

What is a Code of Practice?

The term 'Code of Practice' has a particular meaning under the Victorian Occupational Health and Safety Act 1983. Other codes of practice, such as the advisory codes developed by the National Occupational Health and Safety Commission, voluntary codes agreed in an industry, or codes adopted by other or countries do not come within the meaning of the term used in the Victorian Act.

The Victorian Occupational Health and Safety Act 1985 provides for Codes of Practice 'for the purpose of providing practical guidance to employers, self-employed persons and employees....' (S.55[1]).

Codes of Practice are developed by the Victorian Occupational Health and Safety Commission with assistance from the Department of Labour. The Commission is made up of employer, union, expert and government representatives. The Commission recommends the Code of Practice to the Minister for Labour for approval after a period of public review of the draft, and consideration of any comment received. A Code of Practice approved by the Minister for Labour comes into effect when 'notice of approval is published in the Government Gazette or on such later as may be specified in the notice...' (S.55[6]).

A Code of Practice does not have the same legal force as Regulations. Contravention of, or failure to comply with, Regulations made under the Act is an offence (S.47[1]). Failure to observe a provision of an approved Code of Practice is not in itself a breach of the Act (S.55[8]).

However, in proceedings under the Act, where it is alleged that a person contravened or failed to comply with a provision of the Act or the regulations, a relevant approved Code of Practice is admissible as evidence. The court is required to take the matter as proved unless the person is able to show that compliance with the Act or regulations was achieved in some way other than that provided in the approved Code of Practice (S.56). A Health and Safety representative is able to cite an approved Code of Practice in a Provisional Improvement Notice as a means by which the alleged non-compliance may be overcome. Similarly, an Inspector may cite an approved Code of Practice together with the relevant Section of the Act or regulations when issuing an Improvement Notice or Prohibition Notice. In situations where it is impracticable to comply with the literal provisions of a Code, the employer must be able to show that an equivalent or better level of health and safety results from the alternative action taken.

In summary, an approved Code of Practice:

- provides practical guidance;
- should be followed, unless there is another solution which achieves the same result, or a better solution; and
- can be used to support prosecution.

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Definitions

Authorised persons means a person holding the proper accreditation certificate for the equipment to be used.

Falling or Felling means the cutting, chopping or pulling down of standing trees or any part thereof for commercial purposes or as an employee.

Forest operations means work done for hire or reward in:

- (a) the formation, protection (including fire protection) and regeneration of forests;
- (b) all means of obtaining forest produce from forests and plantations;
- (c) loading, transporting and unloading forest produce; or
- (d) clearing, fencing, trenching, roadmaking, draining or otherwise preparing land for forest operations.

Forest produce means wood, whether sawn, split, hewn or otherwise fashioned from hardwood or softwood forests, whether indigenous or exotic, and includes standing trees, felled trees and all produce from forest vegetation.

Forwarding means the extraction of logs from the logging area where the logs are carried clear of the ground by mobile mechanical equipment.

Jinker means a bolster carried on either a single tandem or triaxle and connected to the prime mover by a single hinged pole.

Snigging means the hauling of logs by rope, cable, chain or grapple.

Tractor or Skidder means a tracked or wheeled vehicle used in land clearing operations, harvesting, snigging, loading, forest road and track construction and fire fighting.

Introduction

Authority

This Code of Practice is approved pursuant to section 55 of the Occupational Health and Safety Act 1985 (The Act) and shall have effect from 1 March, 1990.

Section 21 of the Act requires an employer, among other things, to 'provide and maintain so far as is practicable for employees a working environment that is safe and without risks to health' and 'to provide and maintain plant and systems of work that are so far as is practicable safe and without risk to health'.

Section 23 of the Act requires an occupier of a workplace to take such measures as are practicable to ensure that the workplace and the means of access to and egress from the workplace are safe and without risks to health.

Purpose

The purpose of this Code of Practice is to provide practical guidance concerning measures to be taken to prevent injury to persons engaged in forest operations.

Scope

This Code covers the planning, preparation and conduct of work practices in connection with -

- (a) the formation, protection (including fire protection), silviculture, harvesting and regeneration of forests and all means of obtaining forest produce from forests and plantations;
- (b) the loading, transporting and unloading of forest produce; and
- (c) the clearing, fencing, trenching, draining, roadmaking or otherwise preparing of land for forestry purposes.

Interpretation

While this Code aims to provide detailed guidance, it is not possible to deal with every situation which may be found in the workplace. In using this Code discretion and judgement will be needed. In many cases the consultation processes will be able to satisfactorily deal with the issues relating to the application of this Code. In some cases it may be necessary to seek expert assistance in the application of the Code.

