



PLEASE NOTE

This consolidation is not an official statement of the law. It is an office consolidation prepared by the Legislative Counsel Office for convenience of reference only and the office assumes no responsibility for the accuracy or reliability of this consolidation. For all purposes of interpreting and applying the law, users should consult the authoritative text published in the Royal Gazette.

CHAPTER O-1**OCCUPATIONAL HEALTH AND SAFETY ACT****REGULATIONS**

Pursuant to section 34 of the *Occupational Health and Safety Act* R.S.P.E.I. 1988, Cap. O-1, Council made the following regulations:

PART 1**DEFINITIONS AND APPLICATION**

Definitions in Act	1.1 All definitions presently in the <i>Occupational Health and Safety Act</i> R.S.P.E.I. 1988, Cap. O-1 apply in these regulations. (EC180/87)
Employer to ensure compliance	1.2 Unless otherwise indicated the employer shall ensure compliance with these regulations. (EC180/87)
Measurement	1.3 The values given in International Metric (S.I.) units are to be considered the standard. The values in parenthesis are for information only. (EC180/87)
Definitions	1.4 In these regulations (a) "A.C.G.I.H." means the American Conference of Governmental Industrial Hygienists; (b) "Act" means the <i>Occupational Health and Safety Act</i> R.S.P.E.I. 1988, Cap. O-1; (c) "A.N.S.I." means American National Standard Institute; (d) "approved" means any recognized standard or level which is acceptable to the Director; (e) "C.S.A." means the Canadian Standards Association; (f) "competent person" in relation to an employee, means adequately qualified, suitably trained, and with sufficient experience, as determined by the Director, to safely perform work that is the subject matter of the relevant provision. (EC180/87)
Inspection of codes and standards	1.5 A copy of all indices, standards, codes, Acts and regulations referred to in these regulations is available for inspection at the office of the Workers Compensation Board, Employer Services Division. (EC180/87; 639/93; 504/96)
Waiver	1.6 The Director may waive the application of these regulations to a particular workplace if he is satisfied that acceptable safety standards will be observed at that workplace. (EC180/87)

PART 2
TOILET AND WASHING FACILITIES

2.1 An officer may waive the requirements of this Part where work is carried on outdoors away from inhabited areas by small groups of employees and the place of work is constantly changing. (EC180/87)

Application

2.2 Every employer shall at each workplace provide proper toilet facilities which shall be maintained and kept clean and shall have adequate provision for privacy, heat, light and ventilation. (EC180/87)

Toilet facilities

2.3 Every employer shall ensure that toilet facilities are maintained in proper working order at all times. (EC180/87)

Maintenance

2.4 Where fewer than ten persons are employed, the employer shall provide washroom and toilet facilities in a room having a proper door with a locking device on the inside. (EC180/87)

Privacy

2.5 Where ten or more persons are employed, the employer shall provide separate washrooms and toilet facilities for each sex with a locking device on the inside. (EC180/87)

Separate facilities

2.6 (1) In every place of employment where running water is available, the employer shall provide

Requirements

(a) toilet facilities in accordance with the following table:

No. of Persons	Facilities
1 to 9	1
10 to 24	2
25 to 49	3
50 to 74	4
75 to 100	5
Over 100	(1 for each additional 30 persons)

(b) a supply of toilet tissue for each toilet at all times and washable covered receptacles for waste;

(c) adequate and suitable facilities for personal washing including a supply of clean hot and cold running water, soap, towels or other suitable means of washing and drying.

(2) Where more than two toilets are required for male employees the employer may substitute urinals for up to of the required number of toilets.

Idem

(3) Where the health or safety of the employees may be endangered by the presence of poisonous, irritating or infectious material

Poisonous, irritating
or infectious
material, washing
facilities

- (a) quick acting deluge showers and eye wash fountains which conform to ANSI Standard Z 358.1 shall be installed upon an order issued by an officer;
- (b) separate shower rooms shall be provided for male and female employees except where fewer than six persons are employed in which case the employer shall provide a shower room having a door that has a locking device on the inside;
- (c) floors of shower rooms must have a non-slip surface;
- (d) the employer shall ensure that at every workplace the water supply, used for washing and showers can be manually adjusted to come within a range of 35 C and 45 C and is not heated by injecting steam into water. (EC180/87)

Chemical toilets

2.7 In workplaces where running water is not available the employer shall provide privies, chemical toilets, or other types of toilets and facilities for handwashing to the satisfaction of an officer. (EC180/87)

Requirements

2.8 Every employer shall ensure that all chemical toilets or privies are

- (a) provided from the start of the project;
- (b) constructed so that any user is sheltered from view and protected from weather and flying objects;
- (c) adequately heated in cold weather;
- (d) provided with adequate supplies of disinfectant;
- (e) maintained in a clean and sanitary condition. (EC180/87)

PART 3 DRINKING WATER

Potable water

3.1 At every workplace the employer shall provide an adequate supply of water suitable for drinking that is readily accessible for employees, and when necessary for identification clearly marked "Drinking Water". (EC180/87)

Containers

3.2 The employer shall ensure that where drinking water is not taken directly from a water pipe it is contained in a clean covered container equipped with a drain faucet. (EC180/87)

Cups

3.3 The employer shall provide a supply of individual drinking cups except where the water is delivered in an upward jet from which employees may conveniently drink. (EC180/87)

PART 4 LUNCH ROOMS OR EATING AREAS

Lunch and rest
room

4.1 In every workplace the employer shall provide a clean lunch and rest room that

- (a) does not have a door opening directly into a toilet facility;
- (b) is separate from any place where there is the possibility of food being contaminated by a dangerous substance;
- (c) is not used for any purpose that is incompatible with its use as a lunch room;
- (d) is adequately provided with
 - (i) light, heat and ventilation,
 - (ii) hand cleansing and drying facilities in close proximity,
 - (iii) sufficient tables and seating facilities for the use of employees,
 - (iv) suitable covered receptacles for the disposal of food; and
- (e) is kept in a sanitary condition. (EC180/87)

4.2 Exclusions to this regulation may be made by the officer. (EC180/87) Exclusions

4.3 No employee shall convey food or drink into a room where any process that may contaminate the food and drink is being carried out. (EC180/87) Conveyance of food

PART 5 HOUSEKEEPING - GENERAL PROVISIONS

- 5.1** In every workplace the employer shall ensure that General safety requirements
- (a) all personal service rooms such as locker rooms, lunch rooms, canteens, wash rooms and rest rooms shall
 - (i) be kept free of insects or vermin of any kind,
 - (ii) be maintained in a bright, clean and sanitary condition at all times, and
 - (iii) be adequately ventilated;
 - (b) surfaces of walls and ceilings, including windows and skylights, shall be kept clean and in a good state of repair;
 - (c) the floor space of any building or work area shall not be so crowded with machinery, products or materials as to constitute a hazard to employees;
 - (d) sufficient space shall be provided around individual machines or process units to allow for normal operation, adjustments and repairs;
 - (e) protruding nails in boards, walls, lumber or scrap materials shall be removed so as not to constitute a hazard;
 - (f) floors shall be even and free from anything which may create a stumbling hazard;
 - (g) floors shall be kept dry and in a non-slippery condition except in areas where floors remain wet because of the work process;
 - (h) where an employee is required to work on a wet floor, suitable foot wear shall be worn;

- (i) every precaution shall be taken to prevent gasoline, oil or grease being spilled on floors; if gasoline, oil or grease is spilled on floors so as to constitute a slipping or fire hazard, the area affected shall be cleaned up immediately;
- (j) combustible materials such as shavings, waste, oily rags, etc., shall not be allowed to accumulate on floors, benches or in places where they would constitute a fire hazard;
- (k) flammable rubbish, weeds and grass shall not be allowed to accumulate in yards around buildings or around flammable material storage;
- (l) waste chemicals such as heat producing (oxidizing) compounds shall be disposed of in safe areas;
- (m) suitable receptacles of substantial construction which shall not leak shall be provided for the disposal of rubbish;
- (n) waste material and debris shall be removed daily, or more often if necessary, from the building or structure to a suitable disposal area to prevent a hazardous condition;
- (o) waste material and debris shall
 - (i) not be permitted to fall freely from one level to another, and
 - (ii) be lowered by chute, or in a suitable container;
- (p) work areas shall be cleaned as often as necessary considering the nature of work carried on;
- (q) where cleaning must be done during working hours i.e. sweeping, every effort shall be made to prevent dust;
- (r) scrap materials, parts, etc., shall be properly disposed of when a job is completed;
- (s) every scaffold, runway, stairway, passageway and ramp shall
 - (i) be kept clear of obstructions at all times,
 - (ii) be kept clear of ice, snow or other slippery materials, and
 - (iii) when necessary to ensure firm footing, be sprinkled with sand or other suitable abrasive material;
- (t) small tools and gear shall, at the end of each work shift, be collected and stored in a suitable place;
- (u) passageways shall be sufficiently wide and shall not be blocked by the piling of material, but shall be kept clear of obstruction at all times. (EC180/87)

Care of tools

5.2 No persons shall place any tool or other object where it may endanger other employees. (EC180/87)

Changing room

5.3 The employer shall provide a changing room if the nature of the work by an employee makes it necessary for the employee to change from street clothes for safety or health reasons. (EC180/87)

PART 6
ILLUMINATION

6.1 Every employer shall provide, while employees are present, lighting sufficient and suitable for work to be done in every workplace. (EC180/87)

Lighting

6.2 All work areas shall be illuminated with a minimum lighting intensity, measured in lux at a point 762 mm (30 in.) above the floor, as follows:

Illumination of
work areas

GENERAL LIGHTING

(a) Seldom Used Areas 100 lux
(10 f.c.)

(When repair or maintenance work is to be done in such areas, temporary supplementary lighting will be necessary.)

(b) Frequently Used Areas 300 lux
(30 f.c.)

(When repair or maintenance work is to be done in such areas, temporary supplementary lighting will be necessary.)

(c) Continuously Used Areas 500 lux
(50 f.c.)

(These may include hallways, aisles, areas around moving machinery, etc.)

(d) Offices 650 lux - 750 lux
(65 f.c. - 75 f.c.)

(e) For specific areas other than as mentioned above an officer shall determine the required illumination.

EMERGENCY LIGHTING

Emergency lighting shall be provided in places of employment normally used during periods of darkness. Such emergency lighting shall provide a minimum level of 10 lux (1 f.c.) at all means of egress from the place of employment. (EC180/87)

6.3 The employer shall ensure that in an area of a building where a failure of the regular lighting system would create conditions which might endanger the safety of any person in the building, emergency lighting is provided which

Emergency lighting

- (a) turns on automatically when the regular lighting fails;
- (b) is independent of the regular lighting source;
- (c) provides adequate lighting for evacuation of the area; and
- (d) is tested at least once every three months to ensure the system will function in an emergency, but not less frequently than recommended by the manufacturer. (EC180/87)

**PART 7
TEMPORARY HEAT**

- Storage of fuel** **7.1** The employer shall ensure that liquid fuel or gas for a temporary heating device in excess of one day's supply shall
- (a) be stored in safe conditions;
 - (b) not be stored in a building or structure unless in a fire resistant room constructed for the purpose;
 - (c) not be stored adjacent to a means of egress. (EC180/87)
- Safety requirement** **7.2** The employer shall ensure that a fuel fired heating device, including a temporary furnace
- (a) shall be placed on the ground or on a non-combustible floor, but it may be placed upon a wooden floor if it is separated therefrom by 76 mm (3 in.) of non-combustible material covered by sheet metal and extending 600 mm (23.6 in.) beyond all sides of the device;
 - (b) shall be so located, protected and used that it will not ignite
 - (i) tarpaulins or similar temporary enclosures, or
 - (ii) wood or other combustible materials;
 - (c) shall be provided with a securely supported short metal pipe to discharge the products of combustion outdoors where necessary;
 - (d) shall, where specified by the manufacturer, be vented to the outside atmosphere to remove harmful or noxious fumes;
 - (e) shall be used only where there is adequate general ventilation while employees are in the building or structure. (EC180/87)
- Portable heaters** **7.3** The employer shall ensure that portable heaters are not
- (a) used in a confined space;
 - (b) located in or adjacent to a means of egress. (EC180/87)
- Fire extinguishers** **7.4** An approved fire extinguisher of adequate size shall be readily available at the location of every temporary heating device. (EC180/87)
- Steam piping** **7.5** Temporary steam piping shall be
- (a) securely supported; and
 - (b) insulated or protected by screens or guards where employees are likely to accidentally come into contact with the piping. (EC180/87)

**PART 8
NOISE**

- General standard** **8.1** Criteria for permissible noise levels shall be the "Threshold Limit Value" or "TLV" as prescribed by the American Conference of Governmental Industrial Hygienists in the publication "Threshold Limit Values and Biological Exposure Indices for 1985-86" (with annual update). (EC180/87)

8.2 When employees are required to work in areas in which the noise levels exceed the criteria for permissible noise exposure as outlined in Table I

Protection from
excessive noise

- (a) the employer shall first take appropriate measures to reduce the noise intensity to an acceptable level; or
- (b) if it is not practicable to reduce the noise to an acceptable level or isolate the employees from the noise, the employees shall wear approved hearing protection which shall be provided by the employer. (EC180/87)

8.3 The employer shall ensure that at every workplace, any area where the sound level exceeds 85 dBA is clearly marked with a sign that

Warning signs

- (a) indicates the range of noise levels measured;
- (b) warns individuals that there is a potential hazard; and
- (c) warns that hearing protection * must be worn when the daily exposure is more than that permitted for the particular sound level. (EC180/87)

8.4 The employer shall ensure that all employees exposed to noise levels as outlined in Table I and Table II of this regulation shall have an audiometric test, at the beginning of employment, and then once a year thereafter.

Audiometric testing

TABLE I
CONTINUOUS NOISE

Duration Per Day Hours	Sound Level in dBA
16	80
8	85
4	90
2	95
1	100
½	105
¼	110
1/8	115 **

* Requirements for hearing protection equipment are outlined in Part 45.

** No exposure to continuous or intermittent noise in excess of 115 dBA.

TABLE II
THRESHOLD LIMIT VALUES IMPULSIVE OR IMPACT NOISE

Sound Level dBA	Permitted Number of Impulses or Impacts Per Day
140	100
130	1000
120	10000

(See section 45.12 for hearing protection requirements)

(EC180/87)

PART 9
FIRST AID

First aid supplies	9.1 At every workplace the employer shall provide first aid supplies and services as required by this Part. (EC180/87)
Storage	9.2 First aid supplies and equipment shall be kept clean and dry. (EC180/87)
Signs	9.3 Signs showing the location of first aid supplies and services shall be posted in conspicuous places in the working areas. (EC180/87)
Use of services	9.4 An employee, upon sustaining an injury, shall immediately avail himself of the first aid services provided by the employer. (EC180/87)
Kit 1, less than five employees	9.5 Every employer employing less than five employees shall provide and maintain the following first aid supplies, easily accessible, defined as Kit No.1: <ul style="list-style-type: none"> (i) a first aid manual (ii) a first aid record book (iii) 1 pack safety pins (iv) 1 splinter tweezers (v) 1 pair scissors (vi) approximately 30 band-aids, assorted sizes (vii) 1 pkg. cotton tipped applicators (viii) 2 triangular bandages (ix) 1 roll adhesive tape (x) 2 eye pads (xi) 2 abdominal pads (xii) 12 sterile individually wrapped guaze pads (xiii) 1 pack alcohol swabs (xiv) 1 bottle peroxide (EC180/87)
Kit 2, five to fifteen employees	9.6 Every employer employing five to fifteen employees shall <ul style="list-style-type: none"> (a) appoint an employee who is a holder of a current St. John Ambulance or Red Cross Emergency First Aid Certificate or higher,

and a Cardiopulmonary Resuscitation Certificate to be in charge of first aid service;

(b) provide first aid supplies, easily accessible, defined as Kit No.2 and made up of the following supplies:

- (i) a first aid manual
- (ii) a first aid record book
- (iii) 1 pack safety pins
- (iv) 1 splinter tweezers
- (v) 1 pair scissors
- (vi) approximately 50 band-aids, assorted sizes
- (vii) 1 pkg cotton tipped applicators
- (viii) 6 triangular bandages
- (ix) 2 rolls adhesive tape
- (x) 2 eye pads
- (xi) 2 abdominal pads
- (xii) 24 sterile individually wrapped gauze pads
- (xiii) 1 pack alcohol swabs
- (xiv) 1 bottle peroxide
- (xv) 1 backboard
- (xvi) 1 rescue blanket
- (xvii) splints, assorted sizes (EC180/87)

9.7 Every employer employing sixteen to one hundred employees shall

Kit 3, sixteen to 100
employees

(a) appoint an employee who is a holder of a current St. John Ambulance or Red Cross Standard First Aid Certificate or higher, and a Cardiopulmonary Resuscitation Certificate to be in charge of first aid service;

(b) provide first aid supplies easily accessible, defined as Kit No.3 and made up of the following supplies:

- (i) a first aid manual
- (ii) a first aid record book
- (iii) 1 pack safety pins
- (iv) 1 splinter tweezers
- (v) 1 pair scissors
- (vi) approximately 50 band-aids, assorted sizes
- (vii) 1 pkg. cotton tipped applicators
- (viii) 10 triangular bandages
- (ix) 2 rolls adhesive tape
- (x) 2 eye pads
- (xi) 6 abdominal pads
- (xii) 36 sterile individually wrapped guaze pads
- (xiii) 1 pack alcohol swabs
- (xiv) 1 bottle peroxide
- (xv) 1 backboard
- (xvi) 1 rescue blanket

(xvii) splints assorted sizes (EC180/87)

More than 100
employees

9.8 Every employer employing more than one hundred employees at one time shall

- (a) appoint an employee who is a holder of a current St. John Ambulance or Red Cross Advanced First Aid Certificate or higher, and a Cardiopulmonary Resuscitation Certificate to be in charge of first aid service;
- (b) provide in addition to Kit No. 3, a first aid room containing:
 - (i) hot and cold water
 - (ii) 1 refuse pail with cover
 - (iii) 1 chair with arm rests
 - (iv) 1 bed with pillow and blanket
 - (v) 1 cabinet suitable for storing dressings, instruments
 - (vi) 2 wash basins
 - (vii) 1 kidney basin
 - (viii) 1 portable first aid kit
 - (ix) 1 advanced first aid manual (EC180/87)

Fishing boats

9.9 Each inshore fishing boat shall have on board a No. 1 First Aid Kit. (EC180/87)

Record of injuries

9.10 The employer shall ensure that all injuries shall be recorded in the first aid record book. (EC180/87)

Modifications, kits

9.11 (1) Requirements for the content of first aid kits may be increased by an officer but kits shall not contain less than the minimum quantity specified.

Training

(2) First aid training may be modified on the direction of the Director. (EC180/87)

Inventory control

9.12 The employer shall ensure that first aid supplies be replaced immediately when used, misplaced or worn out and that a regular inventory and updating of all kit contents be carried out at least once a month. (EC180/87)

Medical aid

9.13 When an employee has been injured so seriously that he cannot continue at his regular work, the employer shall, as soon as reasonably possible, obtain necessary medical aid or convey the employee to a place where he may receive medical aid. (EC180/87)

PART 10 NON-IONIZING RADIATION

Laser radiation

10.1 The employer shall ensure that when laser beams are used the operation that use is in accordance with the American National Standard

for the Safe Use of Lasers endorsed standard number 21361, 19/9 ANSI (R1), and amendments thereto. (EC180/87)

10.2 (1) The employer shall ensure that all sources of intense infra-red radiation are shielded as near the source as possible by heat absorbing screens, water screens, or other suitable devices. Infra-red radiation

(2) The employer shall ensure that employees are provided with and all employees shall wear properly fitting goggles, face shields, or other adequate eye protection when entering an area where they may be subjected to heat rays liable to injure or irritate the eyes. (EC180/87) Protective equipment

10.3 The employer shall ensure that employees are protected from dangerous emissions of ultra-violet radiation by remaining at a safe distance from the source or by the employer Ultra-violet radiation

- (a) placing protective cabinets or screens around the sources of emission; or
- (b) placing a screen of ultra-violet absorbing glass or other material between the employees and the source of radiation. (EC180/87)

10.4 (1) In case of continuous or modulated microwave and radio frequency radiation in the frequency range 10 MHz - 300 GHz, the employer shall ensure that whole or partial body exposures (with the exception of exposures to the extremities) shall not exceed the following limits: Microwave and radio frequency radiation

- (a) in the frequency range 10 MHz - 1 GHz a maximum permitted average power density of 1 mW/cm, when averaged over a one-hour period;
- (b) in the frequency range 1 GHz - 300 GHz a maximum permitted average power density of 5 mW/cm, when averaged over a one hour period; and
- (c) in the frequency range 10 MHz - 300 GHz, a maximum permitted average power density of 25 mW/cm, when averaged over a one-minute period.

