) (b) of this regulation, a document shall be deemed, in the absence of evidence to the contrary, to be the subject of a current recognition granted under subclause (1) of this regulation if its title is specified in a Gazette notice published under subclause (2) of this regulation and no Gazette notice notifying the withdrawal of that recognition has been published under subclause (3) of this regulation.

Plant

66. **Duties of designers of plant**— (1) Every designer of plant shall take all practicable steps—

(a) To design any plant in accordance with applicable ergonomic principles, including (without limitation) any such principles in relation to the placement of any power control; and

(b) To design any plant in such a way that, if the plant is—

(i) Manufactured in accordance with the design; and

(ii) Used for the purpose for which it was designed; and (iii) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause

Manufacturers are required to ensure that if the plant is manufactured and tested to the design, used for the purpose for which it is designed, that its installation, use, adjustment, maintenance, repair, cleaning and dismantling will not cause harm to any person.

Manufacturers, suppliers and sellers of plant and machinery shall provide clear and comprehensive information to any purchaser or hirer concerning the use for which it was designed, manufactured and tested and information on its correct installation, use, adjustment, maintenance, dismantling, repair and any other relevant matters.

7.8 Duties of designers, manufacturers, suppliers and sellers of protective clothing and equipment

Designers of protective clothing and equipment are required to take all practicable steps to ensure that it is designed to ergonomic principals and if manufactured and properly used for the purpose for which it was designed, in accordance with the designer's instructions, it will give adequate protection from the harm it is intended to protect.

Adequate information shall be given to the manufacturer concerning the installation, use, adjustment, cleaning, maintenance, repairing and dismantling clothing or equipment in accordance with the designer's instructions.

Manufacturers are required to ensure that every supplier and seller of protective clothing and equipment receives clear and comprehensive information concerning the use for which the clothing or equipment is designed, details on its installation, use, adjustment, cleaning, maintenance, repair and dismantling and any other relevant matters.

Suppliers and sellers are required to ensure that every purchaser or hirer of protective clothing and equipment receives clear and comprehensive information concerning the use for which the clothing or equipment was designed, details on its installation, use, adjustment, cleaning, maintenance, repair, dismantling and any other relevant matters.

Manufacturers, suppliers and sellers are required to ensure that clothing and equipment is designed, manufactured and tested so that if the clothing and equipment is used for the purpose for which it was designed and installed, used, adjusted, cleaned, maintained, repaired and dismantled according to the designer's instructions, it will give adequate protection from the harm it was intended to protect.

Every manufacturer, supplier and seller of protective clothing and equipment is to ensure that, to the extent that it is practicable, the clothing and equipment is permanently marked with clear and comprehensive relevant information concerning the use for which it has been designed and how to install, use, adjust, clean, maintain, repair and dismantle the clothing and equipment in accordance with the designer's instructions.

or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(2) Every designer of plant shall take all practicable steps to ensure that every manufacturer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the manufacturer needs information from the designer in order to be able to carry out the manufacturer's duties under regulation 67 of these regulations.

67. **Duties of manufacturers and suppliers of plant**—(1) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by that manufacturer or supplied by that supplier is so designed that, if the plant is—

(a) Manufactured in accordance with the design; and

(b) Used for the purpose for which it was designed; and

(c) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(2) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by that manufacturer or supplied by that supplier is so manufactured and tested that, if the plant is—

(a) Used for the purpose for which it was designed; and

(b) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(3) Every manufacturer of plant shall take all practicable steps to ensure that every supplier of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the supplier needs information from the manufacturer in order to be able to carry out any duty of the supplier under this regulation.

(4) Every supplier of plant shall take all practicable steps to ensure that every purchaser or hirer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the purchaser or hirer needs information from the supplier in order to be able to carry out any duty of the purchaser or hirer under the Act or these regulations.

Protective Clothing and Protective Equipment

68. **Duties of designers of protective clothing and protective equipment** — (1) Every designer of protective clothing or protective equipment shall take all practicable steps—

(a) To design any protective clothing or protective equipment in accordance with applicable ergonomic principles; and

(b) To design any protective clothing or protective equipment in such a way that, if the clothing or equipment is—

(i) Manufactured in accordance with the design; and

(ii) Used for the purpose for which it was designed; and

(iii) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

it will give adequate protection from the harm against which it is intended to protect.