What is Practicable?

The Act (S.21) requires an employer to ‘provide and maintain so far as is practicable for employees a working environment that is safe and without risks to health’. ‘Practicable’ is defined in the Act (S.4) in the following manner: ‘Practicable’ means practicable having regard to -

- (a) the severity of the hazard or risk in question;
- (b) the state of knowledge about that hazard or risk and any way of removing or mitigating that hazard or risk,
- (c) the availability and suitability of ways to remove or mitigate that hazard or risk; and
- (d) the cost of removing or mitigating that hazard or risk.

In applying the test of practicability each of the factors are equally important.

1. Risk identification assessment and control**1.1 Risk assessment**

An employer and the occupier should assess the risks to people employed in forest operations in relation to:

- the number of people involved in that operation;
- the skill and experience of the persons involved;
- the general condition of the terrain eg. state of ground, position of stag trees;
- the type of operations to be performed and their requirements;
- the actual and predicted fire behaviour; and
- the type of machinery in use.

1.2 Risk control

Before commencing a forest operation an employer should take steps to ensure:

- that the equipment and substances to be used in that operation are designed and constructed to be as far as practicable safe and without risks to health and safety when properly used, and
- that the work practices carried out in the forestry operation are designed to be as far as practicable safe and without risks to health and safety.

Where it is not practicable to eliminate the risk, as a first priority the workplace and work practices should be redesigned to reduce the risk.

Where redesign still leaves a risk then protective equipment and clothing should be used to further reduce the risk.

1.3 Manual handling

The provisions of the Manual Handling Regulations 1988 and the supporting Code of Practice apply to forest operations.

1.4 First aid

The provisions of the "First Aid in the Workplace" Code of Practice apply to forest operations.

1.5 Facilities and amenities

The provisions of the "Code of Practice for Workplaces" apply to forest operations.

1.6 Responsibility

The employer should ensure that the provisions set out in this Code are applied where appropriate, and where the employer has control over the relevant matters. Some matters such as the siting and design of the log landings will be the responsibility of the occupier and principal contractor

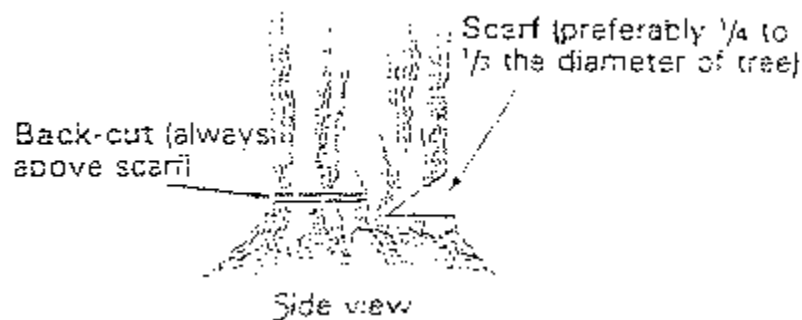
2. Harvesting**2.1 Risk assessment**

Prior to the commencement of harvesting operations and formulation of the coupe plan an employer should make an assessment of the conditions likely to affect the health and safety of persons employed to carry out that operation. This assessment should include forest conditions, weather conditions, ground conditions, slope of the terrain, and tools and equipment used.

2.2 Risk control

Every employer should in respect of work undertaken by any person in felling operations ensure that:

- (a) all felling operations whether manual or mechanical are carried out by persons fully trained in tree-felling techniques and safe work practices who are familiar with the equipment to be used and the tasks to be performed;
- (b) before work commences all trees that present a hazard are brought down or otherwise made safe eg. stag trees, rotten trees, hung up trees etc;
- (c) when manual felling a scarf and a back cut are used. (see figure 1):
- (d) a distance of not less than twice the length of the tree being felled either manually or mechanically is maintained between the faller and other people during felling operations;
- (e) any tree that has been scarfed is immediately brought down;
- (f) in steep country fallers do not work immediately above or below other people;
- (g) all persons in the vicinity of a felling operation are aware when the falling is being carried out;
- (h) any trees that lodge together in falling are pulled down or blown down by use of explosives or otherwise made safe - trees that lodge together should not be felled by use of a chainsaw or by pushing;
- (i) safety signs - (See Figure 2) are displayed where falling or sniggin operations are likely to endanger persons engaged in forest operation. and/or using roads or tracks in the area;



Side view

Figure 1 . Scarf Cut

(j) such safety signs referred are clearly legible and exhibited in positions which will give adequate warning of the operations to any persons approaching such operations;