(2) The employer shall ensure that for exposure of extremities to continuous or modulated microwave radiation in the frequency range 10 MHz - 300 GHz, the average power density does not exceed 10 mW/cm, when averaged over a one-hour period. (EC180/87) Power density

10.5 The employer shall ensure that controlled areas which allow only restricted occupancy are clearly designated using adequate warning signs, and maximum occupancy periods are posted. (EC180/87) Signs

PART 11
VENTILATION

Adequate ventilation	11.1 The employer shall ensure that the workplace is adequately ventilated by either natural or mechanical means such that the atmosphere does not endanger the health and safety of employees under normal working conditions. (EC180/87)
Control systems	11.2 Where practical, contaminants shall be controlled at the source by means of hoods, ducts or such other means as may be necessary. (EC180/87)
Threshold limit values	11.3 Where the air of working areas is contaminated by vapours, fumes, gases, mists or other impurities which constitute a hazard to the health or safety of employees, suitable means of ventilation shall be provided by the employer to reduce contamination in the atmosphere at or below the "Threshold Limit Values" or "TLVs" as prescribed by the American Conference of Governmental Industrial Hygienists in the publication Threshold Limit Values and Biological Exposure Indices for 1985-86 (with annual update). (EC180/87)
Maintenance	11.4 The employer shall ensure that all parts of ventilation systems are maintained, cleaned and that ventilation openings are always free of any obstruction or source of contamination. (EC180/87)
Drawings, etc.	11.5 The employer shall, upon request, submit drawings and specifications of the ventilation system or any modification of the ventilation system to an officer. (EC180/87)
Air space requirement	11.6 The employer shall ensure that every workplace contains at least 8.5 m (300 ft.) of air space for each employee. (When calculating the cubic meter (foot) requirement, height above 3.1 m (10 ft.) is excluded.) (EC180/87)
Means of ventilation	11.7 The employer shall ensure that every workplace shall be adequately ventilated by either <ul style="list-style-type: none"> (a) natural ventilation provided by windows, shutters or louvres which can be opened, having a combined area equal to at least five per cent of the floor area; or (b) mechanical ventilation, where the minimum amount of outside air introduced into any room is at least 0.45 m/min. (15 c.f.m.) per person. (EC180/87)
Discharge	11.8 The employer shall ensure that the discharge of air from any exhaust system is in such a manner so as to prevent the return of contaminants to any workplace. (EC180/87)

11.9 The employer shall ensure that the relative humidity in an office environment shall be a minimum of 30%. (EC180/87)

Humidity

11.10 The employer shall ensure that, subject to section 11.11, the temperature of an enclosed workplace corresponds with the following chart:

Temperature

NATURE OF WORK PERFORMED	MINIMUM TEMPERATURE REQUIRED
Light work performed while sitting: any mental work, precision work, reading or writing	20 C
Light physical work performed while sitting: electric machine sewing and work with small machine tools	19 C
Light work performed while standing: machine tool work	17 C
Moderate work performed while standing: assembly and trimming	16 C
Heavy work performed while standing: drilling and manual work with heavy tools	12 C

(EC180/87)

11.11 The minimum temperature required by section 11.10 does not apply at a workplace

Exceptions

- (a) that is normally unheated;
- (b) where the necessity of opening doors makes the heating of the area to the temperature specified in section 11.10 impractical;
- (c) where perishable goods requiring lower temperatures are processed or stored;
- (d) where radiant heating is such that an employee working in the area has the degree of comfort that would result were the area heated to the same temperature specified in section 11.10;
- (e) where the process or activity is such that the temperature specified in section 11.10 could cause discomfort. (EC180/87)

PART 12 EXCAVATIONS, TRENCHES AND CONSTRUCTION

12.1 (1) The employer shall ensure that before beginning an excavation or trench, the location of possible underground utility lines and piping is determined.

Location of utility
lines

- (2) The employer shall ensure that when working within 609 mm (2 ft.) of underground utility lines and piping
- (a) adequate safety precautions are taken;

Safety precautions

- (b) utility lines have been de-energized and grounded; and
- (c) the authority operating the utility has been notified of the operation.

Operating
procedure

(3) The employer shall ensure that an adequate operating procedure is used when employees are working within 609 mm (2 ft.) of any underground utility line or piping.

Support of poles

(4) The employer shall ensure that utility poles, posts or similar structures are supported or removed when they are within 3 048 mm (10 ft.) of an excavation or trench more than 1 219 mm (4 ft.) deep. (EC180/87)

Shoring

12.2 (1) The employer shall ensure that the walls of an excavation or trench are supported by adequate shoring and bracing or caging except when an excavation or trench

- (a) is less than 1 219 mm (4 ft.) deep;
- (b) is cut in solid rock;
- (c) is sloped to within 1 219 mm (4 ft.) of the bottom of the excavation or trench with a slope at the angle of repose that does not exceed 305 mm (1 ft.) of vertical rise to each 305 mm (1 ft.) of horizontal run; or
- (d) is such that employees are not required to enter.

Idem

(2) If necessary to provide protection to employees working in a trench the employer shall ensure that additional shoring and bracing is added to support the increased pressure due to the location of mobile equipment at the edge of an excavation or trench.

Certification

(3) The employer shall ensure that shoring and bracing for excavations or trenches is certified as adequate by a professional engineer and the proof of certification is made available to an officer on request. (EC180/87)

Safety requirements
before entry

12.3 The employer shall ensure that employees are not allowed to enter an excavation or trench 1 219 mm (4 ft.) or more in depth, and employees shall not enter unless

- (a) the requirements of section 12.2 are complied with;
- (b) CSA approved safety hats and footwear are provided and worn by the employee;
- (c) ladders, extending at least 914 mm (3 ft.) above the excavation or trench are installed and located no more than 15 240 mm (50 ft.) from where employees are working or other safe means of access and egress are provided;
- (d) the sides and crests have been scaled down to prevent loose material from falling into the excavation or trench. (EC180/87)

12.4 (1) The employer shall ensure that an employee does not install or remove shoring from a position inside a trench. Removal, etc. of shoring

(2) An employee shall not install or remove shoring from a position inside a trench. (EC180/87) *Idem*

12.5 (1) The employer shall ensure that excavated material is kept at least 609 mm (2 ft.) away from the edge of excavations or trenches. Excavated material

(2) The employer shall ensure that where piled rock or other granular material creates a hazard above an excavation or trench more than 1 828 mm (6 ft.) deep in rock *Idem*

(a) the pile is located back from the face of the excavation or trench a distance equal to at least the height of the pile; or

(b) a fence is erected at a minimum distance of 914 mm (3 ft.) from the face of the excavation or trench, consisting of material adequate to support the pile. (EC180/87)

12.6 (1) The employer shall ensure that every excavation and trench is kept reasonably free of water. Water

(2) The employer shall ensure that hazardous liquids or gases and explosives are not stored in excavations or trenches. Hazardous gases, etc.

(3) When hazardous liquids or gases or internal combustion engines are used in or near excavations or trenches, or where hazardous liquid or gases may enter or be present in an excavation or trench, the employer shall ensure that adequate ventilation precautions are taken to prevent the accumulation of hazardous gases in the excavation or trench. (EC180/87) *Idem, ventilation*

12.7 The employer shall ensure that no operator lowers material into an excavation or trench and no operator shall lower material into an excavation or trench unless Lowering materials

(a) the operator has unrestricted visibility; or

(b) a signaller is used to direct the movement of the material. (EC180/87)

12.8 When work is carried on in an excavation or trench the employer shall ensure that an employee is working on surface where he can observe the employees working in the excavation or trench. (EC180/87) Observation requirement

12.9 Employees in an excavation or trench shall not stand under any load or in the area where a load may land. (EC180/87) Standing under loads

12.10 The employer shall ensure that the walls and crests of an excavation or trench, when cut in solid rock and are not stable, are Wall supports

supported by rock bolts, wire mesh or shoring or other equivalent method. (EC180/87)

Warning lights and
barricades

12.11 (1) The employer shall ensure that an excavation or trench is adequately illuminated, has adequate warning lights conspicuously displayed, and has a barricade at all times while employees are working in the excavation or trench.

Idem

(2) Where an excavation or trench is made, the employer shall ensure that

- (a) adequate barricades are erected; and
- (b) at night, adequate warning lights are used. (EC180/87)

Illumination of
materials

12.12 (1) When materials piled along the sides of any excavation or trench interfere with the flow of traffic, the employer shall ensure that the material is adequately illuminated by warning lights.

Signs

(2) When construction work is being carried out which interferes with the flow of traffic, the employer shall ensure that adequate warning signs are posted in both directions not less than 225 m (738 ft.) from the worksite, and at any intersection between the warning signs.

Signallers

(3) When construction work is being carried out in areas where employee safety is endangered by vehicle traffic, the employer shall provide trained signallers to control the flow of traffic.

Reflectorized vests

(4) The employer shall provide and all signallers shall wear a reflectorized vest or jacket when controlling the flow of traffic.

Reflectorized
paddles

(5) The employer shall provide and all signallers shall use reflectorized paddles to control the flow of traffic. (EC180/87)

Night lighting

12.13 Where work is done at night, the excavation or trench shall be properly lighted. (EC180/87)

Power shovels

12.14 (1) Power shovels shall be located with care.

Shoring

(2) Where a power shovel is placed on the bank of an excavation or trench, shoring and bracing shall be used to prevent a cave-in.

Mats

(3) Mats or heavy planking shall be used to distribute the load on soft ground. (EC180/87)

Adjacent buildings

12.15 No person shall dig an excavation that is likely to endanger a worker by affecting the stability of an adjacent building or structure. (EC180/87)

PART 13
CONFINED SPACE

13.1 In this Part “confined space” means a place to or from which the means of entry or exit are restricted because of location, design construction, or contents and includes bins, tanks, tankers, tunnels, silos, sewers, vaults, chambers, pipelines, pits, vessels, vats and flues. (EC180/87)

Definition

13.2 The employer shall ensure that an employee enters a confined space only where

Conditions for entry
of confined space

- (a) there is a safe method of access and egress from all parts of the confined space;
- (b) mechanical equipment in the confined space is
 - (i) disconnected from its power source, and
 - (ii) locked out;
- (c) prior to entry
 - (i) piping containing hazardous substances or substances under pressure or so located as to allow hazardous substances to enter such space is disconnected, blanked or blinded off, or
 - (ii) where it is impossible to employ blanks or blinds, as in welded piping systems, written work procedures are developed in consultation with (the Division, committee, or representative) and implemented to ensure equivalent protection to all employees exposed to the hazard but the closing of a valve on any line is not an acceptable substitute for blanking or blinding;
- (d) the confined space is tested and evaluated by a competent person, properly equipped with personal protective equipment, who
 - (i) used an approved calibrated instrument that has been functionally tested,
 - (ii) records the results of each test in a permanent record which is available to an officer,
 - (iii) certifies in writing in a permanent record that the confined space is free from hazard, and
 - (iv) specifies the procedures to be followed to ensure that the space remains free of hazard;
- (e) ground fault circuit interrupters are used for electrical equipment taken into wet or solidly grounded confined spaces unless battery operated or safety low voltage equipment is used; and
- (f) training in emergency procedures is provided for employees assigned to a confined space entry job including the employee stationed outside the confined space. (EC180/87)

13.3 The employer shall ensure that a confined space in which there exists or is likely to exist

Hazardous confined
space, conditions
for entry

- (a) a hazardous accumulation of gas, vapour, dust, mist, smoke or fumes; or
 - (b) an oxygen content of less than 19.5% or more than 23% at atmospheric pressure
- is entered only when
- (c) the requirements of sections 13.2 and 13.5(a) are complied with;
 - (d) the space is purged and ventilated to provide a safe atmosphere; and
 - (e) provisions for continuous or periodic monitoring have been established to ensure that the hazardous condition does not recur;
 - (f) another employee is stationed outside the confined space;
 - (g) the employee entering the space is using such other equipment as is necessary to ensure his safety;
 - (h) suitable arrangements have been made to remove the employee from the confined space should it be required;
 - (i) a person adequately trained in cardiopulmonary resuscitation is conveniently available;
 - (j) the employee entering is using a CSA approved breathing apparatus;
 - (k) the employee entering the space is wearing an approved safety harness with attached life line that will permit that employee to be removed from the space; if more than one employee is working in the space, steps have been taken to ensure that the life lines do not become entangled;
 - (l) another employee is stationed outside the confined space and in addition, equipment and persons are available to ensure immediate removal of employees within the space;
 - (m) all safety equipment to be used in the confined space has been inspected by a competent person and is in good working order.
- (EC180/87)

Confined space
containing
flammable vapours

13.4 (1) Subject to subsection (2), where the gas or vapour in a confined space is or is likely to be explosive or flammable, the employer shall ensure that a confined space is entered only where

- (a) the concentration of the gas or vapour in a confined space does not or is not likely to exceed 50% of the lower explosive limit of the gas or vapour; and
- (b) the only work to be performed is that of cleaning or inspecting and of such a nature that it does not create any sources of ignition.

Cold work

(2) Cold work may be performed in a confined space which contains or is likely to contain an explosive or flammable gas or vapour where the concentration does not and is not likely to exceed 10% of the lower explosive limit of the gas or vapour. (EC180/87)

13.5 The employer shall ensure that when an employee enters a confined space, another employee Sentinels

- (a) remains in attendance outside the space at all times whenever the space is occupied and visually checks or is in constant voice communication with the employee in the confined space;
- (b) is capable of raising an alarm in order to summon additional assistance;
- (c) does not enter the space unless relieved by another employee;
- (d) ensures that appropriate equipment is stationed outside the space to enable quick and safe entry to the space, should such an entry be required; and
- (e) is knowledgeable in the correct use of the emergency retrieval system procedures. (EC180/87)

13.6 The employer shall ensure that warning signs and barricades are installed to protect employees in a confined space where a hazard from any form of traffic exists. (EC180/87) Signs

13.7 An employee shall not enter a confined space unless the requirements of this Part have been complied with. (EC180/87) Prohibition

PART 14 BINS AND HOPPERS

14.1 Employees shall be provided with and shall wear approved safety belts with life line attached and properly anchored when working at elevations greater than 3 m (10 ft.) above grade where adequate working platforms or stagings are not provided. (EC180/87) Safety belts

14.2 Employees shall be provided with and shall wear approved safety harnesses with life line attached and properly anchored when entering bins, hoppers, chambers or vessels where there is a danger of being trapped or buried by the movement of material, or where there is a danger of falling into pits, shafts or moving machinery. (EC180/87) Safety harness with life line

14.3 The employer shall ensure that wherever possible suitable walks or working platforms with standard handrails shall be installed for the protection of employees in or on such bins; and these bins shall be provided with adequate exits and with practical safety devices which best fit the different types of bins. (EC180/87) Walks and platforms

14.4 When employees are required to work in bins, hoppers, chambers or vessels where there is danger of being overcome by contaminated air or lack of oxygen or where there is danger of being buried by movement of material, an employee shall be stationed in a position where he can Sentinels

readily effect the rescue of the employee exposed to the hazardous condition.

Ropes for life lines shall be as specified in C.S.A. Standard Z259.2.

Life lines shall be connected for use so that there will be the least practicable amount of slack line in order to limit the free fall of the employee.

No more than one employee shall be attached to one life line. (EC180/87)

Exclusion

14.5 This Part does not apply when a net or equivalent protection has been provided for steel erectors or similar tradesmen who are experienced in working at heights and where the use of a safety belt or life line may produce an additional hazard. (EC180/87)

PART 15 ACCESS TO WORKPLACES

Safe access

15.1 The employer shall ensure that all places where work is performed shall have safe means of access and egress from each floor appropriate to the conditions of the work area and

- (a) emergency exits shall be designed and marked to provide quick and unimpeded exit;
- (b) doors shall not open directly on to stairways, but shall open to floors or landings having a width in excess of the swing of the doors;
- (c) transparent glass panels which could be mistaken for doorways shall be clearly identified. (EC180/87)

Access to
construction site

15.2 On construction sites the employer shall ensure that means of access to every excavation, floor, platform and fixed scaffold where work is being performed above or below ground level shall

- (a) be provided by a stair, runway, ramp, scaffold or ladder; and
- (b) be maintained in place and in safe condition at all times. (EC180/87)

Overhead
protection

15.3 The employer shall ensure that adequate overhead protection shall be provided on a work site at every means of access to and egress from a building or other structure where there is danger of material falling on an employee. (EC180/87)

PART 16
FLOORING DURING CONSTRUCTION

16.1 In the erection of buildings or structures, the employer shall ensure that temporary or permanent flooring shall

Flooring

- (a) be installed
 - (i) so that a steel erector is required to work no more than two storeys in height or the vertical distance between column splices above such flooring, and
 - (ii) at each floor level where work other than steel erection is in progress;
- (b) consist of material providing strength sufficient to support any load likely to be applied and at least equal to sound spruce planking, 50 mm (2 in.) thick and 254 mm (10 in.) wide with a span of 3 050 mm (120 in.);
- (c) be securely fastened to and supported on girders, beams or structural members capable of safely supporting the applied loads;
- (d) extend over the whole working area except for necessary openings which shall be properly barricaded or fenced. (EC180/87)

16.2 Where there is danger of material falling into work areas, such areas shall be barricaded against entry by employees and warning signs shall be prominently displayed on all sides and approaches. (EC180/87)

Barricades and
signs

16.3 Where practicable safety nets may be used in lieu of flooring during construction. (EC180/87)

Safety nets

16.4 Any building, in the course of construction, which is more than two storeys high shall have flooring laid completely over the floor immediately below or a floor as close as possible below the level where work is being carried on. (EC180/87)

Laying of flooring

16.5 In any building more than three storeys high the first floor above the street floor shall be completely floored over as soon as practicable, leaving such openings as are reasonably necessary, and these shall thereafter be kept covered throughout the entire period of construction. If column lengths are such as to prevent the flooring-over of this floor, then the second floor above the street shall be covered. (EC180/87)

Idem

16.6 Planks shall extend at least 305 mm (12 in.) beyond supports or be securely fastened and shall have no unsupported projection greater than 456 mm (18 in.). (EC180/87)

Planking

16.7 When temporary floors are being removed all loose objects lying on the planking shall first be removed to prevent such objects falling on employees, and adequate warning shall be given to employees working below. (EC180/87)

Loose objects

- Stairways **16.8** Stairways shall be installed as rapidly as the progress of the work will allow. (EC180/87)
- Temporary ladders **16.9** Temporary ladders shall be dispensed with as soon as possible. (EC180/87)

PART 17 GUARDRAILS AND OPENINGS

- Openings **17.1** The employer shall ensure that every opening in any floor or other surface, used by employees in common, not protected by a guardrail shall be covered with securely fastened planks or other material capable of supporting any load likely to be imposed thereon. (EC180/87)
- Guardrails **17.2** A guardrail shall be provided
- (a) around any uncovered opening in a floor or other surface used by workmen in common;
 - (b) at the perimeter or any open side of a floor, mezzanine or balcony;
 - (c) on the open sides and ends of a scaffold;
 - (d) where specified elsewhere in these regulations. (EC180/87)
- Requirements for guardrails **17.3** A guardrail shall
- (a) consist of 50 mm 0 100 mm (2 in. 0 4 in.) wooden or metal rail securely supported on 50 mm 0 100 mm posts spaced at intervals of not more than 2 400 mm (95 in.);
 - (b) be not less than 914 mm (36 in.) and no more than 1 067 mm (42 in.) above floor level;
 - (c) have a 25 mm 0 100 mm (1 in. 0 4 in.) intermediate railing on the inner side of the posts midway between the top railing and the toeboard;
 - (d) have a toeboard securely nailed to the posts and to the floor and extending from the floor to a height of 100 mm (4 in.);
 - (e) be free of splinters and protruding nails. (EC180/87)
- General safety requirements re floors **17.4** (1) The parts of floors over which employees are liable to walk shall be sufficiently even to afford safe walking and safe trucking of materials.
- Projections and obstructions (2) Parts of floors over which employees are liable to walk shall be free from holes or splinters, improperly fitted covers for gutters or conduits, and from protruding nails or bolts, projecting valves or pipes or other projections or obstructions which might create stumbling hazards.
- Surfaces (3) Floors shall not be slippery under any normal conditions or made of any material which will become slippery through wear.