(2) Every designer of protective clothing or protective equipment shall take all practicable steps to ensure that every manufacturer of the protective clothing or equipment receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the clothing or equipment has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the clothing or equipment in accordance with the designer's instructions; and

(c) Any other matters about which the manufacturer needs information from the designer in order to be able to carry out the manufacturer's duties under regulation 69 of these regulations.

69. **Duties of manufacturers and suppliers of protective clothing and protective equipment** — (1) Every manufacturer and supplier of protective clothing or protective equipment shall take all practicable steps to ensure that any such clothing and equipment manufactured by that manufacturer or supplied by that supplier is designed in such a way that, if the clothing or equipment is—

(a) Manufactured in accordance with the design; and

(b) Used for the purpose for which it was designed; and

(c) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

it will give adequate protection from the harm against which it is intended to protect.

(2) Every manufacturer and supplier of protective clothing or protective equipment shall take all practicable steps to ensure that any such clothing or equipment manufactured by that manufacturer or supplied by that supplier is so manufactured and tested that, if the clothing or equipment is—

(a) Used for the purpose for which it was designed; and

(b) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

it will give adequate protection from the harm against which it is intended to protect.

(3) Every manufacturer and supplier of protective clothing or protective equipment shall take all practicable steps to ensure that any such clothing or equipment manufactured by that manufacturer or supplied by that supplier is, to the extent that is practicable, permanently marked with comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the clothing or equipment has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the clothing or equipment in accordance with the designer's instructions.

(4) Every manufacturer of protective clothing or equipment shall take all practicable steps to ensure that every supplier of any such clothing or equipment receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the clothing or equipment has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the clothing or equipment in accordance with the designer's instructions; and

(c) Any other matters about which the supplier needs information from the manufacturer in order to be able to carry out any duty of the supplier under this regulation.

(5) Every supplier of protective clothing or protective equipment shall take all practicable steps to ensure that every purchaser or hirer of any such clothing or equipment receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the clothing or equipment has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the clothing or equipment in accordance with the designer's instructions; and

(c) Any other matters about which the purchaser or hirer needs information from the supplier in order to be able to carry out any duty of the purchaser or hirer under the Act or these regulations.

These checklists give the main points to consider when you are checking safety and health on your site. Identify the hazards, then assess and control the risks.

It is not an exhaustive list. More detailed information can be found in specific codes of practice published by OSH.

For further advice on safety and health contact your local OSH office.

Safe access

❒ Are there arrangements to deal with visitors and workers new to the site?

❒ Can everyone reach their place of work safely? Are there safe roads, gangways, passageways, ladders and scaffolds?

❒ Are all walkways level and free from obstructions?

❒ Is protection provided to prevent falls, especially when more than 3 m?

❒ Are holes securely fenced or protected with clearly marked fixed covers?

❒ Is the site tidy and are materials stored safely?

❒ Is waste collected and disposed of properly?

❒ Are there enclosed chutes for waste to avoid materials being thrown down?

❒ Are nails in timber removed or hammered down?

❒ Is safe lighting provided for work in the dark or poor light?

❒ Are any necessary props or shores in place to make the structure safe?

Ladders

❒ Are ladders the right equipment for the job, or should a scaffold or other access be provided?

❒ Are the ladders in good condition and properly positioned for access?

❒ Are they on firm, level ground?

❒ Are ladders secured near the top (even if they will only be used for a short time)? If they cannot be secured at the top, are they secured near the bottom, weighted or footed to prevent slipping?

❒ Do the ladders rise at least 1 m above their landing place or highest rungs used? If not, are there adequate hand holds?

Scaffolds

❒ Is there proper access to the scaffold platform?

❒ Are all uprights properly founded and provided with base plates? Where necessary, are there timber sole plates, or is there some other way in which slipping and/or sinking can be avoided?

❒ Is the scaffold secured to the building in enough places to prevent collapse and are the ties strong enough?

❒ If any ties have been removed since the scaffold was erected, have additional ties been provided to replace them?

❒ Is the scaffold adequately braced to ensure stability?

❒ Are load-bearing fittings used where required?

❒ Have uprights, ledgers, braces or struts been removed?