(k) the signs are triangular, not less than 45 centimetres in length, and bear the words "Tree Felling in Operation" with letters not less than 5 centimetres high;



Figure 2. Safety Sign

(l) where felling benches are used for cutting first, second and third thinnings of softwood timbers they are used only by chainsaw operators fully trained in their use;

(m) no person is required to work alone during falling and extracting operations except where a high standard of safety is in place, for example, where an operator is carrying out work entirely within a properly equipped and guarded machine;

(n) the well being of any person who is required to work beyond sight of another person is checked at least once every 2 hours;

(o) when mechanical harvesting is carried out the persons operating the equipment are fully trained and authorised; and

(p) all employees are trained in the proper use and maintenance of personal protective equipment as detailed in Section 8 when engaged in harvesting operations, and such equipment is used.

2.3 Consultation

In assessing risks associated with harvesting and determining safe work practices for this aspect of forest operations, employers are required to consult with employees as detailed in Section 6.

3. Log landing operations

3.1 General

In designing log landings where these are used, it is essential to have regard to these general conditions:

- (a) the drainage required to maintain the log landing in a reasonable condition;
- (b) the methods to be used to extract the logs to the landing;
- (c) the gradients to the connecting roads; and
- (d) the access required for log transports.

3.2 Location

A log loading area should:

- (a) be positioned in the flattest area and be located where the slope of the ground is not more than 8 degrees;
- (b) be cleared of all hazardous trees;
- (c) have a turning point included where it is necessary for trucks to turn;
- (d) where mobile loaders are used the approach to the truck loading pad should be flat, or slightly uphill, never downhill;
- (e) be kept clear of all hazardous debris; and
- (f) have signs displayed warning persons to keep clear of the log dump area.

3.3 Layout

The log landing is the focus of a forest logging operation and should be planned and constructed for the safe and efficient handling of logs. Landing layout should be designed so that anyone arriving at the landing will be visible to the operators. The area should allow for (in addition to the dumping of logs):

- (a) a fuel storage and equipment servicing area;
- (b) an area designated for parking logging machines and equipment. This area should be adjacent to the fuel storage and service area wherever possible;
- (c) clearance for the efficient loading of logs including the truck entrance and exit;
- (d) a log debarking, grading, cutting and stacking area;
- (e) effective snigging tracks;
- (f) the area set aside for the loading of trucks to be situated near the exit to the edge of the landing, to minimise the disruption to other activities by truck manoeuvring and loading;
- (g) the log storage to be close to the truck loading area. The log stack should be, where possible, at right angles to the loading pad so that the loader used need only make a single turn from stack to truck (See Figure 3).
- (h) the most commonly loaded product to be stacked closest to the equipment used for loading; and
- (i) log landings to be large enough to enable activities carried out on them to be safe and with as little intrusion as possible between each task.

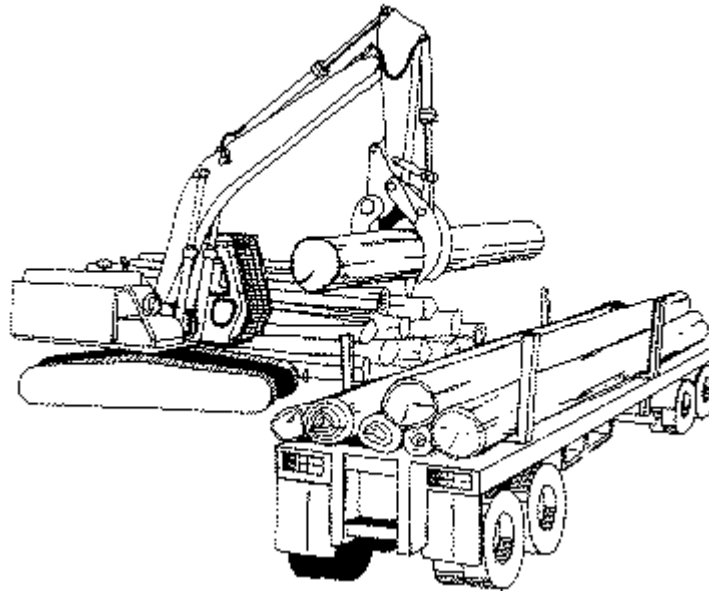


Figure 3. Log Landing operations showing proximity of the log stack to the truck loading area [3.3 (c) & (g)]

3.4 Log loading

Only authorised persons should operate log loading machines. A communication system should be established to indicate movements of loaders and trucks in the loading area. When skid-log loading-ramps are used they should be positioned level with the trays of trucks and tractor bolsters. Bolsters should be left in the horizontal position for loading. (Section 4 deals with transportation of forest produce. Section 7 deals with equipment safety).