(4) Places where slipping may be especially hazardous shall be provided with non-slip walking surfaces. *Idem*

(5) Ladderway floor openings shall be guarded on all exposed sides, except at the entrance to the openings, by permanent railings and toeboards and the passage through the railing shall be provided with a barrier or gate so arranged that a person cannot walk directly into the opening. Ladderway openings

(6) Stairway floor openings shall be guarded on all exposed sides except at the entrance to the stairway by permanent railings and toeboards. Stairways

(7) For infrequently used stairways where traffic across the opening prevents the use of permanent railings and toeboards, the guard shall consist of a flush-hinged floor-opening cover of adequate strength, equipped with attached railings so as to leave only one side exposed when the cover is open. When the opening is not in use the cover shall be closed or the exposed side guarded. Guards

(8) Hatchway, chute, pit and trap-door openings shall be guarded by removable railings with toeboards on not more than two sides and permanent railings with toeboards on all other exposed sides or a flush-hinged cover as specified for stairway floor openings. Hatchway guards

(9) Manhole floor openings shall be guarded by manhole covers of adequate strength which need not be hinged. Manhole covers

(10) Other floor openings into which persons can accidentally walk shall be guarded either by permanent railings and toeboards on all exposed sides or by hinged floor openings covers of adequate strength. Floor openings

(11) When manhole covers or hinged floor opening covers are not in place, the openings shall be constantly attended by someone or protected by portable enclosing railings. (EC180/87) Precautions

17.5 The employer shall ensure that wall openings less than 100 cm (40 in.) from a walking surface which create a potential hazard, have adequate safeguards. (EC180/87) Wall openings

PART 18 BRACING AND SUPPORTS DURING CONSTRUCTION

18.1 The employer shall ensure that sufficient bracing and supports, either permanent or temporary, shall be provided to ensure that a structure, or any part thereof, will safely support all loads to which it may be subjected at all stages of progress on the project. (EC180/87) Bracing and supports

PART 19
FORMWORK

- Formwork **19.1** (1) Every employer shall ensure that
- (a) every structure and every part of a structure for the purpose of forming concrete shall be designed, constructed, supported and braced to safely withstand all loads likely to be applied to it before, during and after the placing of concrete;
 - (b) where shores are used, the bracing required by clause (a) shall include sufficient diagonal bracing in the vertical and horizontal planes to prevent lateral movement of the formwork and buckling of the shores;
 - (c) where shoring is more than one tier in height, the junction of each tier shall be braced to prevent any lateral movement.
- Footings (2) The employer shall ensure that footings for shores shall be sound, rigid and capable of carrying the maximum load without excessive settlement or deformation. (EC180/87)

PART 20
FENCING AND BARRICADES

- Sidewalk covering **20.1** (1) Subject to subsection (2), where a building or other structure being constructed, altered, repaired or demolished is located within 2 130 mm (84 in.) of a sidewalk or other public way used by pedestrians, work shall not commence on the project until a covered way has been constructed over the sidewalk or public way.
- Exception (2) Subsection (1) does not apply to a one-storey project where a substantially constructed fence or boarding not less than 1 800 mm (72 in.) high is constructed, and, in the written opinion of an officer adequately safeguards the persons using the sidewalk or public way. (EC180/87)
- Covered way **20.2** A covered way shall
- (a) have a clear height of not less than 2 440 mm (96 in.);
 - (b) have a clear width of not less than 1 500 mm (60 in.);
 - (c) be designed and constructed to support safely all loads that may be reasonably expected to be applied to it, but in no case less than 245 kg per m (50 lbs. per sq. ft.) on the roof;
 - (d) have a weather-tight roof sloped toward the project;
 - (e) be totally enclosed on the project side so that there is a reasonably smooth surface on the sidewalk side of that enclosure; and
 - (f) have a railing 1 067 mm (42 in.) in height on the street side. (EC180/87)

20.3 Where a building or other structure being constructed, altered, repaired or demolished is located 2 130 mm (84 in.) or more from a sidewalk or other public way used by pedestrians, a substantially constructed fence or boarding not less than 1 800 mm (72 in.) high shall be constructed if, in the written opinion of an officer, the persons using the sidewalk or other public way might be endangered. (EC180/87)

Fences

PART 21 PLATFORMS, RUNWAYS AND RAMPS

21.1 The employer shall ensure that a runway, ramp or platform other than a scaffold platform shall be designed, constructed and maintained to safely support all loads that may reasonably be expected to apply to it. (EC180/87)

Ramp, runway, etc.

21.2 A runway or ramp shall be

- (a) 480 mm (19 in.) or more in width;
- (b) securely fastened at both ends; and
- (c) adequately held in place at intermediate supports by bolts, spikes or cleats. (EC180/87)

Requirements

21.3 A ramp shall have

- (a) a slope not exceeding 300 mm (12 in.) of vertical rise to each 900 mm (36 in.) of horizontal run;
- (b) cross cleats, and if the slope exceeds 300 mm (12 in.) of vertical rise to each 2 400 mm (96 in.) of horizontal run, and the cleats shall be
 - (i) spaced at regular intervals not exceeding 450 mm (18 in.), and
 - (ii) of equivalent strength and have equivalent resistance to slipping as 25 mm (1 in.) 0 50 mm (2 in.) dressed boards securely nailed to the ramp. (EC180/87)

Ramp

21.4 A runway, ramp or platform other than a scaffold platform shall have a guardrail on the open side or sides. (EC180/87)

Guardrail

PART 22 STAIRS

22.1 The employer shall ensure that when any work on a building has progressed to a height of more than 7 315 mm (24 ft.) above ground level, the means of egress shall be by permanent or temporary stairs that shall

Egress stairs

- (a) be provided for the entire height from the ground to the uppermost working level; and
- (b) be continued as the height of the project is increased. (EC180/87)

Temporary stairs	<p>22.2 The employer shall ensure that temporary stairs shall</p> <ul style="list-style-type: none"> (a) be maintained in a safe condition until the permanent stairs have been installed; (b) be not less than 1 200 mm (48 in.) wide. (EC180/87)
Skeleton steel stairs	<p>22.3 The employer shall ensure that skeleton steel stairs shall have temporary wood treads</p> <ul style="list-style-type: none"> (a) of suitable planking extending the full width of the stairs and landings; and (b) securely fastened in place. (EC180/87)
Permanent stairs	<p>22.4 The employer shall ensure that permanent stairs shall be installed as soon as working conditions permit. (EC180/87)</p>
Requirements	<p>22.5 The employer shall ensure stairs and landings shall be designed and constructed to safely support a live load of 488 kg per m (100 lbs. per sq. ft.) with a safety factor of 4 and shall</p> <ul style="list-style-type: none"> (a) have a vertical distance between landings not exceeding 3 656 mm (12 ft.) and intermediate landings shall have a dimension of not less than 1 117 mm (44 in.) measured in the direction of the run; (b) have a handrail or guardrail securely fastened and supported in place on the open side or sides of each flight and at each landing. (EC180/87)
Obligations of employer regarding stairs	<p>22.6 The employer shall ensure that</p> <ul style="list-style-type: none"> (a) stairs and platforms made of perforated material shall not contain openings larger than 11 mm (in.); (b) stairs, except service stairs which may be used for access to oiling platforms, machinery, etc., should be not less than 1 117 mm (44 in.) in width clear of all obstructions except handrails, and in no case shall be less than 914 mm (36 in.); (c) the pitch of stairways except service stairways should be between 30 degrees and 35 degrees from horizontal and shall in no case be less than 20 degrees or more than 50 degrees; (d) where the pitch would be less than 20 degrees a ramp shall be used and where the pitch is greater than 50 degrees a fixed ladder shall be used; (e) head room with a vertical clearance of 2 286 mm (7.5 ft.) from the top of the tread on a line with the face of the riser, shall be provided at all points in the stairwell; (f) except for service stairs, the treads exclusive of nosings or projections shall be not less than 229 mm (9 in.) in width and the risers shall not be more than 197 mm (7 in.) or less than 127 mm (5 in.) in height;

- (g) the width of the treads and the height of the risers shall be constant in any flight and all stairways having four or more risers shall be equipped with stair railings on any open side;
- (h) the top and the bottom treads of any flight shall be clearly distinguishable;
- (i) enclosed stairways less than 1 117 mm (44 in.) wide shall be equipped with at least one handrail, preferably on the right side descending;
- (j) stairways 1 117 mm (44 in.) or more in width shall be equipped with one stair railing on each open side and one handrail on each enclosed side;
- (k) stairways 2 235 mm (88 in.) or more in width shall be equipped with an intermediate handrail down the centre;
- (l) stair railings shall be constructed in a permanent and substantial manner of wood, pipe, structural metal or other material of sufficient strength;
- (m) the height of stair railings from the upper surface of the top rail to the surface of the tread in line with the face of the riser at the forward edge of the tread, shall not be less than 762 mm (30 in.), if the railing is used as a handrail the height shall not be more than 864 mm (34 in.);
- (n) wooden handrails shall be at least 50 mm 0 50 mm (2 in. 0 2 in.) in size and of smooth finish;
- (o) metal handrails shall be at least 38 mm (1 in.) in diameter;
- (p) handrails mounted directly on walls or partitions shall be fixed by means of brackets attached to the lower side of the rails so as not to interfere with the smoothness of the top and the side surface of the rails;
- (q) brackets shall be spaced not more than 2.4 m (8 ft.) apart and shall provide for a clearance of at least 38 mm (1 in.) between the rails and the walls or any obstruction on the walls;
- (r) handrail structure shall be capable of withstanding a load of 100 kg (220 lb.) applied in any direction at any point of the rail;
- (s) the clear width of service stairs shall be at least 914 mm (3 ft.);
- (t) the pitch of service stairs shall not be more than 50 degrees and the width of the treads shall not be less than 152 mm (6 in.);
- (u) stairways shall be adequately illuminated and lights shall be located so that they do not cause glare;
- (v) a non-slip nosing or strip shall be used on all stair treads on which there is danger of slipping due to the material of the tread;
- (w) a non-slip nosing or strip shall be installed within a distance of 31 mm (1 in.) from the front edge of the tread and shall be at least 31 mm (1 in.) wide;

(x) a suitable roof or enclosure is provided for outside stairways.
(EC180/87)

PART 23 LADDERS

Use of ladders	23.1 (1) The employer shall provide a ladder where employees must work in an elevated or sub-level area not provided with other safe and recognizable means of access or egress.
Defective ladder	(2) The employer shall ensure that a ladder is removed from service when it has loose, broken or missing rungs, split side rails or other hazardous defects.
General obligations of employer	(3) The employer shall ensure that <ul style="list-style-type: none"> (a) all portable ladders shall be equipped with non-slip bases; (b) portable metal or wire truss ladders shall not be used in the vicinity of electrical circuits or apparatus when the hazard of electrical exposure is present; (c) benches, boxes, tables or other makeshift substitutes shall not be used as ladders. (EC180/87)
Specifications	23.2 The user of a ladder shall ensure that <ul style="list-style-type: none"> (a) the base of an inclined portable ladder shall not be more than one-fourth the length of the ladder out from the vertical line of contact at the top unless the top is securely fastened; (b) side rails of ladders when in use shall have secure footing and the top rest shall be rigid and have ample strength to support the applied load; (c) where possible the top of the ladder shall be securely fastened to prevent movement; (d) the side rails of a portable ladder shall extend at least 914 mm (3 ft.) above a landing; (e) side rails have a uniform clear width between them not less than 305 mm (12 in.) for ladders 3 048 mm (10 ft.) in length and under, and increasing 6 mm (in.) in width for each additional 300 mm (1 ft.) in length. (EC180/87)
General obligations	23.3 The user of a ladder shall <ul style="list-style-type: none"> (a) inspect a ladder before use; (b) report any unsafe condition of the ladder to the employer; (c) not work from the top three rungs of a single or extension ladder; (d) not lash or splice ladders together; (e) not place a ladder in front of or against a door unless the door is blocked in the open position, locked or guarded;

- (f) use both hands and face the ladder when ascending or descending;
- (g) when standing on a ladder, keep the centre of his body between the side rails. (EC180/87)

23.4 The employer shall ensure that a wooden ladder

Wooden ladders

- (a) is made of good quality, straight grained lumber;
- (b) is not painted other than by being preserved with transparent protective coating;
- (c) if made on a construction site shall have side rails 50 mm to 100 mm (2 in. to 4 in.) lumber;
- (d) has rungs
 - (i) free of knots,
 - (ii) designed to carry safely a load 200 kg (450 lbs.) on the center of the rung,
 - (iii) uniformly spaced not exceeding a spacing of 300 mm (12 in.),
 - (iv) if flat, shall be at least 25 mm (1 in.) by 64 mm (2 in.) and shall be secured by at least three screws or wire nails to each side,
 - (v) if flat, shall be notched into the side rails at least 13 mm (½ in.) on the lower side, or with fillers installed between the rungs;
- (e) has round rungs shall be at least 31 mm (1 in.) diameter with tenons 6 mm (¼ in.) less diameter fitting through side rails, secured with a screw or wire nail through tenon at mid-length;
- (f) has side rails
 - (i) dressed on all sides with sharp edges taken off and free from splinters,
 - (ii) the minimum size of which for single wooden ladders shall be as follows:

Length of Ladder (feet)	Thickness	Depth
Up to and including 20	29 mm (1 1/8 in.)	64 mm (2½ in.)
Over 20 and up to and including 22	31 mm (1¼ in.)	70 mm (2¾ in.)
Over 22 and up to and including 30	31 mm (1¼ in.)	76 mm (3 in.)

(EC180/87)

23.5 (1) The employer shall ensure that

Step ladders

- (a) step ladders shall not be over 6 096 (20 ft.) in length;

- (b) step ladders shall be constructed so that when in the open position of the front section shall have a minimum slope of 89 mm (3 in.) and the back section a minimum slope of 50 mm (2 in.) in each 305 mm (12 in.) length of side rail;
- (c) when in position all treads of step ladders shall be level;
- (d) the minimum inside width between side rails at the top step of step ladders shall not be less than 305 mm (12 in.) and the side rails shall have an additional spread of 25 (1 in.) for each 305 mm (12 in.) of length of step ladder;
- (e) step ladders shall be equipped with metal braces to hold legs securely in position;
- (f) back legs of all step ladders shall be at least 44 mm (1 in.) wide and of the same thickness as the side rails;
- (g) cross rails and braces of step ladders shall be not less than 13 mm (in.) thick and shall be securely fastened;
- (h) step ladders 3 048 mm (10 ft.) and less in height shall have a bottom cross rail and diagonal braces;
- (i) step ladders over 3 048 mm (10 ft.) in height shall have bottom and intermediate cross rails and two sets of diagonal braces;
- (j) cross rails shall not be less than 100 mm (4 in.) wide and diagonal braces shall not be less than 50 mm (2 in.) wide;
- (k) step ladders shall be reinforced at each step by a metal tie rod or a metal brace;
- (l) metal parts of step ladders shall be of malleable iron, wrought iron or steel;
- (m) the material shelf and the top step on a step ladder are clearly marked to indicate that they are not steps.

Side rails

(2) Side rails of step ladders shall have the following solid cross section or equivalent strength cross section:

Length of side rail (feet)	Minimum thickness	Minimum width
Up to and including 10	19 mm (¾ in.)	70 mm (2¾ in.)
Over 10 and up to and including 12	19 mm (¾ in.)	76 mm (3 in.)
Over 12 and up to and including 16	19 mm (¾ in.)	82mm (3¼ in.)
Over 16 and up to and including 20	25 mm (1 in.)	82 mm (3¼ in.)

Note: These thicknesses provide for a gain of not over inch in depth. Where gains

Length of side rail
(feet) Minimum
thickness Minimum
width
of a greater depth are required, greater thickness must be used. (EC180/87)

23.6 The employer shall ensure that fixed or permanent ladders shall have parallel sides of either wood or metal and shall be permanently and securely fastened in such manner that the ladder

Fixed or permanent
ladders

- (a) is securely held in place at the top and bottom and at such intermediate points as are required to prevent sway;
- (b) has a continuous clearance space of at least 165 mm (6 in.) back of rungs;
- (c) has rungs omitted above the landing and has rails or other secure hand holds which extend at least 1 067 mm (42 in.) above the landing. (EC180/87)

23.7 (1) The employer shall ensure that a fixed ladder more than 6 096 mm (20 ft.) in length is provided with

Fixed ladders

- (a) a safety rail secured to the ladder; or
- (b) cage guards with offset platforms at intervals not greater than 9 144 mm (30 ft.); or
- (c) adequate fall arresting equipment.

(2) The employer shall ensure that employees working on fixed ladders more than 6 096 mm (20 ft.) in length shall wear adequate fall arresting equipment.

(3) Employees working on fixed ladders more than 6 096 mm (20 ft.) in length shall wear adequate fall arresting equipment.

(4) Where a safety rail is used, the employer shall provide an approved safety belt designed to be attached to the rail and all employees shall wear the safety belt and attach it to the rail. (EC180/87)

Extension ladders

23.8 (1) The employer shall ensure that

- (a) extension ladders, except when approved by the Division shall have no more than three sections and shall not exceed 18 288 mm (60 ft.) in length when fully extended;
- (b) extension ladders have locks which securely hold the sections of the ladder in an extended position;
- (c) the minimum lap of sections of extension ladders when extended for use shall be

Up to 1 158 mm (38 ft.) extended91 mm (3 ft.) overlap
Up to 1 341 mm (44 ft.) extended 121 mm (4 ft.) overlap
Up to 1 524 mm (50 ft.) extended 152 mm (5 ft.) overlap
Over 1 524 mm (50 ft.) extended 182 mm (6 ft.) overlap

(2) Ladder jacks shall not be used on extension ladders.

Ladder jacks

Scaffold	(3) Extension ladders shall not be used as part of a scaffold. (EC180/87)
Construction sites	23.9 In a building or structure under construction (a) the maximum ascent by ladder or ladders shall be 9 144 mm (30 ft.); (b) two separate lines of ladders or double ladders shall be provided if the ascent exceeds 6 096 mm (20 ft.) to a working place for more than three persons; and (c) one ladder shall be designated for ascent and one for descent. (EC180/87)
Single section ladders	23.10 A single section ladder shall not exceed 9 144 mm (30 ft.). (EC180/87)

PART 24 SCAFFOLDS

General obligation of employer	24.1 The employer shall ensure that scaffolds meet the requirements of this Part. (EC180/87)
Carpenter's portable bracket scaffold	24.2 (1) In this section "carpenter's portable bracket scaffold" means a scaffold supported by two or more triangular frames projecting out from a wooden wall.
Requirements	(2) A carpenter's portable bracket scaffold shall (a) have 13 mm (1/2 in.) or larger steel bolts with a flat section at least 600 mm (24 in.) long, well spiked to the brackets; (b) have the bolts extending through the wall and inside blocking, and be well secured with a washer and lever-handled nut; (c) not have the brackets spaced over 3 100 mm (122 in.) apart; and (d) have not less than 254 mm (10 in.) planks to the platform which shall not be less than 50 mm (2 in.) thick and extend not less than 152 mm (6 in.) nor more than 305 mm (12 in.) beyond the brackets. (EC180/87)
Use of scaffold	24.3 Not more than two employees shall occupy the same panel of a carpenter's scaffold between brackets at the same time and the loading shall not exceed 245 kg per m (mass per area) (50 lbs. per sq.ft.). (EC180/87)
Horse scaffold	24.4 (1) In this section "horse scaffold" means a scaffold supported by two or more horse frames each of which has four sloping legs.
Requirements	(2) A horse scaffold shall (a) not have a horse over 1 200 mm (48 in.) in height; (b) not exceed 3 tiers of horses in height;

- (c) have every platform in a tier 900 mm (36 in.) or more in width;
- (d) be solidly supported on a level surface;
- (e) have horses placed directly above one another; and
- (f) not have the horses spaced over 3 100 mm (122 in.) apart horizontally. (EC180/87)

24.5 (1) In this section “ladder-jack scaffold” means a device attached to a ladder used to support a scaffold. Ladder-jack scaffold

- (2) Every ladder-jack scaffold shall Requirements
- (a) not be used to reach any point more than 6 100 mm (240 in.) in height;
 - (b) have planks at least 50 mm (2 in.) thick by 250 mm (10 in.) wide;
 - (c) have ladder jacks that transmit their load to the rails and not through the rungs of the ladder; and
 - (d) not be used by more than two persons at one time. (EC180/87)

24.6 (1) In this section “needle beam scaffold” means a scaffold supported by parallel horizontal beams that are suspended by ropes attached to overhead points of anchorage. Needle beam scaffold

- (2) A needle beam scaffold shall have Requirements
- (a) floor planks at least 50 mm (2 in.) thick and at least 600 mm (24 in.) longer than the distance between supports;
 - (b) floor planks adequately secured against slipping;
 - (c) supports for platforms not over 3 100 mm (122 in.) apart; and
 - (d) suitable containers for tools securely attached to the scaffold. (EC180/87)

24.7 (1) In this section “outrigger scaffold” means a scaffold that is supported by rigid members cantilevered out from the structure to which they are anchored. Outrigger scaffold

- (2) An outrigger scaffold shall Requirements
- (a) have at least 50 mm 0 250 mm (2 in. 0 10 in.) planks for flooring commencing within 75 mm (3 in.) of the walls; and
 - (b) be well spiked or bolted together.