❒ Are the working platforms fully planked? Are the planks free from obvious defects, such as knots, and are they arranged to avoid tipping and tripping?

❒ Are all planks securely restrained against movement?

❒ Are there adequate guard rails and toe boards at every side from which a person or materials could fall?

❒ If the scaffold has been designed and constructed for loading with materials, are these evenly distributed?

❒ Are there effective barriers or warning notices to stop people using an incomplete scaffold, e.g. one that is not fully planked?

❒ Does a competent person inspect the scaffold at least once a week and always after bad weather?

❒ Are the results of inspections recorded, including defects that were put right during the inspections, and the records signed by the person who carried out the inspection?

Excavations

❒ Have all underground services been located (with locators and plans), marked and precautions taken to avoid them?

❒ Has an adequate supply of suitable timber, trench sheets, props or other supporting material been delivered to the site before excavation work begins?

❒ Is a safe method used for putting in and taking out the timbering, i.e. one that does not rely on people working within an unsupported trench?

❒ If the sides of the excavation are sloped back or battered, is the angle of batter sufficient to prevent collapse?

❒ Is the excavation inspected daily, and thoroughly examined after using explosives or after unexpected falls of materials?

❒ Is there safe access to the excavation, e.g. by a ladder of suitable length?

❒ Are there barriers to stop people falling in?

❒ Is the excavation affecting the stability of neighbouring buildings?

❒ Is there risk of the excavation flooding?

❒ Are stacked materials, spoil or plant near the edge of the excavation likely to cause a collapse at the side?

❒ If vehicles tip into the excavation, are properly secured stop blocks used?

Roof work

❒ Are crawling ladders or crawling boards used on roofs that slope more than 15°?

❒ If not, do the roof battens provide a safe handhold and foothold?

❒ Are there barriers or other edge protection to stop people or materials falling from sloping or flat roofs?

❒ Are crawling boards provided and used where people work on fragile materials, such as asbestos cement sheets or glass?

❒ Are warning notices posted?

❒ Are suitable guard rails, covers, etc. provided where people pass or work near such fragile materials?

❒ Are roof lights properly covered or provided with barriers?

❒ During sheeting operations, are precautions taken to stop people falling from the edge of the sheet?

❒ Are precautions taken to stop debris falling onto others working under the roof work or in the vicinity of the work?

Transport and mobile mechanical plant

❒ Is it kept in good repair? Do the steering, handbrake and foot brake work properly?

❒ Have drivers and operators received proper training? Is it being safely driven?

❒ Are vehicles securely loaded?

❒ Are passengers prohibited from riding in dangerous positions?

❒ Are there any tip trucks? Do workers know that raised objects should be propped before reaching under?

❒ Is there a system to control on-site movements to avoid danger, including to pedestrians?

❒ Where vehicles have to reverse, are they controlled by properly trained persons following a safe system of work?

❒ Are the correct warning signs being used?

❒ Has mobile mechanical plant been fitted with roll-over protection or fall-on protective structures?

Machinery

❒ Are there any dangerous parts, e.g. exposed gears, chain drivers, projecting engine shafts?

❒ Are the dangerous parts adequately guarded? Are guards secured and in good repair?

Cranes

❒ Is the crane inspected weekly, and thoroughly examined every 12 months by a competent person? Are the results of inspections recorded?

❒ Is there a test certificate?

❒ Is the driver trained, competent ?

❒ Are the controls (levers, handles, switches, etc.) clearly marked?

❒ Do the driver and dogman find out the weight of the load before trying to lift it?

❒ If it is a jib crane with a capacity of more than 1 tonne, does it have an efficient automatic safe load indicator that is inspected weekly?

❒ If it is a hydraulic excavator being used as a crane, is the maximum safe working load clearly marked, and are hydraulic check valves fitted where required?

❒ Is the crane on a firm level base?

❒ Is there enough space for safe operation?

❒ Has the dogman been trained to give signals and to attach loads correctly, and do they know the lifting limitations of the crane?

❒ If it can vary its operating radius, is the crane clearly marked with its safe working loads and corresponding radii?

❒ Is the crane regularly maintained?

❒ Is the lifting gear in good condition and has it been thoroughly examined?

Electricity

❒ Are all portable electric tools and equipment supplied at 230v, or have special measures been taken to protect them from mechanical damage and wet conditions?