3.5 Consultation

Occupiers/Employers should consult with employees on the location and layout of log landings. See Section 6 for further advice on consultation.

4. Transportation

This Section deals with the loading, transport and unloading of forest produce.

An employer or an owner should ensure that any vehicle used in a forest operation is roadworthy, and that:

- (a) every person accredited to drive such vehicles is the holder of a current endorsed driving licence appropriate to the type of vehicle concerned;
- (b) each vehicle is equipped with sufficient quantities of binder chains, steel log chocks, vertical metal stanchions and chain tensioners having regard to the load to be carted;
- (c) bolsters are in good condition and securely attached to the chassis members;
- (d) vertical metal stanchions are secured to the trailer and are of sufficient strength, and located so as to support and contain the load during transit;
- (e) stanchions are not bent, cracked or loose in their mountings;
- (f) extension pins are a close fit and securely bolted, or pinned to the stanchion;

- (g) release stanchions are fitted with opposite side safety releases, fittings should be secure and the cables not frayed, wire ropes should be steel cored and not less than 19mm in diameter for jinkers, 16mm diameter for skeletal. High tensile chain can be used, 13mm diameter for jinkers, 7mm diameter for skeletal;
- (h) where forest produce exceeding 2.5 metres but less than 6 metres in length is carried at least two binder chains or straps securely attached to the vehicle are used:
- (i) where forest produce less than 2.5 metres is carried one binder chain may be used provided the load does not protrude above the stanchions and a chain tensioner is fitted;
- (j) forest produce exceeding 6 metres and less than 12 metres in length is secured with two straps or chains per bay;
- (k) four straps or chains are used to secure 12 metre logs to skeletal trailers (See Figure 4), two chains and a belly chain are used on jinker loads (straps are not to be used)-
- (i) Chains should be high tensile and not less than 7mm in diameter;
 - (ii) Two additional belly chains should be used when short logs are placed on top of load. Where possible short logs should be cradled between longer logs;
 - (iii) The strapping should be at least 38 mm wide and, in accordance with AS1753 "straps should be secured to the vehicle by appropriate devices and should not be twisted or knotted between securing points"; and
 - (iv) chain tensioners should be used to tighten all chains. Load Binders (dogs) with a minimum capacity of 8000 kg are to be used;

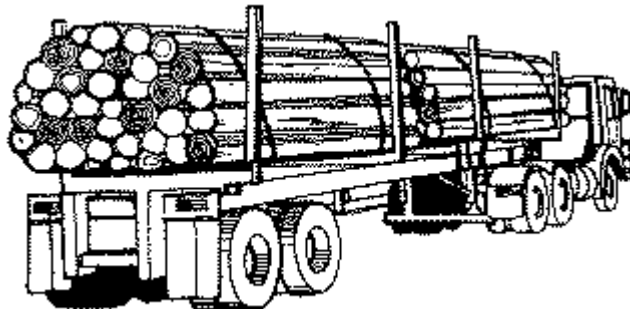


Figure 4. Transportation of logs illustrating the use of chains in securing the load so that the chains contact every log on the outside of the load. [4 (k) & (n)]

- (l) chain and straps are checked regularly for wear, damage and stretching. Any chains or straps showing defects should be replaced;
- (m) all vehicles used for the carting of logs are fitted with a cabin guard of a sufficient strength to protect the cabin from moving logs;
- (n) when loading logs onto the vehicle care is taken to ensure the outer logs have no more than half their diameter above the top of the stanchion; The load should be "crowned" so the chain contacts every log on the outside of the load (See Figure 4);
- (o) automatic reversing signals either by horn or flashing light are fitted to equipment used in the stockpiling or shifting of logs;
- (p) no loading or unloading takes place outside of daylight hours unless the area is adequately lit;

- (q) people do not ride on the vehicles except on a seat provided in the cabin or as designed;
- (r) the width of the loaded vehicle is not more than 2.5 metres, including large protruding branches;
- (s) chains and straps restraining the load are not released until the unloading point is reached;
- (t) before restraints are released the load is checked for hazards and restraints are not released before the unloading machine is positioned to prevent logs falling. Special care should be taken where short logs are involved;
- (u) restraints are released by the "opposite side safety release" away from the unloading machine;
- (v) during unloading the driver should be clear of the truck and in full view of the loader operator; and
- (w) when returning empty with the jinker carried, the jinker is secured to the prime mover with either a latching mechanism and a safety chain or two chains.