- (3) The beam of an outrigger scaffold shall Beams
- (a) not extend more than 1 800 mm (72 in.) outside the face of the building;
 - (b) be at least 1 times as long between the fulcrum and the inboard end as between the fulcrum and the outside end of the beam;
 - (c) be well braced against overturning at the fulcrum; and
 - (d) be well secured against horizontal and vertical movement. (EC180/87)

Pole-type scaffold	24.8 (1) In this section “pole-type scaffold (single type)” means a scaffold supported from a base with but one row of uprights located at the outer edge of the platform, the platform being supported by cross beams, the outer ends of which are supported on ledges secured to the uprights and the inner end resting in or on the wall.
Requirements	<p>(2) A pole-type scaffold shall</p> <ul style="list-style-type: none"> (a) have the entire exterior face well braced diagonally and horizontally; (b) be secured against lateral movement by bracing, anchoring to the building, guy wires or other effective means; and (c) have splices in poles made with lagging pieces at least equal in area to the cross section of the pole. (EC180/87)
Swinging scaffold	24.9 (1) In this section, a swinging scaffold consists of a platform supported at the ends by hangers or stirrups and slings, suspended by ropes attached to hooks or thrust-outs which are supported at the eaves of a building, the main cornice, parapet wall or other support.
Requirements	<p>(2) The employer shall ensure that a swinging scaffold when attached to a fixed support is capable of supporting at least four times the maximum load to which the fixed support is likely to be subjected</p> <ul style="list-style-type: none"> (a) without overturning; and (b) without exceeding the allowable unit stresses for the material used in the fixed support.
<i>Idem</i>	<p>(3) The employer shall ensure that</p> <ul style="list-style-type: none"> (a) a hook used to suspend a swinging scaffold <ul style="list-style-type: none"> (i) has safety devices to prevent dislodgement, (ii) is securely tied back to an adequate independent anchorage on the same level or above; (b) thrust-outs used to suspend swing staging <ul style="list-style-type: none"> (i) are rigidly fastened together, (ii) are counterbalanced with sufficient solid material to ensure stability, and (iii) have cleats or bolts fastened at the outer ends of the thrust-outs to act as safety stops.
Hangers	<p>(4) The employer shall ensure that</p> <ul style="list-style-type: none"> (a) when hangers are used to support a swinging scaffold, the hangers <ul style="list-style-type: none"> (i) are of wrought iron or mild steel with a cross section equal to 10 mm 0 32 mm (in. 0 1 in.) or if round, not less than 19 mm (in.) in diameter or of material of equivalent strength, and (ii) are securely attached to the platform;

(b) when wire rope is used as slings to support a swinging scaffold, the wire rope is not less than 13 mm (in.) in diameter.

(5) The employer shall ensure that the platform of a swinging scaffold is not less than 500 mm (20 in.) in clear width, and

Platforms

(a) of the ladder type consisting of boards upon a horizontal ladder-like frame, with parallel sides; or

(b) of a plank type consisting of planks supported on slings or hangers or the equivalent.

(6) The employer shall ensure that the side stringers, rungs and tie rods for ladder type platforms for a swinging scaffold are not less than the dimensions shown in the table set out below.

Dimension of rungs, etc.

(7) The employer shall ensure that building materials are not used for counterweights on any staging or scaffold.

Counterweights

SWINGING SCAFFOLDS							
Length of Stringers (meters)	Width Between Stringers (mm)	Cross Section of Side Stringers (mm)		Rungs		Tie Rods	
		At Ends	At Middle	Total No.	Diam. in mm	Total No.	Diam. in mm
4.6m (15 ft.)	508mm (20 in.)	48mm x 70mm (1 7/8" x 2 3/4")	48mm x 95 mm (1 7/8" x 3 3/4")	10	29mm (1 1/8")	4	8mm (5/16")
4.9m (16 ft.)	508mm (20 in.)	48mm x 70mm (1 7/8" x 2 3/4")	48mm x 95 mm (1 7/8" x 3 3/4")	11	29mm (1 1/8")	4	8mm (5/16")
5.5m (18 ft.)	508mm (20 in.)	48mm x 76mm (1 7/8" x 3")	48mm x 102 mm (1 7/8" x 4")	12	29mm (1 1/8")	4	8mm (5/16")
6.1m (20 ft.)	508mm (20 in.)	48mm x 76mm (1 7/8" x 3")	48mm x 102 mm (1 7/8" x 4")	13	29mm (1 1/8")	4	8mm (5/16")
7.3m (24 ft.)	508mm (20 in.)	48mm x 76mm (1 7/8" x 3")	48mm x 114 mm (1 7/8" x 4 1/2")	16	29mm (1 1/8")	5	8mm (5/16")

(8) The employer shall ensure that the flooring for ladder type platforms on a swinging scaffold is not less than 19 mm (in.) thick plywood or other material of equivalent strength.

Flooring

(9) The employer shall ensure that the planks used on a swinging scaffold

Planking

- (a) are of No. 1 grade spruce or fir;
- (b) are of uniform thickness not less than 50 mm (2 in.);
- (c) are tied together on the underside by cleats
 - (i) of a minimum size of 25 mm by 150 mm (1 in. 0 6 in.),
 - (ii) securely fastened, and
 - (iii) spaced at intervals of not more than 1.2 m (4 ft.);
- (d) do not exceed 3.7 m (12 ft.) in length; and

(e) are located so that the span does not exceed 3.1 m (10 ft.) between the stirrups.

Guardrails

(10) The employer shall ensure that a swinging scaffold is provided with a guardrail in accordance with section 17.3.

Joining

(11) The employer shall ensure that two or more swinging scaffolds are not joined together.

Wire ropes

(12) The employer shall ensure that wire rope used to suspend a swinging scaffold

(a) provides a safety factor of not less than 10, based on the ratio of the manufacturer's rated breaking strength of the wire rope to the static load;

(b) is not less than 10 mm (in.) in diameter; and

(c) is securely fastened to the drum of a winch, with at least 3 turns of wire rope on the drum when the swing staging or bosun's chair is in its lowest position.

Fibre ropes

(13) The employer shall ensure that fibre rope used to suspend swing staging

(a) is not made of manila rope;

(b) has a diameter not less than 10 mm (in.);

(c) has a breaking strength of at least 24 kg (5400 lbs.). (EC180/87; 350/87)

Bosun's chair

24.10 (1) In this section a "bosun's chair" means a seat which is suspended by ropes from an overhead support and moves in a vertical plane.

Requirements

(2) The employer shall ensure that a bosun's chair shall

(a) not be less than 600 mm (24 in.) by 254 mm (10 in.) wide by 25 mm (1 in.) thick;

(b) be reinforced by cleats securely fastened under the full width of the chair;

(c) be supported by a sling which shall be 10 mm (0.4 in.) wire rope if an employee is using a blowtorch from the chair; and

(d) have the suspension rope for the sling securely fastened to a safe point overhead or passed through a securely fastened block and fastened to a secure and accessible object. (EC180/87)

Use of ropes

24.11 The employer shall provide a person using a bosun's chair with, and the person shall use

(a) a rope or strap across the front and rear of the seat and about 430 mm (17 in.) above the seat unless he is wearing an approved safety belt attached to the lower tackle hook or to an overhead fixed support; and

(b) means of preventing the supporting rope from being chafed.
(EC180/87)

24.12 The employer shall ensure that

Other supports

- (a) where work cannot be safely done on or from the ground or from a building or other permanent structure, a scaffold or other safe means of support for employees shall be provided;
- (b) all scaffold shall be of sufficient strength and rigidity to safely support the weight of employees and materials to which it may be subjected; and scaffolds shall be designed with a safety factor of four. (EC180/87)

24.13 The employer shall ensure that if wood is used in a scaffold it shall be

Wood

- (a) Douglas fir, western hemlock, spruce or other wood of equivalent strength; and
- (b) free of decay, large, loose or dead knots or defects that would adversely affect its strength or durability. (EC180/87)

24.14 Nails in scaffolds shall be driven so that they do not bend or tend to withdraw from the wood. (EC180/87)

Nails

24.15 The employer shall ensure that all scaffold fittings and gear shall be suitable and properly installed. (EC180/87)

Fittings and gear

24.16 The employer shall ensure that safety catches shall be provided for all hooks. (EC180/87)

Safety catches

24.17 (1) Tubular scaffolding of an approved design may be used.

Tubular scaffolding
Supports

(2) Steel scaffolds shall be provided with supports at the base when installed in soft ground.

(3) Exterior scaffolds shall be tied into the wall at least every 7.6 m (25 ft.) of height and every 8.5 m (28 ft.) of length. (EC180/87)

Exterior scaffolds

24.18 The employer shall ensure that the footing or support of a scaffold shall be sound, rigid and capable of supporting the maximum load without unsafe settlement or deformation. (EC180/87)

Footing

24.19 No person shall use a barrel, box or other loose object to

- (a) stand upon while on a scaffold or working platform; or
- (b) support a scaffold or working platform. (EC180/87)

Prohibitions

24.20 The employer shall ensure that a scaffold shall

Requirements re
braces and splices

- (a) have all uprights and horizontals braced to prevent lateral movement; and

(b) have no splices between the points of support of horizontal members. (EC180/87)

Planking	<p>24.21 (1) The employer shall ensure that a plank in a platform or a scaffold shall</p> <ul style="list-style-type: none"> (a) overhang its end support by not less than 150 mm (6 in.) and not more than 304 mm (12 in.); (b) be at least 50 mm (2 in.) thick and 250 mm (10 in.) wide, even when dressed; and (c) be fastened in place.
Double planking	<p>(2) Employees shall not work unless there is in place a double width of scaffold planks. (EC180/87)</p>
Platform load	<p>24.22 The employer shall ensure that a 50 mm (2 in.) thick plank in a platform of a scaffold shall</p> <ul style="list-style-type: none"> (a) not be loaded more than 375 kg per m (75 lbs. per sq. ft.) for a span of 1 800 mm (72 in.); (b) not be loaded more than 245 kg per m (50 lbs. per sq. ft.) for a span of 3 100 mm (122 in.). (EC180/87)
Stationary scaffold	<p>24.23 The employer shall ensure that a stationary scaffold more than 1 500 mm (59 in.) above the ground or other firm support shall have a runway or ladder for access thereto. (EC180/87)</p>
Overhead protection	<p>24.24 The employer shall ensure that where there is a danger of material falling on an employee on a scaffold, overhead protection equivalent to at least a 50 mm (2 in.) thick planking spanning not over 3 100 mm (122 in.) shall be provided. (EC180/87)</p>
Guardrails	<p>24.25 (1) The employer shall ensure that every open side and end of a scaffold platform that is 3 100 mm (122 in.) or more above the ground or floor shall be equipped with a guardrail properly braced and fastened to the scaffold.</p>
Exception	<p>(2) Subsection (1) does not apply to platform of a ladder-jack scaffold. (EC180/87)</p>
Installation supervision	<p>24.26 An employer shall designate an experienced person, who may be himself, to supervise the installation, use or removal of a scaffold. (EC180/87)</p>
Shore scaffolds	<p>24.27 Employees shall not use shore scaffolds or lean-to scaffolds on wall brackets. (EC180/87)</p>

- 24.28** Barrels, boxes, loose tile blocks, loose piles of bricks or other unstable objects shall not be used for the support of planking intended as scaffolds. (EC180/87) Supports
- 24.29** The employer shall ensure that the spacing of vertical supports for scaffolds shall not exceed 3 048 mm (10 ft.) on centers; if used for bricklaying, masonry or similar heavy work the spacing of vertical supports shall not exceed 2 133 mm (7 ft.) on centers. (EC180/87) Spacing of supports
- 24.30** The employer shall ensure that vertical supports for scaffolds not exceeding 6 096 mm (20 ft.) in height shall be not less than 50 mm 0 100 mm (2 in. 0 4 in.). (EC180/87) Vertical supports
- 24.31** The employer shall ensure that vertical supports for scaffolds exceeding 6 096 mm (20 ft.) in height shall be not less than 100 mm 0 100 mm (4 in. 0 4 in.) or two pieces of 50 mm 0 100 mm (2 in. 0 4 in.) laminated together. The distance between joints of laminated uprights shall be not less than 1 219 mm (4 ft.). (EC180/87) *Idem*
- 24.32** The employer shall ensure that single vertical uprights shall be extended by means of a butt joint strengthened by two pieces of material not less than 25 mm (1 in.) thick and of the same width as the uprights. Such pieces shall extend for at least 762 mm (2 ft. 6 in.) on both sides of the joint. (EC180/87) Vertical uprights
- 24.33** The employer shall ensure that the minimum size of bearers shall be 100 mm 0 100 mm (4 in. 0 4 in.) or 50 mm 0 150 mm (2 in. 0 6 in.) on edge. (EC180/87) Bearers
- 24.34** The employer shall ensure that scaffolds shall be erected plumb and level. (EC180/87) Erection of scaffold

PART 25 FIRE PROTECTION

- 25.1** At least one approved 4.5 kg (10 lb.) ABC multipurpose fire extinguisher shall be provided Multipurpose extinguisher
- (a) in every workshop;
 - (b) in every storage building for combustible materials;
 - (c) in places where welding or flame cutting operations are carried on and for a reasonable time after their conclusion; and
 - (d) on each storey having a floor space of 464.5 m (5000 sq. ft.) or less in an enclosed building being constructed or altered, and an additional fire extinguisher for each additional 464.5 m (5000 sq. ft.) of floor space in the storey or any fraction thereof. (EC180/87)

Chemical extinguisher	<p>25.2 One or more dry chemical extinguishers with a capacity of 2.2 kg (5 lb.) ABC multipurpose or equally effective extinguisher shall be provided</p> <ul style="list-style-type: none"> (a) where flammable liquids are stored or handled; (b) where oil or gas-fired heating equipment is used; and (c) where a tar or asphalt kettle is used. (EC180/87)
Freezing precautions	<p>25.3 Where fire extinguishing equipment might freeze, use of a suitable non-freezing solution or other effective precautions shall be taken to prevent freezing. (EC180/87)</p>
Requirements	<p>25.4 Fire extinguishers shall be</p> <ul style="list-style-type: none"> (a) protected from mechanical injury; (b) located for easy access at suitably marked stations; and (c) maintained in good operating condition. (EC180/87)
Permanent standpipe	<p>25.5 Where a permanent standpipe is to be installed in a building, it shall</p> <ul style="list-style-type: none"> (a) be installed progressively, so far as is practicable, as the building construction proceeds; (b) be provided with a valve at each hose outlet; (c) be provided at each hose outlet with a nozzle of not less than 38 mm (1 in.) diameter installed in all storeys in such locations that each portion of the building is protected by means of a hose not over 22 870 mm (900 in.) in length; and (d) have a suitable connection for the municipal fire department located on the street side, not more than 900 mm (36 in.) and not less than 300 mm (12 in.) above grade. (EC180/87)
Starting fires	<p>25.6 No person shall use gasoline or highly volatile material for starting fires. (EC180/87)</p>
Other requirements	<p>25.7 This Part is in addition to, and not in substitution for the <i>Fire Prevention Act</i> R.S.P.E.I. 1974, Cap. F-7.1 requirements in force in the province. (EC180/87)</p>

PART 26 EXPLOSIVES

Obligations of employer	<p>26.1 Unless otherwise specified the employer shall ensure compliance with the regulations in this Part and compliance with sections 77 and 78 of the Criminal Code of Canada relating to the legal duties of persons in possession or control of explosive substances. (EC180/87)</p>
Procedures	<p>26.2 Where work is being carried out and explosives are to be used</p> <ul style="list-style-type: none"> (a) a competent person shall be appointed to be in charge of and personally present at all blasting operations, and that person shall

enforce his orders and directions and shall supervise the fixing of all charges and other blasting operations;

(b) the names of all persons designated to handle, transport, prepare or use dynamite or other high explosives shall be posted in the field office and on or in the magazines;

(c) no person inexperienced in handling dynamite or other high explosives, shall handle, transport, prepare or use dynamite or other high explosives unless the inexperienced person works under the personal supervision of a competent person;

(d) no holes shall be drilled within 3 050 mm (10 ft.) of a hole containing explosives or blasting agents, or within 7 620 mm (25 ft.) of a hole being loaded with explosives or blasting agents;

(e) blasting mats shall be used where necessary to protect persons, structures and other property on or adjacent to the workplace from flying rocks and other objects due to blasting operations.
(EC180/87)

26.3 Every firing circuit in connection with blasting operations shall be broken in a suitable manner at a safe distance from the blasting area.
(EC180/87)

Firing circuit

26.4 No greater quantity of dynamite or other high explosive than is required for immediate use on a part of the project shall be outside the magazine.
(EC180/87)

Dynamite outside
magazine

26.5 Explosives in excess of 22.7 kg (50 lbs.) shall not be conveyed in any vehicle which is carrying as merchandise any articles liable to cause or communicate fire or explosion.
(EC180/87)

Conveyance

26.6 Vehicles used to transport explosives shall be in good working order and shall be equipped with a tight wooden floor, or a floor covered with leather, tarpaulin or other suitable material. The body of the vehicle shall be closed in or be provided with sides and ends sufficiently high to prevent the explosives from falling off, or, if an open bodied vehicle is used, the explosives shall be tightly covered with a fire resistant tarpaulin.
(EC180/87)

Vehicles for
transport

26.7 All metal in vehicles liable to come in contact with explosive packages shall be covered with wood, tarpaulin or other suitable material.
(EC180/87)

Idem

26.8 Employees engaged in the loading, unloading or conveying of explosives shall ensure that all precautions are taken to prevent accidents by fire or explosion.
(EC180/87)

Employee
precautions, etc.

26.9 Unauthorized persons shall not have access to explosives.
(EC180/87)

Unauthorized
persons

Vehicle servicing	26.10 Vehicles to be used for the transportation of explosives shall be fully serviced with supplies of fuel, oil and air before being loaded with explosives. (EC180/87)
Fire extinguisher	26.11 Any vehicle carrying explosives shall be equipped with a fire extinguisher of adequate size to deal effectively with gasoline or oil fires. (EC180/87)
Vehicles to be marked "Explosives"	26.12 Any vehicle carrying explosives shall conspicuously display a red flag at least 15 485 mm (24 sq. in.) and shall display signs front, rear and both sides, bearing the word "Explosives" in letters not less than 152 mm (6 in.) high painted in luminous paint on a contrasting background. (EC180/87)
Prohibited vehicles	26.13 Explosives shall not be conveyed in trailers nor in semi-trailers which are not equipped with air or vacuum power brakes. (EC180/87)
Railroad crossings	26.14 Vehicles conveying explosives shall come to a full stop before crossing any railroad track or main highway and shall not cross until it is known that the way is clear. (EC180/87)
Gasoline refuelling	26.15 The gasoline tank of a vehicle shall not be filled while explosives are on the vehicle, except in case of emergency, and then only with the engine stopped and the vehicle parked in an area of least danger to public safety. (EC180/87)
Unattended vehicles	26.16 Vehicles containing explosives shall not be left unattended. (EC180/87)
Storage receptacles	26.17 An approved receptacle may be used to store a maximum amount of 4.5 kg (10 lbs.) of blasting cartridges or 200 detonators. Blasting cartridges and detonators must be stored in separate receptacles at least 3 050 mm (10 ft.) apart. (EC180/87)
Location	26.18 An approved receptacle shall be located in a place acceptable to the officer. It shall be kept away from inflammable goods, and shall be easily accessible in case of fire. (EC180/87)
Construction	26.19 An approved receptacle shall be substantially constructed of wood, copper or other suitable material and provided with a closely fitted lid secured by a lock and hinges, or otherwise closed and secured to prevent unauthorized persons having access thereto. A receptacle shall be kept locked except when required to be opened for necessary purpose. It shall be used exclusively for the storing of explosives and covered or lined to prevent exposure to any iron, steel or any other hard or gritty material. The interior of the receptacle shall be kept scrupulously clean. The

receptacle shall have the word “Explosives” conspicuously painted thereon in red letters on a black background. (EC180/87)

26.20 A maximum of 22.7 kg (50 lb.) of blasting explosives or a maximum of 22,000 detonators may be kept for use in a separate store. (EC180/87)

Separate store

26.21 A separate store shall be apart from any dwelling house and at a safe distance from any street, highway, public thoroughfare or public place. (EC180/87)

Location

26.22 Such a store shall be of substantial construction using 50 mm (2 in.) or equivalent material and shall be made fire resistant. (EC180/87)

Construction

26.23 The store shall be provided with a substantial outwardly opening door or cover which shall be kept locked except when issuing or receiving explosives or other necessary purpose. (EC180/87)

Protection

26.24 The store shall be adequately ventilated and the interior and all fittings therein shall be so constructed, covered or lined as to prevent exposure of any iron or steel or of any hard or gritty surface, or the entry, detaching or accumulating of any grit, iron, steel or similar substance. (EC180/87)

Ventilation, etc.