❒ Are there any signs of damage to or interference with equipment, wires and cables?

❒ Are all connections to power points made by the correct plugs?

❒ Are connections to plugs properly made so that the cable grip holds the cable firmly and prevents the earth wire from being pulled out?

❒ Are there 'permit-to-work' procedures where necessary to ensure safety?

❒ Are there any overhead electric lines where anything might touch the lines or cause arcing? (cranes, tip-trucks, scaffolding etc.) Has the electricity supply been turned off, or have other precautions been taken?

Powder-actuated fastening tools

❒ Are the maker's instructions being followed?

❒ Does the operator hold a certificate of competency?

❒ Is the operator aware of the dangers and able to deal with misfires?

❒ Does the operator wear goggles and hearing protection?

❒ Is the tool cleaned regularly?

❒ Are the tool and cartridges kept in a secure place when not in use?

Falsework/formwork

❒ Is there a method statement and does it deal with preventing falls of workers?

❒ Have the design and the supports for shuttering and formwork been checked?

❒ Is it being erected safely from steps or proper platforms?

❒ Are the bases and ground conditions adequate for the loads?

❒ Are the props plumb, on level bases and properly set out?

❒ Are the correct pins used in the props?

❒ Are the timbers in good condition?

❒ Is it inspected by a competent person against the agreed design before permission is given to pour concrete?

Risk to the public

❒ Have all risks to members of the public off the site been identified, e.g. material falling from scaffolds etc, site plant and transport (access/egress) and precautions implemented, e.g. scaffold fans/nets, warning notices, etc?

❒ Is there adequate site perimeter fencing to keep out the public and particularly children? Is the site secure during non-working periods?

❒ Are specific dangers on site made safe during non-working periods, e.g. excavations and openings covered/fenced, materials safely stacked, plant immobilised, ladders removed or boarded?

Fire

General

❒ Does your site have the right number and type of fire extinguishers?

❒ Are there adequate escape routes? Are they kept clear?

❒ Do your workers know what to do in an emergency?

Flammable liquids

❒ Is there a proper storage area?

❒ Is the amount of flammable liquid on site kept to a minimum for the day's work?

❒ Is smoking prohibited? Are other ignition sources kept away from flammable liquids?

❒ Are properly constructed safety containers used?

Compressed gases, e.g. LPG, acetylene

❒ Are cylinders stored properly?

❒ Is the cylinder valve fully closed when the cylinder is not in use?

❒ Are there 'hot work' procedures?

❒ Are cylinders in use sited outside huts?

Other combustible material

❒ Is the amount on site kept to a minimum?

❒ Are there proper waste bins?

❒ Is waste material removed regularly?

Noise

❒ Has an assessment been carried out of the noise risks?

❒ Are noisy plant and machinery fitted with silencers/muffs?

❒ Do workers wear ear protection if they have to work in very noisy surroundings?

Health

❒ Have all hazardous substances, e.g. asbestos, lead, solvents etc. been identified and the risks assessed?

❒ Can safer substances be substituted?

❒ Can exposure be controlled other than by using protective equipment?

❒ Are MSDS available from the supplier?

❒ Is safety equipment provided and used?

❒ Are other workers who are not protected kept out of danger areas?

❒ In confined spaces, has the atmosphere been tested and fresh air supply provided if necessary? Are emergency procedures in place for rescue from the confined spaces?

Manual handling

❒ Can it be avoided where there is risk of injury?

❒ If not, have the risks been assessed and reduced?

Protective clothing

❒ Is suitable equipment provided to protect the head, eyes, hands and feet where appropriate?

❒ Do workers wear their protective equipment?

Amenities and facilities

❒ Has a suitable toilet been provided?

❒ Is there a clean wash basin, hot/warm water, soap and towel?

❒ Is there a room or area where clothes can be dried?

❒ Is wet weather gear provided for those who have to work in wet conditions?

❒ Is there a heated site shed where workers can take shelter and have meals with the facility for boiling water?

❒ Is there a suitable first-aid kit?

Information for personnel

❒ Have staff been trained to carry out their work?

❒ Are staff involved in hazard identification?

❒ Are staff aware of accident reporting/ recording criteria?

❒ Is first aid available?

❒ Has information on hazards been provided to subcontractors and employees?