5. Fire Protection

5.1 Risk assessment

The risk involved in work at any fire should be assessed before the work commences. This assessment should take account of all factors relating to the current and forecast weather and fire conditions, with particular regard given to the safety of firefighters. In addition, when preparing a plan of action, consideration needs to be given to the specific skills of the firefighters, and the available resources and equipment as well as the access to and from the fire scene.

5.2 Risk control

The employer of any person working on a fire should ensure that:

- (a) all firefighters are trained and proficient in the accepted fire fighting techniques, proper use of equipment and basic fire behaviour and safety;
- (b) all firefighters use the appropriate personal equipment as detailed in Section 8;
- (c) felling operations at a fire are not to be regarded as harvesting in the sense of this Code. However where practicable the safety provisions for harvesting (Section 2) should apply. Safety signs need not be displayed provided that other people in the vicinity are alerted via the existing fire communication network, and are in communication with the felling team and observe the specified clearance distances. Road and tracks in the area should be closed if there is danger to other emergency or non-emergency service people;
- (d) plant and equipment operators do not work alone unless they are able to immediately communicate with other nearby firefighters in the event of an emergency;
- (e) the machinery and equipment safety standards outlined in this Code are applied to fire operations. In addition tractors operated at night should be fitted with at least one forward and one rear light to permit safe working;
- (f) firefighters working in close proximity to plant and equipment do so where practicable with the knowledge and agreement of the operator, and in accord with any instructions issued by that operator;

(g) while at a fire and when considered appropriate by the supervisor, employees are permitted to work from the rear of moving vehicles, such as tankers and vehicle mounted flame throwers, which have been designed for such use. While in transit to and from fires employees must be seated according to the legal requirements for passenger vehicles; and

(h) firefighters working in close proximity to any aircraft abide with all directions given by the on-ground Marshal or Pilot. Firefighters in the "drop-zone" of aircraft aerially applying water, foam or retardant should follow all safety and work instructions given by the supervisor.

5.3 Consultation

Ongoing consultation should take place with employees during training exercises and actual fire operations. All firefighters should be aware of the command structure, ensure the safety of other firefighters and follow all instructions issued by supervising officers.

6. Consultation

Employers should consult with employees required to work in forest operations and with the health and safety representatives for the relevant designated work groups.

Consultation should take place as early as possible in planning for the introduction of new or modified tasks or in the review of existing tasks, to allow for changes arising from the consultation. Employees should be consulted when a particular control measure is proposed or when the effectiveness of implemented control measures is being reviewed.

Consultation is required with the relevant health and safety representative throughout this process, under Section. 31(2) of the Occupational Health and Safety Act 1985.

This consultation could occur:

- (a) when the employer is identifying the problem areas in order to establish priorities for assessment;
- (b) when the employer has decided to embark on a strategy or process for addressing forest operation problems which may affect the representative's designated work group;
- (c) when determining the approach and method to be used in assessing a forest operation task; and
- (d) when decisions are being taken on various control measures to reduce risk factors.

7. Machinery and Equipment Safety

7.1 An employer (of people working on a logging site) should ensure that:

- (a) all power driven machinery and equipment provided for people to use on a logging site is maintained in a safe condition;
- (b) all dangerous parts of power driven machinery and equipment are securely guarded and that these guards are constantly maintained in an efficient state;
- (c) if a guard is removed for maintenance or repair it is replaced before the machinery or equipment is re-used;
- (d) where necessary on machinery steps and handholds are provided and maintained;
- (e) where practicable seat belts are provided on machinery;

- (f) that machinery is not left unattended when running;
- (g) all hydraulic equipment is bedded or at rest before being maintained and/or left unattended;
- (h) no equipment is used within 6 metres of overhead power lines at full stretch. Where this is unavoidable, the relevant power authority should supervise the safety of the operation;
- (i) all machinery is equipped with fire suppression equipment in accordance with appropriate regulations;
- (j) reversing horns and flashing lights fitted to machinery are maintained in working order;
- (k) all operators are made aware of the hazards from the pressures used in hydraulic systems and the risks to health of handling hydraulic fluids without taking proper safety precautions; and
- (l) where machinery noise exposure exceeds statutory levels the noise level is displayed in the cabin. New machinery should have cabin noise levels indicated within the cabin whether or not hearing protection is required.