26.25 The interior of the store shall be kept scrupulously clean. (EC180/87)

Interior

26.26 Where explosives that are liable to be affected by water are stored, precautions shall be taken to exclude water from the store. (EC180/87)

Water

26.27 No fires, lights, matches, oiled waste, iron, steel, grit or any article liable to spontaneous ignition or likely to cause explosion or fire shall be taken into or permitted to be at any time in the store or within 7.5 m (25 ft.) of a place where explosives are being handled, transported or used. (EC180/87)

Safety

26.28 All tools or implements kept or used in a store where explosives are present, or used in openings securing, or removing packages containing explosives, shall be made only of copper, bronze, brass, gun metal, wood or other safe and suitable material. (EC180/87)

Tools

26.29 The store shall have the word “Explosives” clearly displayed on it in large letters on a contrasting background. (EC180/87)

Store marked
“Explosives”

26.30 Quantities of blasting explosives in excess of 22.7 kg (50 lbs.) or detonators in excess of 2000 shall be stored in accordance with the *Explosives Act* (Canada). (EC180/87)

Compliance with
Explosive Act

Handling	26.31 Explosives and detonators shall be kept and handled separately until the last practicable moment necessary for bringing them together. (EC180/87)
Containers	26.32 Explosive containers shall be handled with care. (EC180/87)
Opening	26.33 Explosive containers shall be opened within a storage area. (EC180/87)
Smoking	26.34 Employees shall not smoke while handling explosives. (EC180/87)
Capping of fuses	26.35 Fuses shall not be capped or cartridges primed in any place where explosives are stored. Fuses shall be cut off square for insertion in the cap and shall be capped only by means of a crimping tool. (EC180/87)
Thawing	26.36 Explosives shall not be thawed near an open fire or a boiler, nor by direct contact with steam or hot water. (EC180/87)
Inspection	26.37 After blasts have been fired, a thorough examination shall be made to ascertain that no unexploded charges remain in holes. (EC180/87)
Prohibition of drilling	26.38 No drilling shall be done in any hole that has been charged or blasted. (EC180/87)
<i>Idem</i>	26.39 Holes shall not be drilled within 600 mm (24 in.) of holes in which a misfire has occurred. (EC180/87)
Drill holes	26.40 Drill holes, whether sunk by hand or machine drill, shall be of sufficient size to admit the free insertion to the bottom of the hole of a stick or cartridge of the explosive without ramming, pounding or undue pressure. (EC180/87)
Springing holes	26.41 When springing holes, ample time shall be left for the hole to cool between springing shots, and also between the last springing shot and the loading of the main charge. (EC180/87)
Priming cartridges	26.42 Priming cartridges shall not be slit or roughly tamped, and the wrapping shall not be removed from the primer cartridge. (EC180/87)
Damaged fuses	26.43 Damaged fuses shall not be used. (EC180/87)
Handling	26.44 Fuses shall be handled with care so as to avoid pinching or bending sharply. (EC180/87)
Safety fuses	26.45 Safety fuses shall be stored for several hours at room temperature before handling in cold weather. (EC180/87)

- 26.46** Tamping rods of wood or other approved material shall be used, and all holes shall be carefully tamped with stemming materials by using pressure rather than strokes. (EC180/87) Tamping
- 26.47** Fuses shorter than 900 mm (36 in.) shall not be used in any blasting operation. (EC180/87) Fuses prohibited
- 26.48** All electrical detonators shall be tested with an approved galvanometer and the ends of the detonator wires short circuited by twisting them together until ready to be connected to the fuse line. The whole circuit shall be similarly tested before connecting detonator wires to leading wires. Employees shall move to shelter or to a safe distance before final connection to lead wires is made. (EC180/87) Electric detonators
- 26.49** Blasting machines shall be regularly inspected and kept in good condition. (EC180/87) Blasting machines
- 26.50** Rated capacities of blasting machines shall not be exceeded unless in accordance with the manufacturer's recommendations. (EC180/87) Rated capacity
- 26.51** When firing of a charge is done from power lines, a safety switch shall be provided, so constructed that the door may be closed and locked only in the "off" position. The box shall be kept locked and the switch made inaccessible to anyone but the employee responsible for firing the charge. (EC180/87) Firing charge from power lines
- 26.52** An employee in charge of firing explosive charges shall, before firing a charge, give ample warning to all persons in the vicinity, and shall satisfy himself that all persons have reached a place of safety. (EC180/87) Warning procedure
- 26.53** An employee lighting fuses in a blasting operation shall be accompanied by another employee if possible. (EC180/87) Fuse lighting
- 26.54** No more than 12 holes shall be fired in any round of shots by one employee, using safety fuses, unless ignited by means of igniter cord or an approved equivalent. (EC180/87) Firing
- 26.55** In blasting operations, holes shall not be loaded unless it is the intention to prime and fire them all in a single blasting operation. (EC180/87) Loading holes
- 26.56** No part of any loaded charge shall be tampered with or withdrawn. (EC180/87) Loaded charge withdrawal
- 26.57** An employee in charge of firing explosives by electricity shall not enter or allow any other person to enter any place where charges have

been fired until he has disconnected the firing cable from the power source or has pulled out and locked the safety switch. (EC180/87)

Inspection and
clearance

26.58 An employee in charge of firing explosive charges shall make a thorough inspection of the site after a charge has been fired and give clearance before other employees are allowed to return to work. (EC180/87)

Loose rocks

26.59 Loose rocks shall be scaled off sides of excavations after blasting operations in order to eliminate the hazard of falling rocks before work is resumed. (EC180/87)

Methods of
destroying

26.60 Waste or deteriorated explosives of any sort shall be destroyed by detonating, burning or other approved method. (EC180/87)

Misfiring

26.61 In cases where a charge misfires or is suspected of having misfired, employees shall not be allowed to return to the place where the blasting is being carried out for a period of thirty minutes from the time of lighting of the last fuse, or a period of time in minutes equal to twice the number of metres in the longest fuse used, whichever is longer. (EC180/87)

Idem

26.62 Holes in which a charge has misfired shall be marked by the insertion of a wooden marker or some other conspicuous marker. Attempts shall not be made to remove unexploded charges. (EC180/87)

Reblasting

26.63 Misfired charges shall be reblasted. (EC180/87)

Radio transmitters

26.64 Operating radio transmitters shall not be allowed within 45 750 mm (150 ft.) of electric blasting operations. Signs shall be posted to that effect. (EC180/87)

Director to be
informed

26.65 Prior to commencement of any blasting operation the employer shall be required to inform the Director. (EC180/87)

PART 27 DEMOLITION

Compliance

27.1 Unless otherwise specified the employer shall ensure compliance with the regulations in this Part. (EC180/87)

Pre-demolition
structure safety

27.2 Where a structure to be demolished has suffered previous damage likely to endanger the safety of an employee by its accidental collapse

- (a) the structure shall be temporarily braced or shored; or
- (b) other measures shall be taken to the satisfaction of the officer to prevent injury to any person until the structure is safely demolished. (EC180/87)

- 27.3** No person shall commence or continue to demolish a building or structure until
- (a) he has taken steps to prevent injury to any person in or near the project or the adjoining property; and
 - (b) existing gas, water, steam, electrical and other services to the project have been disconnected and capped. (EC180/87)
- 27.4** Glass shall be removed from windows and other locations in the project before demolition commences. (EC180/87)
- 27.5** No person shall stock or pile any material or debris in the project so as to endanger the safety of employees. (EC180/87)
- 27.6** Adequate supports, braces or shoring shall be provided for the support of a derrick or other hoisting equipment. (EC180/87)
- 27.7** Scaffolding shall be made self supporting and be independent of that portion of the project being demolished. (EC180/87)
- 27.8** Every means of egress shall be protected from falling material during demolition operations. (EC180/87)
- 27.9** (1) Subject to subsection (2), demolition shall proceed systematically from the highest to the lowest part in the project.
- (2) In steel skeleton-type buildings, the steel frame may be left in place during demolition of the masonry if the masonry and any loose material is removed from the steel frame in the order provided in subsection (1).
- (3) The work above each tier or floor shall be completed before the safety of its supports is impaired by demolition operations. (EC180/87)
- 27.10** No employee shall enter or shall be permitted to enter any area where his safety might be endangered by materials or debris falling from the demolition operations. (EC180/87)
- 27.11** (1) No person shall disconnect a truss, girder or other member until it has been relieved of all load except its own weight and given temporary support or lashed ready for lowering.
- (2) A derrick or other adequate equipment shall be provided for the lowering of a truss, girder or beam. (EC180/87)
- 27.12** (1) Masonry walls shall be removed in reasonably level courses in any one storey.

<i>Idem</i>	(2) Masonry walls shall not be loosened or permitted to fall in such masses as to endanger the structural stability of a floor or other support of the project. (EC180/87)
Safety measures	27.13 No employee shall stand on top of a wall, pier or chimney to remove material therefrom, unless safe flooring or adequate scaffolding or staging is provided on all sides and within 3 660 mm (12 ft.) of his place of working. (EC180/87)
Debris removal to ground	27.14 (1) Rubbish and debris shall be lowered to the ground level in suitable containers or chutes.
Chutes	(2) Objects larger than rubbish or debris shall be lowered by cranes, hoists or other mechanical means. (EC180/87)
Chutes	27.15 A chute shall <ul style="list-style-type: none"> (a) be well constructed and securely fastened; (b) if at more than 45 degrees to the horizontal, be enclosed on the four sides; (c) have a prominent sign warning of the danger at the outlet from the chute. (EC180/87)
Chute entrance requirements	27.16 The entrance to a chute shall <ul style="list-style-type: none"> (a) have a 100 mm (4 in.) or larger curb or cleat where the entrance is at or below the floor level; (b) not be more than 1 200 mm (48 in.) high; (c) be kept closed when not in use; and (d) have a prominent sign warning of danger at the entrance. (EC180/87)
Basement or excavation	27.17 Following demolition of a structure, any basement or similar excavation shall <ul style="list-style-type: none"> (a) be fenced or barricaded; or (b) if construction is not to proceed forthwith, be backfilled to grade level. (EC180/87)
Application by section	27.18 (1) This section applies to demolition by <ul style="list-style-type: none"> (a) a heavy weight suspended by cable from a crane or other hoist machine; (b) a power shovel, bulldozer or other vehicle; or (c) any other powered mechanical device.
Structure height	(2) The structure, or portion to be demolished shall not be more than 24 400 mm (80 ft.) high.
Demolition zone requirements	(3) The person in charge of demolition shall ensure that no person, except his employees, enters a demolition zone

- (a) having its centre at the point of demolition; and
- (b) having a horizontal radius equal to 1 times the height of the structure, or portion of structure being demolished.

(4) The person in charge of demolition shall ensure that no employee except an employee directly engaged on the mechanical demolition shall

Persons present

- (a) enter or be within the demolition zone, while the structure is being mechanically demolished;
- (b) enter or be on the structure to be mechanically demolished at any other time.

(5) The control of a mechanical device for demolishing a structure shall be operated from a safe location which shall be as remote as is practicable from the demolition operation.

Mechanical device
control location

(6) Where a swinging weight is used for demolition, the supporting cable shall be of such length or so restrained that the weight will not swing against any structure other than the structure being demolished. (EC180/87)

Swinging weight

PART 28 EXPLOSIVE - ACTUATED TOOLS

28.1 The latest edition of the Canadian Standards Association CAN3-Z166 Safety Code for Explosive Actuated Tools and any additions or amendments thereto shall be used as a guide for the safe operation and maintenance of explosive actuated tools. (EC180/87)

Standards

PART 29 HAND TOOLS AND PORTABLE POWER TOOLS

29.1 In this Part

Definitions

- (a) “hand tool” means hand held equipment which is dependent on the energy of the employee for its direct effect and which does not have any hydraulic, pneumatic, electrical or chemical energy source for its operation;
- (b) “owner” for the purpose of this Part, means a person who has purchased, rented or otherwise obtained a tool and has brought the tool to a place of employment for use at that place of employment;
- (c) “portable power operated hand tools” means those powered by a hydraulic, pneumatic, electrical or chemical energy source and which are used by holding with one or both hands;
- (d) “tool” means a hand tool, a portable power operated hand tool and a power-actuated hand tool;

(e) “user” means any person who uses a tool at a place of employment. (EC180/87)

Responsibilities of
owner for tools

29.2 The owner of a tool shall ensure that the tool

- (a) is of good quality material appropriate for the intended use;
- (b) is inspected before being used and repaired or replaced if necessary;
- (c) is maintained in safe working condition;
- (d) is equipped with adequate devices to ensure a secure hand grip;
- (e) has smooth handles without splinters or sharp edges, firmly attached to the tools so as to prevent them from becoming loose;
- (f) is of a non-sparking type where there is risk of an explosive atmosphere;
- (g) has a proper storage place or facility to store or guard the tool when not in use at the place of employment. (EC180/87)

Responsibilities of
employer

29.3 The employer shall ensure that

- (a) employees are competent in the safe handling and use of tools;
- (b) employees shall be properly instructed and trained in the safe use of the hand tools they use;
- (c) employees are instructed to use tools only for the specific purpose for which they are designed;
- (d) employees wear and use protective clothing and equipment as required by these regulations;
- (e) procedures are implemented for safely supplying tools and materials to employees located in hazardous places;
- (f) hammers, sledges, cold chisels, cutters, pinchers and other similar shock tools are made of carefully selected steel, hard enough to withstand repeated blows without extensive mushrooming but not so hard as to chip or break;
- (g) files are provided with substantial metal ferruled handles or other suitable holders and shall not be used without them;
- (h) lifting jacks shall be of such construction that the load will remain supported in any position and cannot be lowered inadvertently;
- (i) when lifting objects with jacks, the jacks shall be set on solid footing, properly centered for the lift and so placed that they can be operated without obstruction; and
- (j) after objects have been raised to the desired height by means of jacks, substantial blocking shall be placed under the object before work is started on the object or before the employee gets under the object. (EC180/87)

Handling

29.4 The user shall use and handle tools in a safe manner. (EC180/87)

29.5 Without limiting the generality of the duties under section 29.4 every user shall

Responsibilities of
user

- (a) inspect tools before use;
- (b) not use defective tools;
- (c) report the existence of defective tools to the employer;
- (d) maintain tools in safe working condition;
- (e) use tools only for the specific purposes for which they were designed;
- (f) place tools in safe suitable containers when not in use;
- (g) ensure that tools are not left lying on floors, passageways, stairways or in other places where persons work or are likely to work or pass, or on elevations from which they may fall on persons below;
- (h) ensure that sharp edged or sharp pointed tools are provided with protection for the edges or points when not in use;
- (i) carry tools in a way that does not interfere with their using both hands on the ladder or while climbing a structure or on any hazardous work requiring the use of both hands;
- (j) pass tools from one person to another in a safe manner;
- (k) hold with a holding tool or other suitable device all chisels, drills, etc., which are held by one employee and struck by another; and the employee holding the tool shall place himself where he will be in the least danger of being hit by the hammer if it should glance off the tool or if the handle should break;
- (l) keep all axes sharp and not use an axe as a mallet or wedge;
- (m) clear away interfering objects before swinging an axe;
- (n) lay crowbars or pinchbars flat in safe places when not in use and not leaning against a flat surface;
- (o) keep points or edges of crowbars or pinchbars in good condition to minimize slipping hazards;
- (p) keep corrugations on the jaws of pipe wrenches sharp;
- (q) use proper size wrenches and spanners when tightening or loosening nuts and bolts;
- (r) discard or remove from service till repaired any wrenches with spread, battered or cracked jaws, cracked or broken handles or other defects;
- (s) not carry edged or pointed tools such as screwdrivers, chisels, etc., in pocket;
- (t) not use pipe or other extensions on wrenches or spanners unless the tools are designed for use in this manner;
- (u) not chop towards their feet or legs with an axe. (EC180/87)

29.6 The employer shall ensure that

- (a) portable power tools shall be inspected at regular intervals and any defective tools shall be removed from service until repaired;

Responsibilities of
employer, power
tools

- (b) power tools shall be cleaned with a non-flammable non-toxic solvent;
 - (c) all electrically powered tools shall be properly grounded or of the double insulated type;
 - (d) electric cords used on power tools shall be inspected periodically and repaired or replaced where necessary;
 - (e) electric cords and air lines used on power tools shall be suspended over aisles or work areas, where possible, to eliminate stumbling or tripping hazards;
 - (f) drill steel used for pneumatic hammers shall be sharpened and tempered in accordance with manufacturer's specifications.
- (EC180/87)

Responsibilities of
employee, power
tools

29.7 The employee shall

- (a) wear eye protection when using power tools;
- (b) wear dust type respirators while buffing, grinding or sanding material which produces harmful dusts;
- (c) disconnect the source of power from power tools before changing accessories;
- (d) keep all guards on power tools in place while the tool is in use;
- (e) protect flexible shafts of flexible tools against denting and kinking which may damage the inner core;
- (f) when starting the motor of a flexible shaft tool, hold the tool end firmly to prevent whipping. (EC180/87)

Prohibited activities

29.8 The employee shall not

- (a) wear gloves, ties, loose clothing or jewellery while using revolving power tools such as drills, saws and grinders;
- (b) disconnect air lines from air operated tools and use the lines for cleaning clothing;
- (c) point a pneumatic hammer at anyone or stand directly in front of a person handling a pneumatic hammer. (EC180/87)

PART 30 MECHANICAL SAFETY

Definitions

30.1 In this regulation

- (a) "safeguard" means a guard shield, guardrail, fence, gate, barrier, wire mesh or other protective enclosure, safety net, handrail or other similar equipment designed to protect the safety of employees, but does not include personal protective equipment;
- (b) "push block" means a block of wood long enough to protect employees from the danger area and provided with a handle similar to that of a hand plane and having a shoulder at the rear;

(c) “push stick” means a narrow strip of wood or other soft material with a notch cut into one end. (EC180/87)

30.2 The employer shall ensure that all moving parts of machinery, equipment and tools shall be effectively safeguarded unless

Guarding moving parts

- (a) they are so constructed or located as to prevent a person or object from coming in contact with them; or
- (b) the guarding would unreasonably interfere with the operation of the machinery, equipment or tool. (EC180/87)

30.3 (1) The employer shall ensure that machinery is erected, installed, assembled, started, operated, used, handled, stored, stopped, serviced, tested, adjusted, maintained, repaired and dismantled in accordance with the manufacturer's specifications.

General provisions respecting machinery

(2) The employer shall ensure that the manufacturer's rated capacity or other limitations on the operation of the machinery or any part of it, as set out in the manufacturer's specifications or in any relevant specifications certified by an engineer are not exceeded and are clearly marked on the machinery in a location clearly visible to the operator.

Specifications

(3) An operator of machinery shall not exceed the limitations described in subsection (2).

Idem

(4) The employer shall ensure that machinery is regularly inspected for defects and machinery which could cause injury to employees is removed from service until repaired. (EC180/87)

Inspection

30.4 (1) The employer shall ensure that operational controls on machinery are

Starting machinery

- (a) located and protected in such a manner as to prevent unintentional activation;
- (b) suitably identified so as to indicate the nature of each control mechanism.

(2) Where a pedal is used to operate a clutch or belt shifter, the employer shall ensure that it is so guarded that it cannot be struck accidentally so as to activate the machine.

Pedals

(3) The employer shall ensure that each pair of active and idler pulleys is equipped with a permanent belt shifter provided with a mechanical means of preventing the belt from creeping from the idler to the active pulley.

Pulleys

- (4) The employer shall ensure that
 - (a) where moving machine parts may endanger employees when the machine is started and there is not a clear view of the machine or

Alarm system

	<p>parts from the control panel or operator's station, an alarm system is installed; and</p> <p>(b) the alarm system gives an effective warning before start up of the machine so that employees are made aware of the imminent start-up.</p>
Starting	(5) Before starting machinery, an employee shall ensure that neither he nor any other employee is endangered by its starting.
Operation	(6) While operating machinery, an employee shall ensure that neither he nor any other employee is endangered by its operation. (EC180/87)
Stopping machinery	30.5 (1) The employer shall ensure that the operator of any machine has unimpeded access in the immediate area of the employees work area to the means of stopping that machine.
<i>Idem</i>	(2) The employer shall ensure that every power driven machine not driven by an individual motor or prime mover is equipped with a clutch, idler pulley or other means of quickly disengaging the power sources. (EC180/87)
Lock-out	30.6 (1) The employer shall ensure that in addition to the normal control start and stop switch, all electrically driven machinery and equipment has installed in the power supply circuit a disconnecting means which is <ul style="list-style-type: none"> (a) of a lockable type; (b) in a location familiar to all; and (c) properly identified.
<i>Idem</i>	(2) The employer shall provide a safety lock and key for use on disconnecting means described in subsection (1) to all machinery and equipment operators and all maintenance personnel.
Training	(3) The employer shall ensure that an employee has been adequately trained in lockout procedures for the particular situation.
Shut-down	(4) The employer shall ensure that machinery is not lubricated, cleaned, serviced or repaired while in motion unless a means is available which does not expose the employee to risk of injury. (EC180/87)
Servicing	30.7 (1) Where machinery or equipment is shut down for cleaning, maintenance or repairs, the employer shall ensure that no employee carries out work on the machinery or equipment until that employee has <ul style="list-style-type: none"> (a) locked out the source of energy using the safety lock and key that the employer must provide under section 30.6; and (b) put the machine in a zero energy state by ensuring that all <ul style="list-style-type: none"> (i) power sources, (ii) pressurized fluids and air, (iii) potential mechanical energy,

- (iv) accumulators and air surge tanks,
- (v) kinetic energy of machine members,
- (vi) loose or freely movable machine members, and
- (vii) material or workpieces supported, retained or controlled by the machine which can move or cause movement, are
 - (A) locked out,
 - (B) vented to the atmosphere,
 - (C) reduced to atmospheric pressure, or
 - (D) otherwise acted upon to render the machinery incapable of spontaneous or unexpected action;
- (c) put on the control device of the machinery a tag which does not conduct electricity and which contains
 - (i) words directing persons not to start or operate the machinery,
 - (ii) the employee's printed name and signature, and
 - (iii) the date when the tag was put on the machinery.

(2) No employee shall carry out work on machinery or equipment shut down for cleaning, maintenance or repairs until he has complied with subsection (1) and has double checked to ensure that the machinery is inoperative. *Idem*

- (3) No person shall remove a lock-out device or tag except *Removal of lock-out device*
- (a) the employee who installed it; or
 - (b) in an emergency or where attempts made to contact the employee indicate he is not available, a competent employee designated by the employer, who has first ensured that no person will be endangered by the removal.

(4) On completion of servicing or repairs, the employee shall, before the operation of the machine is resumed, ensure that putting the machinery in motion will not endanger any person. (EC180/87) *Activation*

30.8 (1) The employer shall ensure that sufficient space is provided around individual machines or process units in order to ensure the safety of employees while operations, adjustments or repairs are being carried out. *Contact with machinery*

- (2) Where an employee or the employee's clothing might come into contact with moving parts of machinery, the employee shall *Clothing*
- (a) wear close fitting clothing;
 - (b) confine head or facial hair; and
 - (c) avoid wearing dangling neckwear, jewellery, rings or similar items. *

* The wearing of medic-alert bracelets is permitted when such bracelets are used with transparent rubber bands that fit snugly over the bracelets. (EC180/87)

Safeguards	30.9 (1) Subject to this section, an employer shall provide effective safeguards where an employee may come into contact with moving belts, rollers, gears, drive-shafts, keyways, pulleys, sprockets, chains, ropes, spindles, drums, counterweights, flywheels or couplings on machinery, pinchpoints and cutting edges.
<i>Idem</i>	(2) Subsection (1) does not apply to machinery that is equipped with an effective device which stops the machinery automatically when an employee comes into contact with the parts of it mentioned in subsection (1) or prevents an employee from coming in contact with parts mentioned in subsection (1).
Screening employees	(3) Where there is a possibility of machine failure that may result in an injury to an employee from flying objects, the employer shall install safeguards strong enough to contain or deflect the broken parts or particles of the machinery and flying particles of any product.
Alteration	(4) The employer and employee shall not alter the design where machines are designed with guards that interlock with the machinery control so as to prevent operation of the machine unless the guard is in its proper place.
Alternative protection	(5) Where it has been determined that an effective safeguard cannot be provided, the employer shall ensure that an alternative mechanism, system or change in work procedure, approved by an officer, is put into place to protect employees from being exposed to the hazards associated with the lack of the safeguard. (EC180/87)
Removing and rendering ineffective safeguards	30.10 (1) A person shall not remove or render ineffective a safeguard, other than a removable guardrail or gate, that is required by these regulations unless the removal or rendering ineffective is necessary to enable the effecting of maintenance or adjustments.
<i>Idem</i>	(2) Where a person has removed or rendered ineffective a safeguard, he shall ensure that <ul style="list-style-type: none"> (a) the safeguard is replaced before he leaves the unguarded area; and (b) the safeguard will function properly.
Lock-out	(3) Where a safeguard for machinery has been removed or rendered ineffective and the machinery cannot be directly controlled by the employee, the employee who removes or renders ineffective the safeguard shall lock-out and tag the machine according to section 30.7. (EC180/87)
Abrasive and grinding wheels	30.11 (1) An employer shall ensure that

- (a) the maximum number of revolutions per minute of an abrasive wheel or disc, as recommended for safe use in the manufacturer's specifications, is identified on the wheel or disc; and
- (b) the maximum revolutions per minute of a grinder output shaft is identified on the grinder.

(2) An employer and employee shall ensure that a tool rest is installed on a fixed grinder in a manner compatible with the work process.

Rests

(3) An employee shall not

Speed

- (a) operate abrasive and grinding wheels at a speed in excess of that specified by the manufacturer;
- (b) do grinding on the side of an abrasive wheel unless the wheel has been designed for that purpose; or
- (c) adjust a tool rest while the grinder is in motion.

(4) The employer shall ensure that abrasive and grinding wheels are fitted with protective hoods of sufficient strength to contain fragments or ruptured wheels.

Hoods

(5) The employer shall ensure that abrasive or grinding wheels are checked for flaws before installation.

Checks

(6) The employer shall ensure that abrasive wheels are mounted in accordance with manufacturer's specifications.

Mounting

(7) Before applying any work, the employee shall run abrasive and grinding wheels at full operating speed in accordance with grinder and wheel manufacturer's specifications. (EC180/87)

Test

30.12 Where there is or may be a danger of injury to an employee's hands, the employer shall provide and the employee shall use a push stick or push block for feeding materials into cutting or shaping machinery. (EC180/87)

Cutting or shaping
machinery

30.13 (1) The employer shall ensure that stands for lead sawyers on sawmills are protected by shields not less than 1.2 m (4 ft.) in height and constructed of iron or steel not less than 6 mm (. in.) thick, wooden planks not less than 5 cm (2 in.) thick or other material of equal strength.

Saws

(2) The employer shall ensure that wheels on band saws and the return portion of the blades between the upper and lower wheels are enclosed with guards of sheet metal not less than 1 mm (.04 in) in thickness or other material of equal strength.

Band saws

(3) The employer shall ensure that circular saws are provided with hood guards which cover as much as possible of the exposed part of the saw at least to the depth of the teeth. (EC180/87)

Circular saws

Tumblers	<p>30.14 The employer shall ensure that the access doors in the guards or enclosures to tumbler drums are, if there is a potential hazard to employees, fitted with interlocks which will</p> <ul style="list-style-type: none"> (a) prevent the access doors from opening while the drums are rotating; or (b) disconnect the power from the driving machinery causing the tumblers to stop, if the doors are opened. (EC180/87)
Agitators	<p>30.15 When the top of an open agitator, beater or paddle tank is less than 100 cm (40 in.) above the floor, walkway or work area, the employer shall ensure that guardrails are installed on all exposed sides. (EC180/87)</p>
Conveyers	<p>30.16 (1) The employer shall ensure that a conveyer is so constructed and installed that</p> <ul style="list-style-type: none"> (a) sufficient clearance is provided between the material transported and fixed or moving object; (b) hazardous shearing points between moving and stationary parts are avoided; (c) no conveyer can feed onto a stopped conveyer.
Emergency stop devices	<p>(2) The employer shall ensure that a power driven conveyer to which an employee has access is provided with emergency stop devices at</p> <ul style="list-style-type: none"> (a) loading and unloading stations; (b) drive and take up sections; and (c) other convenient places along the run of the conveyer. (EC180/87)
Walkways	<p>30.17 (1) The employer shall ensure that an elevated conveyer, where employee access is necessary, is provided with a walkway along its entire length which is not less than 450 mm (18 in.) wide and is equipped with guardrails.</p>
<i>Idem</i>	<p>(2) Where an employee must cross over a conveyer, the employer shall ensure that adequate crossing facilities are provided. (EC180/87)</p>
Guards	<p>30.18 (1) Where there is danger of injury to an employee from material falling from a conveyer, the employer shall ensure that sheet metal or screen guards are installed under a conveyer which is not entirely enclosed.</p>
Belt conveyer	<p>(2) The employer shall ensure that a belt conveyer is provided with adequate guards extending 1 060 mm (40 in.) from the pulleys and along the sides of the conveyer where there is danger of injury to an employee.</p>
Screw conveyers	<p>(3) The employer shall ensure that a screw conveyer is placed in metal troughs fitted with secured covers of not less than 3.2 mm (in.) thick metal plates in removable sections or other equivalent protection.</p>

(4) The employer shall ensure that when a screw conveyer is fed from the floor level, adequate safeguards are provided around the opening. *Idem*
(EC180/87)

30.19 (1) Unless the conveyer is stopped and locked out, an employee shall not stand on the supporting frames of an open conveyer while loading, unloading or when clearing blockages. *Prohibitions*

(2) An employee shall remove heavy or bulky articles by hand from a moving conveyer at designated stations only. *Idem*
(EC180/87)

PART 31 REPAIRS TO MACHINERY

31.1 The employer shall ensure that all power-operated machinery shall
(a) be carefully inspected as far as is practicable each day before being operated; *Inspection and repair*
(b) not be used while repair on maintenance work is being done on the machine;
(c) not have its steam, air or hydraulic lines repaired while subjected to internal pressure; and
(d) be adequately blocked while repair or maintenance work is being done under the machinery. (EC180/87)

31.2 Heavy duty tire and rim assemblies shall be maintained in such a manner that all fastenings are correctly positioned. (EC180/87) *Tire and rim*

31.3 Electric machinery shall have the source of power disconnected and locked during repair or maintenance. (EC180/87) *Electric*

31.4 Tires which have been removed from trucks or heavy construction equipment shall not be inflated on lock ring type rims without using some restraining device to contain flying parts should a blowout occur. *Tires, inflation*
(EC180/87)

PART 32 PILE DRIVING EQUIPMENT

32.1 The employer shall ensure that *Pile driving equipment*
(a) on steam or air-operated hammers of pile-drivers, the hoses shall be secured to prevent reaction hazardous to employees in case of a break of the hose or connections by placement of suitable safety straps across all couplings;
(b) decks and working areas around the pile-driver shall be provided with a guardrail and kept clear of ropes, tools and other materials;
(c) where piling is being hoisted in the leads, employees not engaged in the operation shall remain at a safe distance;

- (d) pile-driver operators shall be responsible for ensuring that the suspended hammer is securely chocked when not in use and that on pile-drivers with swinging or suspended leads, the hammer shall not be raised until necessary;
- (e) pile-heads shall be cut square, and shall be cleaned of debris, bark and slivers before being driven but only when the hammer is securely chocked;
- (f) the exhaust of steam engines shall be arranged to discharge at a point where it will not interfere with the view of the engineer or work or injure employees nearby;
- (g) hoisting-engines shall be covered with a suitable roof or shelter to eliminate hazards to the operator from falling objects and as a protection from the weather. (EC180/87)

PART 33 POWERED MOBILE EQUIPMENT

Powered mobile
equipment

33.1 In this Part “powered mobile equipment” means self-propelled machinery designed to carry, push, pull, dig, compact, lift, stack, tier or move materials or to provide a work platform for employees and includes trucks. (EC180/87)

Screens, etc.

33.2 The employer shall ensure that operators of powered mobile equipment are provided with protection against falling, flying or intruding objects by means of adequate cabs, screens, shields, grills, deflectors or guards. (EC180/87)

Rollover protection

33.3 The employer shall ensure that the equipment listed as follows and manufactured after January 1, 1974, is equipped with Rollover Protective Structures (ROPS) meeting the minimum safety requirements of the CSA Standard B352-M respecting Rollover Protective Structures for Agricultural, Construction, Earthmoving, Forestry and Industrial Machines including:

- (a) crawler tractors, loaders, tree harvesters, skidders and forwarders;
- (b) wheeled dozers, loaders, skidders and forwarders;
- (c) motor graders, tandem rollers and compactors;
- (d) self-propelled wheeled scrapers;
- (e) agricultural and industrial tractors; and
- (f) off-highway equipment or any other equipment designated by the Director as requiring ROPS. (EC180/87)

Pre-1974 equipment

33.4 Equipment manufactured before January 1, 1974, equipped to meet the requirements of section 33.3 may continue to be used. (EC180/87)

33.5 Equipment manufactured before January 1, 1974, which does not meet the requirements of section 33.3 may continue to be used except in circumstances where rollover hazards are likely to exist. (EC180/87) *Idem*

33.6 The employer shall ensure that the following information is permanently marked on ROPS equipment: *Identification*

- (a) name and address of the manufacturer or the professional engineer who certified the ROPS;
- (b) machine make and model number or other effective means of identifying the machine for which the ROPS was designed; and
- (c) serial number or other effective means of identifying the ROPS. (EC180/87)

33.7 The employer shall ensure that all modifications or repairs to existing ROPS meet the requirements of this Part and are certified by the modification design agency, the installing agency or a professional engineer and the certification information is made available to an officer on request. (EC180/87) *Alterations*

33.8 (1) The employer shall ensure that powered mobile equipment which has been fitted with ROPS is provided with *Restraint equipment*

- (a) seat belts for the operator and passengers which comply with or exceed whichever of the following recommended practices of the Society of Automotive Engineers are appropriate:
 - J386C Seat Belts for Construction Machines;
 - J117C Dynamic Test Procedure - Type 1 and Type 2 Seat Belt Assemblies;
 - J800C Motor Vehicle Seat Belt Assembly Installations; or
- (b) where the work process renders the wearing of seat belts impracticable, shoulder belts, bars, gates, screen or other restraining devices designed to prevent the operator and passengers from being thrown outside the rollover protective structures.

(2) The operator of and passengers on powered mobile equipment shall use the seat belts and restraining devices provided while the equipment is in motion. (EC180/87) *Use*

33.9 Where a hazard exists from falling objects, the employer shall ensure that powered mobile equipment is equipped with Falling Objects Protective Structures (FOPS) or overhead protection that meets the minimum requirements of the Recommended Practices of the Society of Automotive Engineers, or the Standards of the American Society of Agricultural Engineers (ASEA), or any other equivalent approved standard. (EC180/87) *Overhead protection*

Welding	33.10 The employer shall ensure that welding on ROPS and FOPS is carried out by a welder certified under the <i>Boilers and Pressure Vessels Act</i> R.S.P.E.I. 1988, Cap. B-5. (EC180/87)
Approval of alternatives	33.11 (1) The Director may approve alternative proposals designed to provide protection equivalent to ROPS or FOPS when the requirement of ROPS or FOPS is not practical.
<i>Idem</i>	(2) The approval granted by the Director under subsection (1) shall be granted in writing for specific circumstances of a specific workplace and for a specific period of time. (EC180/87)
Equipment requirements	33.12 The employer shall ensure that powered mobile equipment <ul style="list-style-type: none"> (a) is used only for the purposes for which it is designed and equipped; (b) has a fully operative adequate braking system; (c) has a manually operated audible warning device; (d) has an adequate rear view mirror or other means of ensuring that the equipment can be safely backed up; (e) has an audible automatic back-up alarm; (f) has adequate headlights and backing lights when used after dark or in dimly lit areas; (g) has gears and moving parts adequately guarded; (h) has controls which cannot be operated from the outside of the cab unless the controls are designed to be operated from outside the cab; (i) has loads adequately secured. (EC180/87)
Operator competence	33.13 The employer shall ensure that powered mobile equipment is operated only by competent persons. (EC180/87)
Signals	33.14 The employer shall designate an employee to give signals to an operator who is operating equipment when his vision is obstructed and the operator shall use the equipment only on mutually agreed signals between the operator and designated employee. (EC180/87)
Dust	33.15 When work is carried out in areas where dust may create a hazard to employees, the employer shall take adequate measures to keep the dust at a minimum level. (EC180/87)
Responsibilities of operators	33.16 The operators of powered mobile equipment shall <ul style="list-style-type: none"> (a) ensure that passengers do not ride on any part of the equipment not designed to carry passengers; (b) not set equipment in motion until all air and hydraulic pressures are fully built up to the specified operating pressures; (c) when leaving equipment unattended, <ul style="list-style-type: none"> (i) park it on level ground,

- (ii) set the brake,
- (iii) lower the blades and bucket or safely block them,
- (iv) disengage the master clutch,
- (v) stop the engine, and
- (vi) remove the key;
- (d) follow a safe refuelling procedure;
- (e) not store containers of gasoline, diesel oil or other substances which may constitute a hazard in the cab;
- (f) not carry on or in the equipment, loose articles or equipment which might create a hazard. (EC180/87)

33.17 The operator of powered mobile equipment shall keep the equipment in gear when going downhill. (EC180/87) Use of gears

33.18 The employer shall ensure that powered mobile equipment Responsibilities of employers

- (a) is maintained in safe working condition;
- (b) has defective parts repaired or replaced before being set in motion;
- (c) has air and hydraulic lines, hoses and components maintained in safe operating condition;
- (d) has wire ropes, drums and sheaves inspected daily;
- (e) is lubricated only when the machine is at rest or as the manufacturer has expressly directed;
- (f) when tires are being installed on lock ring type rims, has an approved restraining device for the ring;
- (g) has safe and easy access to the operator's station by means of a ladder or steps and handrail. (EC180/87)

33.19 (1) The employer shall ensure that equipment which is raised from the ground by means of jacks or hoists is adequately blocked. Blocks

(2) Mats or heavy planking shall be used to distribute the load on soft ground. (EC180/87) Mats

33.20 The employer shall ensure that persons do not work under or go under the raised parts of any equipment unless the parts are adequately blocked and the employee shall not work under or go under such raised parts unless the parts are adequately blocked. (EC180/87) Idem

33.21 The employer shall ensure that when repair or maintenance work is carried out at the point of articulation on front end loaders or similar equipment, lock bars are used to prevent movement of either end of the loader. (EC180/87) Lock bars

33.22 The employer shall ensure that where any equipment is to be used on a slope or bank which could give way, that adequate precautions are Load distribution

taken to stabilize the bank and distribute the load of the equipment.
(EC180/87)

Truck seats **33.23** (1) The employer shall ensure that a truck used for transportation of employees has seats and is enclosed on all sides.

Alighting (2) No person shall get on or off trucks which are in motion or be permitted to get on or off trucks which are in motion. (EC180/87)

Loading **33.24** Employees shall not be permitted to remain in or on the cab of equipment while it is being loaded by a crane or power shovel.
(EC180/87)

PART 34 HOISTING APPARATUS

Hoisting apparatus **34.1** In this Part “hoisting apparatus” includes mobile cranes, tower cranes, electric overhead travelling cranes, winches, blocks and other similar apparatus but does not include elevators and dumbwaiters.
(EC180/87)

Construction **34.2** (1) The employer shall ensure that hoisting apparatus is constructed of sufficient strength and equipped with suitable ropes, chains, slings, hooks and other fittings so as to adequately ensure the safety of persons.

Standards (2) The employer shall ensure that hoisting apparatus is designed, installed, erected, checked, examined, inspected, operated and maintained in accordance with the appropriate CSA Standard listed below:

- | | | |
|-----|------------------|---|
| (a) | B167 | General Purpose Electrical Overhead Travelling Cranes |
| (b) | C22.2,
No. 33 | Electrical Cranes and Hoists |
| (c) | Z150 | Safety Code for Mobile Cranes |
| (d) | Z150S1 | Supplement No. 1 to Z150 |
| (e) | Z248 | Code for Tower Cranes |

- (3) The Minister may
- (a) establish classifications for operators of hoisting apparatus and define the scope of work and duties that may be performed by persons in each class;
 - (b) establish a Board of Examiners to examine candidates for the various classifications;

- (c) issue certificates of qualification to operators of hoisting apparatus who have passed an examination, who are holders of an equivalent certification from another jurisdiction, or who are otherwise judged by the Board of Examiners to be competent; and
- (d) determine fees that are to be paid for examinations and certificates of qualification. (EC180/87; 339/93)

34.3 (1) The employer shall obtain from the manufacturer, or if unobtainable from the manufacturer from an engineer, a statement of the safe load carrying capacity of hoisting apparatus. Carrying capacity

(2) The employer shall ensure that the safe load carrying capacity obtained under subsection (1) is posted legibly on hoisting apparatus where the operator is able to see it when he is in his operating position. Posting

(3) The employer shall ensure that the operator of hoisting apparatus has sufficient information to enable the operator to determine the load that the hoisting apparatus is capable of hoisting safely under any operating condition. Load

(4) When the boom, counterweight or another principal part of hoisting apparatus is modified, extended, altered or repaired so as to affect the load carrying capacity, the employer shall obtain a statement of revised safe load carrying capacity from an engineer. (EC180/87) Revisions

34.4 (1) The employer shall ensure that hoisting apparatus is not subjected to a load in excess of its safe load carrying capacity. Excess load

(2) The operator shall not subject hoisting apparatus to a load in excess of its safe load carrying capacity. (EC180/87) *Idem*

34.5 (1) The employer shall ensure that hoisting apparatus is maintained in good condition. Maintenance

(2) The employer shall designate a competent person to thoroughly inspect and test hoisting apparatus including safety devices Inspection

- (a) before it is first put into use;
- (b) once a month;
- (c) after any happening involving the hoisting apparatus which could have damaged some part of the apparatus.