7.2 Tractor or log skidder.

The owner/operator of any tractor loader or skidder should ensure that the equipment is properly maintained and kept in a safe condition, and that,

- (a) such machines are equipped with a properly designed and constructed cabin or a metal canopy to protect the driver from injury against falling objects and from objects projected towards the driver from the rear (See Figure 5). (See AS2294 - Protective structures for operators of earth moving machines.);
- (b) the metal canopy is of sufficient strength for its intended purpose, allows the driver good vision and affords easy egress from the driver's seat in an emergency.
- (c) all enclosed cabins fitted to machinery have a separate escape exit in addition to the door provided;
- (d) no person operates a tractor loader or snigging machine in a forest operation unless that person is authorised to do so, and has been instructed in and fully understands the operation of the equipment;
- (e) no person rides on any part of the tractor loader or skidder other than on the seat provided;
- (f) where appropriate a roll-over protective structure (see AS 1636 -Agricultural Wheeled Tractors - Rollover Protective Structures -Criteria and Tests) is fitted; and
- (g) all front end loaders are fitted with hydraulic securing clamps on the loading attachment.

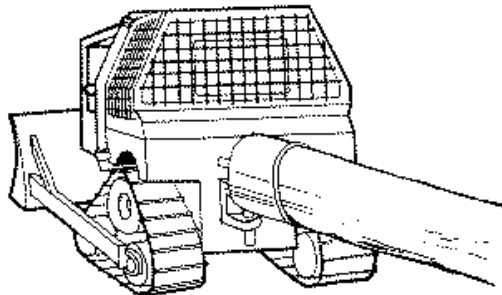


Figure 5: Log skidder showing a properly designed and constructed cabin which protects the operator from objects falling from above and projecting towards the driver from the rear. (7.2 (a) & (b))

7.3 Hand tools

An employer should ensure that any hand tool used by an employee is of safe construction and is kept and maintained in a safe condition.

A employee in a forest operation should not use any hand tool which is not of safe construction and maintained in a safe condition

7.4 Chain saws

The owner of any chainsaw should ensure that the equipment is properly maintained and is operated by an authorised operator. The chain saw should be kept in good condition and AS 2727 Chainsaws - Guide to Safe Working Practices should be complied with. All chainsaws should be equipped with a reliable on/off switch, chain catcher, rear hand guard, anti-vibration handle mountings, throttle lockout, efficient muffler, chain brake and front hand guard. (See AS 2726 –Chainsaw Safety Requirements).

7.5 Brushcutters

The owner of any brushcutter should ensure that the equipment is properly maintained in good condition. AS 3576 - Brushcutters - Guide to Safe Working Practices should be complied with. All brushcutters should be equipped with a reliable on/off switch, a centrifugal clutch, a throttle lock out, an effective speed control, and a suitable guard for the cutting equipment used. (See AS 3575 – Brushcutters Safety Requirements).

8. Personal Protective Equipment

8.1 General

This Section is intended to give guidance on personal protective equipment to be provided by the employer. (See Figure 6). Dependent on the processes, equipment or other relevant conditions the following should be included

- safety helmets;
- safety gloves;
- safety footwear;
- eye protection;
- hearing protection;
- high visibility clothing;
- leg protection: and
- respiratory protection devices

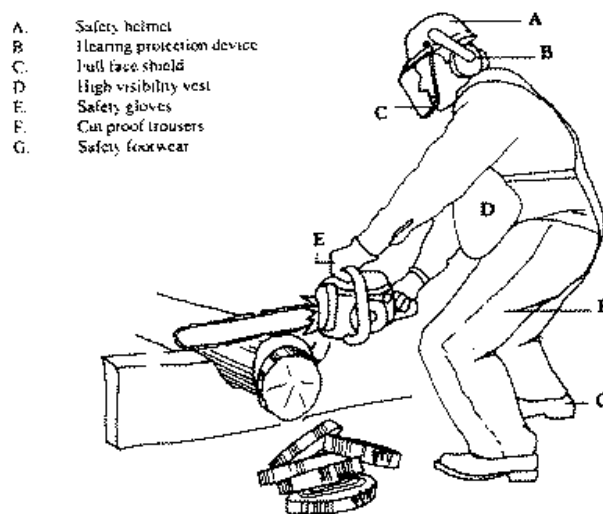


Figure 6. Personal Protective Equipment.

Prior to the commencement of a forest operation the employer should assess the conditions likely to affect the health and safety of persons employed to carry out the work and arrange for the provision and use of the appropriate protective equipment. Such a process of assessment should include the consultation of employees as detailed in Section 6. The selection, fit and maintenance of personal protective equipment is an important part of any protection program.