(3) The employer shall ensure that a log book recording inspections and repairs is maintained and made available to an officer on request. (EC180/87) Record

34.6 (1) The employer shall ensure that the operator of hoisting apparatus follows the procedures prescribed in subsection (3). Responsibilities of employer

Barriers	(2) The employer shall ensure that when mobile cranes are working in an area where the swing clearance of an obstruction is less than 600 mm (2 ft.), adequate barriers are installed to prevent employees from entering the area.
Responsibilities of operator	(3) The operator of hoisting apparatus shall <ul style="list-style-type: none"> (a) visually inspect the hoisting apparatus before use to verify that it is in safe working order; (b) move a load only on a signal from a signaller designated under section 34.7 unless he has an unobstructed view of the load at all times during the operation; (c) raise a load vertically or, if necessary to raise a load obliquely, take precautions to avoid endangering employees; (d) avoid carrying a load over employees; (e) not leave a suspended load unattended.
Tag lines	(4) The employer shall ensure that a tag line or guide rope is used to control loads which may swing while being moved. (EC180/87)
Signals	34.7 (1) The employer shall ensure that the operator of a hoisting apparatus moves a load only on a signal from a signaller designated under this section.
Responsibilities of signaller	(2) The signaller designated under subsection (1) shall <ul style="list-style-type: none"> (a) be identifiable; (b) govern the movements of a load by a well understood distinctive code of signals or an effective communication system; (c) obtain the assistance of another competent signaller if part of the view of the load is obstructed from both the signaller and the operator; (d) ensure that all ropes, chains, slings or other attachments are properly applied to the load and secured to the hooks of the hoisting apparatus and that the area is clear before signalling to move the load. (EC180/87)
Riding on load	34.8 (1) No person shall ride on loads being moved by hoisting apparatus.
Suspended loads	(2) No person shall stand or move under any suspended load.
Riding on apparatus	(3) The employer shall not permit employees to ride on the block, hook or weight suspended from a hoisting apparatus.
<i>Idem</i>	(4) Employees shall not ride on a block, hook or weight suspended from a hoisting apparatus. (EC180/87)
Mobile cranes	34.9 The employer shall ensure that a mobile crane

- (a) has a cab, screen, canopy guard or other adequate protection for the operator where he may be exposed to the hazard of falling material;
 - (b) is equipped with brakes capable of effectively braking a weight of not less than 1 times the maximum safe working load;
 - (c) has safety devices and limit switches installed and used as specified by the manufacturer;
 - (d) has, on apparatus equipped with a boom, a boom angle indicator.
- (EC180/87)

34.10 The employer shall ensure that

Stabilizers

- (a) rubber tired mobile cranes are equipped with stabilizers;
 - (b) when equipment with stabilizers is in use, the stabilizers are fully extended on pads of sufficient size to prevent movement.
- (EC180/87)

34.11 When a crane is moving from one location to another under its own power, the employer shall

Change of location

- (a) ensure that precautions are taken to prevent the boom from swinging; and
 - (b) designate a signaller to guide the movement of the crane.
- (EC180/87)

34.12 The employer shall ensure that building materials shall not be used as counterweights for any hoisting apparatus. (EC180/87)

Use of building materials

PART 35
HOISTS

35.1 In this Part “workers’ hoist” means a hoist for raising or lowering employees or materials in a stationary hoistway. (EC180/87)

Workers’ hoist

35.2 The employer shall ensure that employees and materials shall not be transported on the same hoist at the same time. (EC180/87)

Prohibition

35.3 The Canadian Standards Association Z-185 Safety Code for Workers’ Hoists and subsequent amendments is adopted and constituted as the regulations that shall be referred to by the Director and the officers in carrying out their duties under these regulations. (EC180/87)

Standards

35.4 In this Part “material hoist” means a hoist for raising or lowering materials only, with a load carrying unit within fixed guides and includes a concrete hopper that is guided by its own hoisting ropes. (EC180/87)

Material hoist

35.5 The Canadian Standards Association Z-256 Safety Code for Material Hoists and subsequent amendments is adopted and constituted

Standards

as the regulations that shall be referred to by the Director and officers in carrying out their duties under these regulations. (EC180/87)

PART 36 ELECTRICITY

Competent	<p>36.1 (1) In this Part “competent” in relation to a person means,</p> <p>(a) when applied to electrical installations, as defined under the <i>Electrical Inspection Act</i> R.S.P.E.I. 1988, Cap. E-3 and regulations, a person who is the holder of a subsisting license as issued under the <i>Electrical Inspection Act</i>;</p> <p>(b) when applied to electrical utility linework, a person who is the holder of a subsisting Certificate of Qualification or a Certificate of Proficiency as issued by the Department for the construction or utility lineman trades;</p> <p>(c) when applied to communications and any other types of work covered by this Part, a person who demonstrates to the Division that he is qualified by knowledge, training and experience to perform an assigned task safely.</p>
De-energized	<p>(2) “de-energized” in the electrical sense means isolated and grounded. (EC180/87)</p>
Employee qualifications	<p>36.2 The employer shall ensure that an employee shall not work on any energized electrical conductor or equipment unless he is</p> <p>(a) competent; or</p> <p>(b) an indentured apprentice under the direct supervision of a competent person. (EC180/87)</p>
Communication employees	<p>36.3 The employer shall ensure that when communication employees are required to work on energized electrical utility conductors or equipment, such employees shall be competent as specified in section 36.1. (EC180/87)</p>
Application of Electrical Inspection Act	<p>36.4 (1) The employer shall ensure that the installation, use and maintenance of any electrical wiring or equipment including temporary wiring, complies with the <i>Electrical Inspection Act</i> and the regulations made thereunder.</p>
Standards	<p>(2) The employer shall ensure that all newly installed electrical utility and communication lines and equipment are installed in conformance with the CSA Standard CAN3-C22.3 No.1 for “Overhead Systems and Underground Systems” CAN3-C22.3 No.7, as amended. (EC180/87)</p>
Protective devices	<p>36.5 (1) The employer shall ensure that employees do not work on energized electrical conductors or equipment unless adequate protective devices specified for protection against the voltage involved are used.</p>

(2) When working on energized electrical conductors or equipment operating at a potential greater than 120 v nominal up to and including 5,000 v phase to phase, the employer shall provide and the employee shall use rubber gloves having a minimum rating of 10,000 v, shields and other necessary safety equipment. Protective gloves

(3) When working on energized electrical conductors or equipment in excess of 5,000 v, and not exceeding 15,000 v phase to phase, the employer shall provide and the employee shall wear rubber gloves having a minimum rating of 20,000 v or use adequate hot line tools. Idem

(4) Rubber gloves shall be tested at least twice a year and replaced as required. Testing

(5) Rubber gloves shall be worn at all times while working on energized circuits in accordance with section 36.6 or while within the primary zone on any poles or structure carrying over 120 v phase to ground to 25000 phase to phase circuits. When gloves to be worn

(6) In subsection (5), "primary zone" means the distance measured from a high voltage (120 v phase to ground and 25000 phase to phase) source to a suitable distance of clearance measured down or away from the pole or structure to the top of the employee's head, which in all cases shall be 1 200 mm (4 ft.) measured to the nearest live point and all insulator porcelain is to be considered energized. (EC180/87) Primary zone

36.6 (1) The employer shall ensure that no employee shall work on any energized electrical conductor or equipment operating at more than 3,000 v, unless procedures satisfactory to the Director are used, and the employees are provided with and trained in the use of special tools which are approved for use by an authority acceptable to the Director. Work on energized equipment

(2) No work shall be done on an energized electrical line or equipment which is at a voltage more than 600 v unless two or more employees are present while the work is being performed. Employees present

(3) Subsection (2) does not apply to the fusing of transformers where the transformer fuses are accessible without passing or reaching past electrical wires or appliances carrying more than 240 v; nor to work done with special tools that are designed for the purpose, and which are used by employees who have been trained in the use of those tools. Application of subsection (2)

(4) In tunnels and manholes, no work shall be done, or permitted to be done, on an energized electrical line or equipment having a voltage of more than 240 unless there are at least two competent employees present. Tunnels

Guards	(5) No work shall be done in or around any place or structure in proximity to energized electrical wires or equipment which are normally isolated by position or elevation, unless such electrical lines or equipment are provided with guards which will effectively prevent contact by any employee or by any equipment being used or handled.
<i>Idem</i>	(6) Guards shall meet the specifications of an authority acceptable to the Director.
Notices	(7) Notices reading "Danger - High Voltage" shall be placed in prominent positions in proximity to electrical equipment operating at over 600 v that may be accessible to employees. (EC180/87)
De-energizing procedures	36.7 The employer shall ensure that before an employee is permitted to work on electrical conductors or equipment that must be de-energized, the employee in charge of the work shall open, lock and tag any switching device which supplies electrical energy to the conductors or equipment being handled. (EC180/87)
<i>Idem</i>	36.8 The employer shall ensure that before an employee is permitted to work on electrical utility lines or equipment that must be de-energized, the employee in charge of the work shall ensure that such are properly de-energized. (EC180/87)
Re-energizing procedures	36.9 After work has been completed on de-energized electrical conductors, utility lines or equipment, the employee in charge of the work shall <ul style="list-style-type: none"> (a) determine that all employees are clear of work areas; and (b) authorize the energizing of the electrical conductors, utility lines or equipment. (EC180/87)
Protective guards and equipment	36.10 The employer shall ensure that employees shall not work in or around any place or structure in proximity to energized electrical conductors or equipment unless <ul style="list-style-type: none"> (a) adequate protective guards are provided; or (b) the employees are wearing adequate protective equipment. (EC180/87)
Communication requirements	36.11 The employer shall ensure that an employee shall not work on any energized electrical conductor or equipment having a potential in excess of 600 v in a manhole or tunnel unless he has continual communications with another competent employee. (EC180/87)
Manhole requirements	36.12 The employer shall ensure that manholes containing energized electrical conductors or equipment shall be provided with approved insulated mats or platforms to protect employees while at work, except

those manholes containing only telephone, telegraph, signal wires or cables. (EC180/87)

36.13 The employer shall ensure that tunnels or manholes containing energized conductors or equipment shall be kept free from water, sewage or other drainage when it is necessary for employees to enter. (EC180/87)

Water hazards

36.14 The employer shall ensure that means of access to all electrical switching devices shall be kept clear of obstructions. (EC180/87)

Access to switching device

36.15 When employees work on poles or structures where other persons may pass below, an adequate barricade shall be installed. (EC180/87)

Overhead protection

36.16 The employer shall ensure that when setting or removing poles, light standards or any similar object between energized electrical conductors exceeding 600 v, the conductors shall

- (a) be covered with adequate protective devices; or
- (b) be protected by an approved guard installed on the pole before being lifted. (EC180/87)

Poles between conductors

36.17 The employer shall ensure that employees required to perform such work as described in section 36.16 shall, and employees required to perform the work as described in section 36.16 shall

- (a) wear adequate rubber gloves;
- (b) use cant hooks or other approved controlling devices; and
- (c) not get on or off the lifting machine until the pole is in a secured position. (EC180/87)

Protective measures

36.18 The employer shall ensure that lifting machines or devices used for setting or removing poles, light standards or any similar objects between or within 3 100 mm (10 ft.) of energized electrical conductors shall

- (a) be grounded; and
- (b) if applicable, have their outriggers extended. (EC180/87)

Lifting machines

36.19 The employer shall ensure when the type of work outlined in section 36.18 is being carried out, a minimum of two competent employees shall be present at all times during the operation. (EC180/87)

Idem

36.20 The employer shall ensure that, subject to sections 36.16 and 36.22, and except for electrical utilities, an employee shall not carry out any work which is liable to bring any person or apparatus, machine, machine component, material or property within a distance of energized electrical conductors closer than as specified in the following table:

Distances from energized conductors

Nominal Phase to Phase
Voltage of Live Power Line

Minimum Distance

Up to 750 volts	900 mm (3 ft.)
751 - 100,000 volts	3 600 mm (12 ft.)
100,001 - 250,000 volts	5 200 mm (17 ft.)
250,001 - 345,000 volts	6 100 mm (20 ft.)

(EC180/87)

Instructions from
utility

36.21 An employee shall not commence the work outlined in section 36.20 where the voltage is in excess of 345,000 v until the employer has received instructions on proper procedures from the electrical utility owning or operating the conductors. (EC180/87)

Safety precautions

36.22 Before an employer commences work which is liable to bring any person, apparatus, machine, component, material or property closer to overhead electrical conductors than the distance stipulated in section 36.20 he shall, before proceeding, contact the electrical utility owning or operating the conductors and shall ensure that

- (a) the conductors are properly de-energized; or
- (b) the energized electrical conductors or equipment are adequately insulated or guarded. (EC180/87)

Idem

36.23 The employer shall ensure that when structural repairs, extensions, paint work or any other similar type of work is to be undertaken near energized electrical conductors or equipment, the employer in charge of the work shall ensure that

- (a) the conductors are properly de-energized; or
- (b) the energized electrical conductors or equipment are adequately insulated or guarded. (EC180/87)

Metal ladders

36.24 The employer shall ensure that metal ladders and ladders having reinforcing wire or other conducting material shall not be used near energized electrical conductors or equipment. (EC180/87)

Hand tools

36.25 Hand tools, such as pliers, screw drivers, fuse pullers, etc., for use in connection with electrical work, shall be adequately insulated and be of an approved type. (EC180/87)

Temporary wiring

36.26 The employer shall ensure that all temporary wiring shall be carried out in accordance with the *Electrical Inspection Act* and the regulations made thereunder. (EC180/87)

Portable electrical
conductors

36.27 The employer shall ensure that where portable electric conductors are used, a sufficient number of fixed outlets shall be installed at points where they are safely accessible. (EC180/87)

Rubber covered
cord

36.28 The employer shall ensure that rubber covered cord shall be used for portable electrical tools, extension lamps, etc., which may be

subjected to hard usage. Single strand wire shall not be used for temporary wiring. (EC180/87)

36.29 The employer shall ensure that armouring and sheathing of electric cables, metal conduits and their fittings, metallic safeguards and other non-current carrying metal parts of electrical equipment shall be effectively grounded. (EC180/87)

Grounding of
equipment

36.30 The employer shall ensure that grounding conductors shall be of low resistance and of sufficient capacity to safely carry the heaviest flow of current which may result from a breakdown of the insulation of the equipment to be protected. (EC180/87)

Grounding
conductors

36.31 The employer shall ensure that grounding conductors shall be mechanically protected at places where they are likely to be damaged. (EC180/87)

Idem

36.32 The employer shall ensure where it is impossible or impracticable to enclose electrical circuits or current-carrying parts of electrical equipment operating at 50 v AC or more to ground, accidental contact by persons or objects shall be prevented by installing the circuits or equipment in rooms or enclosures which are accessible to authorized persons only or on balconies, galleries or platforms so elevated and arranged as to exclude unauthorized persons. (EC180/87)

Prevention of
accidental contact

36.33 (1) Before employees start to climb or support themselves on any pole or structure, or before any work is done which will affect the stability of the pole or structure

Pole safety and
stability

- (a) the pole or structure shall be tested for soundness;
- (b) when any doubt as to soundness exists, the pole or structure shall be effectively guyed or otherwise supported before any wires or cable are changed.

(2) Guys or supports shall be left in place until employees are clear of the pole.

Guys

(3) Pike-poles alone shall not be considered adequate support. (EC180/87)

Pike-poles

36.34 Mail boxes, signs, clotheslines or other hazards shall not be allowed on or in close proximity to poles upon which employees are required to work. (EC180/87)

Obstructions

36.35 The employer shall ensure that means of access to switches and meters shall be clear of obstructions at all times. (EC180/87)

Access to switches

Marking	36.36 The employer shall ensure that all electrical distribution switches and controls shall be clearly marked to indicate the machinery or equipment which they serve. (EC180/87)
Denergizing responsibility	36.37 The employer shall ensure that before employees are required or permitted to work on any part of an electrical power system which, for reasons of safety, must be handled in a de-energized condition, the employee in charge shall ensure that the part of the system being worked on is de-energized and grounded, and that the controls are tagged and locked to prevent the system from being re-energized. (EC180/87)
Procedure	36.38 When the control devices are not under the direct control of the employees, they shall receive assurance from the employee in charge of the control device that the work may safely proceed and the assurance shall be recorded by the employee giving the assurance. (EC180/87)
<i>Idem</i>	36.39 Before commencing the work on the de-energized part of the system, the employee shall, by short-circuiting and grounding or other effective means, ensure that the part or section is de-energized and that all employees are protected against re-energization. (EC180/87)
Live electrical conductor	36.40 (1) The employer shall take every practicable step to prevent danger to persons on the work site from any live electrical conductor or apparatus that might be a source of danger.
Tool grounding	(2) No person shall use any electric tool unless it is effectively grounded or is of the double insulated type. (EC180/87)
Service switch and electrical panel	36.41 The employer shall ensure that a main service switch and secondary electrical panel shall be <ul style="list-style-type: none"> (a) securely mounted on substantial supports; (b) kept clear of any obstruction for 1 000 mm (3.2 ft.) to the front; and (c) within easy reach of and readily accessible to authorized persons. (EC180/87)
Service switch lock	36.42 The employer shall ensure that a service switch shall have a suitable device for locking it in the open position. (EC180/87)
Lighting	36.43 The employer shall ensure that all areas in which employees are employed and the means of access thereto shall be adequately lighted. (EC180/87)
Crane operation near power line	36.44 The employer shall ensure that no person shall operate a crane or similar lifting device closer than the length of the boom of the crane to a power line for electricity unless he has a competent signal man stationed within his view to warn him of danger from the power line. (EC180/87)

PART 37
WELDING

37.1 Where welding or cutting or soldering operations emit harmful fumes and gases, the employer shall ensure that ventilation is provided which will remove the fumes at the source required to maintain the airborne contaminants at or below the permissible levels as outlined in Part 11 of these regulations. (EC180/87)

Ventilation

37.2 The employer shall ensure that a welding and cutting operation is prohibited in an area containing combustible materials, or in the close proximity of explosive or flammable dusts, gases or vapours, unless adequate precautions are taken to prevent fires or explosions. (EC180/87)

Explosion
precautions

37.3 The employer shall provide tables, jigs or work benches made of nonflammable material when needed for support during welding and cutting operations. (EC180/87)

Tables

37.4 Overhead welding and cutting operations shall be carried out in such a manner as to prevent slag and sparks from falling on persons or combustible materials located below a work area. (EC180/87)

Slag and sparks

37.5 Fire retardant blankets shall be placed over open gratings to contain slag and sparks produced by welding and cutting operations. (EC180/87)

Blankets

37.6 In places where welding and cutting operations are normally carried out and where persons other than the welders are working or passing, suitable stationary or portable screens at least 1 800 mm (6 ft.) high shall be used. (EC180/87)

Screens

37.7 Walls and screens of both permanent and temporary enclosures for welding and cutting operations shall be painted with black or dark grey flat paint to absorb the harmful bright rays and prevent reflection. (EC180/87)

Walls and screens

37.8 The employer shall ensure that adequate fire extinguishing equipment in good working order is readily available where any welding, soldering or flame-cutting or heating operations or any other process which uses heat application are performed. (EC180/87)

Fire extinguishing
equipment

37.9 The employer shall ensure that all employees engaged in welding or cutting operations wear, and all employees shall wear

Safety clothing

- (a) adequate fire retardant work clothing;
- (b) fire retardant gauntlet type gloves and arm protection;
- (c) an apron of fire retardant or other adequate material;

- (d) adequate eye and face protection against harmful radiation, or particles of molten metal, or while chipping and grinding welds; and
- (e) safety boots which meet the requirements of section 45.15. (EC180/87)

Respirators	37.10 Approved respirator equipment shall be worn if tests of air samples indicate it is necessary. (EC180/87)
Inspection of torches	37.11 (1) The employer and employee shall ensure that welding and cutting torches, their fittings and regulators are inspected before use.
Repairs	(2) Where inspection reveals faults in the equipment mentioned in subsection (1), the employer shall ensure that the equipment is repaired or replaced with approved fittings in accordance with the manufacturer's specifications by a competent person.
Leaks	(3) The employer and employee shall ensure that the supply of gas is cut off to any part of the welding or cutting operation when a leak develops and that work is not resumed until the leak is repaired. (EC180/87)
Enclosed containers	37.12 (1) The employer and employee shall ensure that a welding or cutting operation is not undertaken on a totally enclosed container.
Dangerous containers	(2) The employer and employee shall ensure that a welding or cutting operation is not done on a container or pipe that has contained an explosive or flammable substance or gas. (EC180/87)
Certification	37.13 Where a container or pipe held an explosive or flammable substance or gas or if the previous contents are unknown, the employer shall ensure that welding, soldering or cutting operations or any other process which uses heat application are only undertaken when the employer is able to certify in writing that the container or pipe is free from combustible gases or vapours. (EC180/87)
Cleansing	37.14 When the employer is unable so to certify in writing to the officer, welding or cutting operations on any container or pipe that has held explosive or flammable substances shall only be undertaken after the container has been thoroughly cleansed by steam or other effective means; found, by air tests, to be completely free from combustible gases or vapours; or the air in the container has been replaced by inert gas. (EC180/87)
Procedure	37.15 In order to drain, clean and ventilate the container or pipe, the employer shall ensure that <ul style="list-style-type: none"> (a) inlet pipes are disconnected and blocked off or moved out of alignment, or the inlet valves are locked in the closed position;

- (b) where residual liquid remains, it is removed by employees located outside the container or pipe;
- (c) where steam is available all openings, except the vent pipe and steam inlet, are closed and the steam is blown into the tank for a period of time suitable for the conditions and the nature of the liquid, with the lids and manhole plates open during the last one-fifth time of the steaming period;
- (d) where steam is not available, the container or pipe is kept filled with running water for a period of at least 24 hours;
- (e) after cleaning, the container or pipe is thoroughly ventilated with forced or induced draft air, for a minimum period of two hours;
- (f) the air in the container or pipe is replaced by a non-flammable gas other than exhaust from an internal combustion engine;
- (g) after ventilation, a competent person shall examine the interior of the container or pipe to see that it is free from residue and take air samples to ascertain that hazardous vapours have been removed;
- (h) where the foregoing tests indicate the presence of hazardous vapours, the steaming or flooding and ventilating operations are repeated. (EC180/87)

37.16 (1) The employee shall ensure that a welding or cutting torch is not laid down until the gases have been completely shut off. Handling torches

(2) The employee shall ensure that a welding or cutting torch is not hung from a regulator or other equipment so as to come in contact with a gas cylinder. (EC180/87) *Idem*

37.17 The employer shall ensure that cylinders for compressed, liquefied and dissolved gases, their fittings and attachments are used in accordance with the *Fire Prevention Act*. (EC180/87) Handling cylinders

37.18 The employer shall ensure that cylinders containing flammable compressed gas are not stored in areas where welding or cutting operations are carried out, or in areas containing oxygen cylinders, unless they are separated by a fire resistant partition having a fire-resistance rating of at least two hours. (EC180/87) Storage

37.19 (1) The employer shall ensure that compressed gas cylinders (a) are kept in an upright position and secured against falling during storage, transportation and use; Compressed gas cylinders
(b) are not dropped or subjected to impact.