In selecting the most appropriate personal protective equipment, the employer should consider such factors as:

- the nature and degree of exposure to risk;
- the protection offered by equipment selected;
- the fit of such equipment for the wearer;
- wearability and comfort;
- the length of time the equipment is to be worn;
- the ease of maintenance of such equipment and the availability of replacement parts where applicable; and
- the limitations on performance of equipment as stated in the appropriate Australian Standard or issued by the manufacturer.

It is much more likely that equipment chosen will be acceptable if the wearer is consulted on the choice. Equipment is more likely to be worn properly if it is comfortable.

The employer should also ensure that all those who wear, issue or service personal protective equipment are trained for these tasks. Such training should include:

- information on the nature of the risk the personal protective equipment is to protect against;
- the type of protection afforded by such equipment;
- the reasons for selection of particular equipment and its limitations and capabilities;
- the importance of proper fit, use and maintenance of personal protective equipment; and
- protective clothing suitable for forestry work should be made of light durable materials which provide satisfactory body ventilation. Protective clothing should be designed to provide the wearer with reasonable comfort during prolonged use.

Fire Operations

Employers should alert all employees to the hazards of wearing flammable fabrics, such as nylon or synthetic socks, shirts or vests at fires. Firefighters should wear overalls of a suitable material and colour to provide full-coverage protection from heat radiation, sparks etc as well as being highly visible for day or night work. Safety helmets are to be worn at all times on the fire line. Goggles and smoke masks should be made available when needed.

8.2 Personal protective equipment requirements

(a) Helmets

An industrial safety helmet and appropriate accessories conforming to **A.S. 1801- Industrial Safety Helmets** and **A.S. 1800- The Selection, Care and Use of Industrial Safety Helmets** should be provided to each person exposed to the risk of head injury. The helmets provided should be worn at all times when a person is working in forest or associated operations. An employer need not provide a helmet when there is no likelihood of being struck by objects falling from above such as when a person is:

- (i) working in or about a forest seed nursery;
- (ii) engaged in any planting in a fully cleared area; or
- (iii) working in a fully enclosed cabin.

(b) Safety footwear

Appropriate safety footwear conforming to **A.S 2210 - Safety Footwear** should be provided to all persons engaged in forest operations. Safety footwear provided should be worn at all times while persons are engaged in forest operations.

Safety footwear should be replaced when it no longer provides the protection intended. For example: damaged or worn soles may cause slippage, and inability to fasten securely may create a hazard.

(c) Hearing protection

An employee's exposure to noise in forest and associated operation should not exceed regulatory limits in relation to legislation for noise control in workplaces. All persons engaged in forest operations should be provided with hearing protection relevant to the work performed - that is, where exposure to noise exceeds the regulatory limits.

The relevant hearing protection should be established by referring to **AS 1269 Hearing Conservation** and **AS 1270-Hearing Protection Devices**. The hearing protection provided should be worn at all times a person is exposed to risk e.g. chainsaw operations, machine operators. Where practicable hearing protection devices should be attached to a helmet in such a manner that they will not catch on branches or other objects.

(d) Leg protectors

Protective clothing should be provided to persons exposed to risk of injury from accidentally touching the legs with a chainsaw, or brushcutter. Trousers that are resistant to cutting by a chainsaw or brushcutter are preferred to chaps. The trousers should be full length and provide cut protection for the legs and groin. In cases where full length trousers cannot be worn, chaps providing the same protection should be worn. The trousers or chaps should be worn at all times a risk exists. They should be replaced when they no longer provide full protection.

(e) Safety gloves

Gloves conforming to AS 2161 - **Australian Standard Industrial Safety Gloves and Mittens** should be provided to persons requiring hand protection, eg. persons engaged in chain saw operations carried out -in cold or wet conditions and when using wire ropes (gloves need not be worn when using chainsaws with heated handles). Gloves or mittens provided for persons working in forest operations should provide protection for the hands, wrists, and part of the forearms. Gloves or mittens should be of appropriate strength for the work performed. The gloves or mittens should be worn at all times a worker is exposed to risk. They should be replaced when they no longer provide full protection.

(f) **Eye protection**

Eye protection conforming to **AS 1336 Recommended Practices for Eye Protection in the Industrial Environment** should be provided to all persons who will be exposed to risk of injury. That injury may arise from being struck in the eye by flying dust, woodchips etc. The eye protection provided should be either safety glasses or full face shields which are impact resistant, allow maximum vision and ventilation, and are capable of accommodating the wearing of prescription spectacles. Eye protection should be worn at all times by persons exposed to risk. Eye protectors should be provided for the exclusive use of each person.

(g) **High visibility clothing**

An outer garment made of highly visible iridescent materials should be worn at all times when a person is engaged in a forest operation. If any night work is to be carried out the high visibility clothing worn should contain a degree of luminosity. This night work could include firefighting, harvesting and/or loading operations.

(h) **Respiratory protective devices**

Where persons engaged in forest operations are exposed to dust or fumes that may be injurious to their health suitable respiratory devices conforming to **AS 1716 - Respiratory Protective Devices** should be provided.

The respiratory devices provided should be worn at all times while persons are exposed to risks. Proper selection and fit of respiratory devices is essential if wearers are to receive adequate protection. In selecting and using respiratory protective devices the employer should ensure that in addition to the factors relating to selection detailed earlier the issue of facial fit for the wearer should be considered. The employer should ensure that the equipment is fit tested on the wearer. If a proper fit cannot be achieved with one type, model or size of respiratory protective device, another which does fit must be selected.

The wearer should be trained in the method of fit testing respiratory devices. This fit testing needs to occur whenever the device is used. The respiratory devices provided should be cared for and maintained in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices.

9. Training and supervision

9.1 Employer's responsibility

Section 21 (2) (e) of the Occupational Health and Safety Act 1985 requires employers "to provide such information, instruction, training and supervision to employees as are necessary to enable the employees to perform their work in a manner that is safe and without risks to health".

Employers should not allow an employee to undertake any work unless the employee has been adequately trained and instructed in the performance of, and the danger associated with that work, and in any safety precautions that should be taken in order to carry out the work safely and without risks.

Employers should not permit an employee to operate any power-driven tool, machine or equipment before that employee has been fully trained and instructed in its operation.

The training and instruction should include site instructions, "in house" training programs, and components of formal training. These should cover where applicable:

- (a) the work methods to be used for the falling, snigging, and loading of forest produce;
- (b) the correct method to be used in road construction;
- (c) the correct use, care, and storage of tools and equipment to be used;

(d) the correct use, care and storage of personal protective equipment;

(e) procedures to be adopted in the case of fire; and

(f) procedures to be adopted in the event of accident or injury. Employees engaged in fire operations should be instructed in fire fighting techniques, the proper use of equipment, basic fire behaviour and safety.

9.2 Training program

An effective training programme should have the following features:

- a careful analysis of training needs which identifies the tasks to be performed and the knowledge, skills and attitudes required;
- identification of the correct standards to be achieved as a result of training; and
- program design which encompasses -
 - (a) entry standards for learners;
 - (b) learning objectives;
 - (c) selection of training media;
 - (d) adequate testing; and
 - (e) evaluation of results in relation to their usefulness to the industry.

9.3 On the job instruction

Where on the job training is used, instruction should only be given by experienced operators who have been trained and received accreditation in safe working practices and have successfully completed training in instruction techniques.

9.4 Safety

Safety should, as far as possible be integrated as part of the required work practice. Safety should be highlighted as a key point. However, it is generally undesirable to separate from other key points as the trainee may then perceive it as being additional to normal work performance, rather than as an integral part.

9.5 Training

All persons engaged in the forest operations need further training when:

- (a) new methods, new equipment, or new rules are introduced; or
- (b) the type of operation changes.

Bibliography**OCCUPATIONAL HEALTH AND SAFETY ACT 1985.**

Occupational Health and Safety (Manual Handling) Regulations 1988.
Health (Hearing Conservation) Regulations 1978.
First Aid in the Workplace Code of Practice 1988.
Code of Practice - Manual Handling 1988.
Code of Practice for Workplaces 1988.

A.S. 1269	Hearing Conservation Code
A.S. 1270	Hearing Protection Devices
A.S. 1336	Recommended Practices for Eye Protection in the Industrial Environment
A.S. 1636	Agricultural Wheeled Tractors - Roll-over Protection Structures – Criteria and Tests
A.S. 1715	Selection, use and Maintenance of Respiratory Protective Devices
A.S. 1716	Respiratory Protective Devices
A.S. 1753	Webbing for Restraining Devices for Occupants of Motor Vehicles
A.S. 1800	The Selection, Care and use of Industrial Safety Helmets
A.S. 1801	Industrial Safety Helmets
A.S. 2161	Australian Standard Industrial Safety Gloves and Mittens
A.S. 2210	Safety Footwear
A.S. 2294	Protective Structures for Operators of Earthmoving Machinery
A.S. 2726	Chainsaw Safety Requirements
A.S. 2727	Chainsaws – Guide to Safe Working Practices
A.S. 3575	Brush Cutters - Safety Requirements
A.S. 3576	Brush Cutters – Guide to Safe Working Practices

To obtain further information on the above standards, contact:

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