(2) Trucks used for transporting acetylene and oxygen cylinders shall have specially designed restraints for that purpose. Trucks

(3) Protective caps on acetylene and oxygen cylinder valves shall be screwed on firmly when the cylinders are being moved or not in use. Caps

Storage	(4) Where portable acetylene and oxygen supply equipment is used, the cylinders shall be kept at a safe distance from all operations which produce flames, sparks or molten metal or result in excessive heating of the cylinder.
Hoses	(5) Hose lines for conveying acetylene or oxygen from supply piping or cylinders to burners shall be different threads and shall be plainly marked to avoid interchanging the hose. (EC180/87)
Heating cylinders, prohibited	37.20 The person emptying cylinders charged with liquefied gas shall not hasten the process by directly heating the cylinders. (EC180/87)
Empty cylinders	37.21 (1) The employer shall ensure that empty compressed gas cylinders <ul style="list-style-type: none"> (a) are stored in an area designed for such use; and (b) are removed from any building or structure being constructed, or renovated or demolished.
Storage	(2) The employer shall ensure that cylinders containing flammable gas are not stored in a building or structure that is being constructed, or renovated or demolished. (EC180/87)
Securing in upright position	37.22 Acetylene and oxygen cylinders when in an upright position shall be held by straps, collars or chains to prevent them from falling over, and such cylinders shall not be dropped or subjected to heavy blows. (EC180/87)
Removal	37.23 Devices for holding cylinders shall be such that cylinders can be rapidly removed in case of fire. (EC180/87)
Reverse flow check valves	37.24 All welding and cutting burners shall be equipped with reverse flow check valves installed as close as possible to the regulators. (EC180/87)

PART 38 WOOD WORKING

Standards	38.1 The latest edition of the Canadian Standards Association Z114 Safety Code for the Wood Working Industry and any additions or amendments thereto is adopted and constituted as the regulations to be used as a guide for the safe operation and maintenance of wood working machinery, including cooperage operations and the making of veneer. The code deals primarily with “point of operation” hazards on wood working machinery and shall not apply to sawmill and forest operations. (EC180/87)
-----------	--

PART 39
WORKING OVER WATER

39.1 Where there is water at a worksite into which an employee might fall with risk of drowning, the employer shall provide the rescue equipment prescribed by section 39.2 ready for use. (EC180/87) Rescue equipment

39.2 The rescue equipment shall consist of a combination of one or more of the following measures as approved by the officer Idem

- (a) a boat in operating condition and equipped with
 - (i) a ring buoy attached to 30 000 mm (98.5 ft.) of 10 mm (0.4 in.), which shall not be manilla rope, and
 - (ii) a boat hook;
- (b) a line across the water to which there is attached
 - (i) floating planks at close intervals, or
 - (ii) other floating objects capable of providing support for a person in water;
- (c) an approved life vest for each employee exposed to the hazard of falling into the water. (EC180/87)

39.3 The employer shall designate one or more persons who shall be readily available to perform any necessary rescue operation when an alarm signal is given. (EC180/87) Rescue operation

39.4 (1) An approved safety belt or life net shall be provided for the use of an employee employed on a bridge more than 15 000 mm (50 ft.) above water or land where Safety belts

- (a) there is danger of the employee falling from the structure; and
- (b) no scaffold or similar device is provided to prevent his falling from his working position.

(2) Subsection (1) does not apply where the work of placing structural members prevents the use of such protective measures. (EC180/87) Exception

39.5 Where employees must work on structures over ravines, fast moving water, shallow water, thin ice or other such hazardous locations, the officer may require the employer to provide a safety net below the structure or the employees to wear an approved flotation device in accordance with Part 45 of these regulations. (EC180/87) Safety nets

PART 40
TANKS AND VESSELS

40.1 When employees are employed around open tanks containing harmful substances the employer shall ensure that the sides of such tanks shall extend at least 900 mm (3 ft.) above the working platform or a standard handrail shall be provided. (EC180/87) Open tank safety

Prohibitions	40.2 The employer shall ensure that no burning, welding or other hot work shall be done on any vessel that has contained a highly combustible substance until such vessel has been thoroughly cleaned and suitable tests made to indicate that the vessel is in a condition that the work may be safely performed. (EC180/87)
Toxic fumes, precautions	40.3 No employee shall enter any tank, vessel or chamber that may contain toxic fumes or gases until it has been ascertained that the air contained therein is sufficiently pure. In doubtful cases, approved air-supply respirators and lifelines shall be stationed at the entrance to assist those who may become distressed. (EC180/87)
Electrical illumination and flashlights	40.4 The employer shall ensure that <ul style="list-style-type: none"> (a) no employee shall use electric illumination inside any tank or vessel unless such illumination is protected by an explosive proof guard; (b) employees working in locations where flammable liquids or vapours are present shall use explosion proof flashlights. (EC180/87)
Tank supports	40.5 (1) The supports of all elevated tanks shall be accessible for the purpose of inspection.
Tank covers	(2) Every tank over 1 200 mm (4 ft.) deep containing liquids shall have a fixed permanent cover, and with manholes close to the bottom and need have outside ladders only. (EC180/87)
Walkways	40.6 Walkways over open tanks containing harmful substances or over tanks 1 400 mm (4.6 ft.) in depth shall be at least 1 510 mm (5 ft.) wide and equipped with standard handrails. (EC180/87)
Closed containers	40.7 Closed containers of a type acceptable to the officer shall be used for gasoline, coal-oil, acids and similar fluids and shall be plainly marked to indicate the character of the contents. (EC180/87)
Cleaning barrels, etc.	40.8 Barrels and similar vessels that have contained oil, gasoline or other petroleum products shall be thoroughly flushed out, first with steam and then with water, immediately prior to making any repairs or alterations requiring heat or flame. (EC180/87)
Internal cleaning procedure	40.9 When repairs are to be carried out inside tanks or vessels, the employer shall ensure that all connecting piping shall be securely blocked by either closing the valves and locking them in the closed position or disconnecting the pipe lines and blanking them off by means of blind flanges. (EC180/87)

40.10 When repairs are to be carried out in a tank or vessel in which stirring or mixing apparatus or machinery is installed, the employer shall ensure that before employees are permitted to enter the tank or vessel the stirring or mixing apparatus shall be reliably disconnected from its source of power and locked or blocked so that no movement can occur that would endanger the employees. (EC180/87)

Mixing apparatus
shut off

40.11 The employer shall ensure that tanks used for the storage of hazardous liquids shall be prepared for repairs as follows:

Cleaning procedure,
tanks used for
hazardous liquids

- (a) the tank shall be drained as completely as possible;
- (b) all inlet pipes shall be disconnected and blanked off or moved out of alignment, or the inlet valves shall be locked in the closed position;
- (c) residual liquid and sludge shall be removed by employees stationed outside the tank and operating through manholes or hatches with water from a hose line equipped with a curved nozzle for washing all parts of the tank thoroughly and if necessary with long handled spears;
- (d) where steam is available all openings except the vent pipe and a steam inlet shall be closed and live steam blown into the tank for a period of time suitable for the conditions and the nature of the liquid, with the lids or manhole plates opened during the last one-fifth of steaming period;
- (e) where steam is not available the tank shall be kept filled with flowing water for a period of at least 24 hours;
- (f) after steaming or flooding, the tank shall be thoroughly ventilated by means of air under forced or induced draft for a period of at least two hours;
- (g) after ventilation, a competent person or persons shall examine the interior of the tank to see that it is free from residue and shall take and test air samples from the tank to ascertain that all hazardous vapours have been removed;
- (h) where these tests indicate the presence of hazardous vapours or fumes, the steaming or flooding and ventilating operations shall be repeated. (EC180/87)

PART 41 FOREST OPERATIONS

41.1 In this Part

Definitions

- (a) “Act” means the Occupational Health and Safety Act;
- (b) “bucking” means a logging operation which consists of cutting trees and logs into shorter length;

- (c) “chain saw” means a saw powered by a gasoline or electric motor or by other means and which has its cutting elements on an endless chain;
- (d) “chicot” means any dead or partially dead tree that remains standing;
- (e) “darkness” means the period of time beginning one-half hour after sunset and ending one-half hour before sunrise;
- (f) “felling” means a logging operation which consists of cutting a tree from its stump;
- (g) “forwarding” means a logging operation which consists of transporting logs from a felling area to a landing site with the logs completely raised from the ground;
- (h) “haul road” means a road used in the transportation of any forest products, excluding those roads under the jurisdiction of the *Highway Traffic Act* R.S.P.E.I. 1988, Cap. H-5;
- (i) “life jacket” means a buoyancy device approved by Transport Canada;
- (j) “log” includes a trunk of a felled tree, piece of pulpwood, pit prop, pole, post, tie or any similar forest product;
- (k) “lodged tree” means a tree that has not fallen to the ground after being
 - (i) partly or wholly separated from its stump, or
 - (ii) displaced from its natural position;
- (l) “logging area” means a worksite used for a logging operation;
- (m) “logging” or “logging operation” means the act of cutting or harvesting trees including the transportation of logs and site preparation for tree planting and seeding;
- (n) “mobile equipment” means self-propelled equipment used in a logging operation, including, but not limited to, an industrial tractor, skidder, dozer, loader, motor grader or prime mover;
- (o) “obstruction” means any materials or object that may interfere with the safe movement of a log;
- (p) “safety eyewear” means approved eye protection meeting the requirements of CSA Standard Z94.3 titled “Eye Protectors”;
- (q) “safety footwear” means approved safety footwear meeting the requirements of CSA Standard Z195 titled “Safety Footwear”;

(r) “safety hat” means approved safety headwear meeting the requirements of CSA Standard Z94.1 titled “Industrial Protective Headwear”;

(s) “skidding” means a logging operation which consists of transporting logs from the felling area to a landing site whereby at least one end of the log remains on the ground;

(t) “stakes” means metal or wood posts used to support logs and prevent the lateral movement of the logs;

(u) “vehicle” means a device in, upon or by which a person or thing is, or may be, transported or drawn upon a highway including a truck, semi-trailer and mobile equipment. (EC180/87)

41.2 The employer shall ensure, prior to the commencement of work that

Instruction in
operational safety

(a) each employee is instructed in proper and safe procedures and is made aware of the potential hazards of all job functions the employee is to perform;

(b) an employee receives

(i) a copy of these regulations,

(ii) a copy of any Code of Practice related to this Part that is approved by the Director in accordance with the Act, and

(iii) upon request, a copy of the Act;

(c) each employee is instructed in the proper use, care and limitations of protective clothing and equipment; and

(d) each employee is instructed as to the location of first aid supplies and procedures for obtaining medical attention. (EC180/87)

41.3 No person, unless authorized by the employer or acting as a representative of the employees or an authorized agent of the federal, provincial or municipal government, shall enter or remain in a logging area at any time work is being performed. (EC180/87)

Entry to logging
area

41.4 The employer shall

General obligations
of employer

(a) provide an adequate system of communication, such as mobile radio, telephone or transportation systems at all logging areas to ensure the immediate summoning of medical assistance where required;

(b) provide an adequate means of checking the well-being of any employee whose duties may not allow him to secure assistance in case of injury or other emergency;

(c) provide a minimum of 20 lux (2 ft. candles) of illumination where any logging operation is performed during darkness;

(d) maintain logging trails clear of obstructions, and keep icy pathways within a logging camp sanded or salted;

- (e) ensure that an employee performing felling or bucking procedures is within sight or voice communication distance of at least one other employee;
- (f) provide wire cable used for hauling logs which shall conform to the requirements set out in the CSA Standards for wire cable;
- (g) inspect, at regular intervals, wire ropes, slings and fittings used in a logging operation and replace or repair these when found to be defective;
- (h) provide current "Material Safety Data Sheets" to employees employed in chemical application;
- (i) provide an approved respirator to all employees mentioned in clause (h). (EC180/87)

Prohibited activities	<p>41.5 No employee shall</p> <ul style="list-style-type: none"> (a) climb upon or work under a lodged tree or suspended log; (b) place or leave any equipment or device in a manner that might endanger his safety or that of any other person; (c) use gasoline or other flammable liquids to kindle fires; (d) smoke within 9 m (30 ft.) of gasoline or other flammable material storage area. (EC180/87)
Protective equipment	<p>41.6 An employee shall</p> <ul style="list-style-type: none"> (a) at all times while on a logging worksite, wear an approved safety hat and approved safety footwear; (b) if likely to be exposed to eye injury due to flying particles or other harmful substance, wear safety screens or safety eyewear; and (c) wear other protective clothing, such as safety pants and safety gloves or mitts, and approved hearing protection appropriate to the type of work to be performed. (EC180/87)
Mandatory use of protective equipment	<p>41.7 An employer shall require an employee to wear or use protective clothing and equipment to provide protection from any hazard to which the employee is likely to be exposed. (EC180/87)</p>
Chain saw operation	<p>41.8 When operating a chain saw, the employer shall ensure that the employee wears and the employee shall wear approved hearing protection, safety eyewear, safety pants, a hard hat and safety boots. (EC180/87)</p>
<i>Idem</i>	<p>41.9 (1) The employer shall ensure that no employee operates a chain saw unless it is in safe working order.</p>
<i>Idem</i>	<p>(2) No employee shall operate a chain saw unless it is approved and is equipped with a safety chain, chain brake, anti-vibration mounts, throttle-control lock out, chain catcher and rear hand guard. (EC180/87)</p>

- 41.10** Where a chain saw is to be refuelled or maintenance work is to be performed on a chain saw, an employee shall stop the chain saw motor prior to refuelling it or performing maintenance work on it. (EC180/87) Maintenance
- 41.11** The employer shall ensure that an employee shall store and distribute fuel for a chain saw from an approved safety container. (EC180/87) Fuel storage
- 41.12** No employee shall start a chain saw unless it is at least 3 m (10 ft.) from the fuel container required under section 41.11. (EC180/87) Starting saw
- 41.13** When operating a chain saw during the fire season, an employee shall have a fire extinguisher readily available and in proper working condition. (EC180/87) Fire extinguisher
- 41.14** Each chain saw operator shall carry an approved pressure dressing and bandage when operating a chain saw. (EC180/87) Pressure dressing
- 41.15** An employee shall maintain a chain saw in a manner so that the chain will not move when the chain saw motor is idling. (EC180/87) Chain saw maintenance
- 41.16** An employee shall stop a chain saw motor where the chain saw is to be carried a distance longer than usual between trees to be felled. (EC180/87) Stopping saw when carrying
- 41.17** When operating a chain saw, an employee shall hold the chain saw firmly in both hands. (EC180/87) Holding saw
- 41.18** No employee shall start a chain saw while it is resting against any part of his body. (EC180/87) Starting saw
- 41.19** The owner of hand tools, including files, shall equip the tools with proper handles and maintain the tools in good condition. (EC180/87) Tools
- 41.20** No employee shall use hand tools with loose, broken or defective handles. (EC180/87) *Idem*
- 41.21** An employee shall wear safety gloves or mitts while sharpening a chain saw. (EC180/87) Safety gloves
- 41.22** No employee shall enter a logging area where another employee is felling trees, unless the other employee has told the former that it is safe to do so. (EC180/87) Area safety
- 41.23** Subject to section 41.22, an employee felling a tree shall maintain a distance of not less than twice the height of the tree being felled between himself and the nearest employee. (EC180/87) *Idem*

Exception	41.24 Where two employees are required to fell a tree, the second may, under the supervision of the employee felling the tree, work within the distance described in section 41.23. (EC180/87)
Felling procedure	41.25 An employee shall <ul style="list-style-type: none"> (a) before felling or bucking a tree, cut and clean away any obstructions and ensure that the travel of the saw is clear; (b) before felling a tree ensure that, where practicable, any chicots in the vicinity of the tree have been felled or pushed safely to the ground; (c) before felling a tree, ensure that he is able to stand clear of the tree during its fall; and (d) ensure there is an unobstructed escape route; (e) ensure that any tree cut or partially cut, standing on the stump, or hung up in adjacent trees is pushed or lowered safely to the ground, before the next tree is felled. (EC180/87)
Notches	41.26 An employee shall make a proper notch in each tree being felled, and without limiting the generality of the foregoing, shall <ul style="list-style-type: none"> (a) ensure that the notch is complete and cleaned out; and (b) where necessary to facilitate felling, ensure that proper wedging tools are readily available and used. (EC180/87)
Obstructions	41.27 The employer shall maintain every landing site clear of all chicots and any other hazardous obstructions. (EC180/87)
Vehicle operation	41.28 The employees shall operate skidding and forwarding vehicles at a cautious speed and in a manner that will minimize the hazard of an upset of the equipment. (EC180/87)
<i>Idem</i>	41.29 An operator of a skidding and forwarding vehicle shall perform skidding and forwarding operations only where all employees are further from the vehicle than one length of the longest log in the load. (EC180/87)
<i>Idem</i>	41.30 When skidding or forwarding a log, no employee shall raise the log to a height that might endanger the driver of a vehicle moving the log, or that may cause a vehicle to up-end or overturn. (EC180/87)
Riding	41.31 No employee shall ride on a log being skidded. (EC180/87)
Handling wire cable	41.32 The employee shall wear puncture-resistant safety mitts or gloves when handling wire cable. (EC180/87)
Cables	41.33 The employee shall maintain a safe distance from a cable that is being tightened or that is under tension. (EC180/87)

- 41.34** An employer shall provide a landing, log dump or loading area with adequate working space that is clear of obstructions. (EC180/87) Dumping area
- 41.35** No employee shall engage in the loading or unloading of logs unless he has an unobstructed view of the landing and of the vehicle being loaded or unloaded. (EC180/87) Sight lines
- 41.36** Where logs are being loaded or unloaded, an employee shall stand clear of the load, and on the same side of the load as the loader or unloader. (EC180/87) Loading
- 41.37** No employee shall be in or under the path of travel of any log or material that is being loaded or unloaded. (EC180/87) Position of employee
- 41.38** No employee shall remain in the cab of a vehicle which is not equipped with FOPS while it is being loaded or unloaded by a method in which a boom or part of the load is liable to pass over the cab, or the material load exceeds the height of the cab of the vehicle. (EC180/87) Vacation of cab
- 41.39** Where a signalman is used in the loading or unloading of logs, the signalman shall stand at one end of the logs well in the clear and shall remain visible to the loader or yarder operator. (EC180/87) Signalman, location
- 41.40** Where a binder cable is manually released and an employee may be exposed to falling logs, the employer shall make available provisions to restrain, by mechanical means, the load of a vehicle used for transporting logs. (EC180/87) Release of cable
- 41.41** An employee shall maintain a log pile in a secure and stable condition. (EC180/87) Log piles
- 41.42** An employer shall establish the safe load capacity for a logging vehicle used to carry logs and an employee shall load the vehicle in a manner not to exceed the safe load capacity. (EC180/87) Load capacity
- 41.43** An employer shall construct and maintain a haul road so as to provide for the safe movement of persons and vehicles. (EC180/87) Haul road
- 41.44** Notwithstanding section 41.43, where a haul road is constructed on ice, over water, an employer shall
- (a) make a daily inspection of the road to ensure that the road is adequate in strength to carry any load designated to ride thereon;
 - (b) place signs at suitable locations along the route indicating the minimum allowable distance to be maintained between vehicles and the maximum allowable speed; and
 - (c) instruct an employee driving a vehicle on an ice road over water with respect to the hazards involved, precautions to be taken and

rescue techniques required in case of an ice break-through.
(EC180/87)

Bridges

41.45 The employer shall

- (a) design and construct each bridge on a haul road to safely support any load that may pass over the structure;
- (b) install curbs on each bridge on a haul road of a height not less than 150 mm (6 in.); or
- (c) ensure that each bridge on a haul road is inspected and maintained on a regular basis to ensure the structural integrity of the bridge. (EC180/87)

Speed

41.46 An employee shall operate a vehicle on a haul road at a speed in which the vehicle can be brought to a complete stop within a distance of one-half of the length of the employee's unobstructed view of the haul road. (EC180/87)

Loading

41.47 An employee responsible for loading a logging vehicle shall

- (a) not load the vehicle to a point where the logs are completely above the level of the stakes;
- (b) use steel binders to secure each tier or logs; and
- (c) secure the load in a manner so as to prevent the dislodging or falling of the load or any part thereof during transit. (EC180/87)

Guards

41.48 An employee shall equip a vehicle or machine used for logging with adequate guards to safely protect the employee operating the vehicle or machine from flying cables, hooks or other objects. (EC180/87)

Brakes

41.49 A driver of a vehicle used in logging shall ensure that the brakes of the logging vehicle are operable before moving the vehicle. (EC180/87)

Bulkheads

41.50 The owner of a vehicle used to haul logs shall equip the vehicle with a bulkhead that is installed immediately behind the cab which shall be

- (a) a minimum of 8 cm (3.2 in.) wider than the cab; and
- (b) designed in such a manner to provide protection to the occupants of the cab from a shifting load. (EC180/87)

Passengers

41.51 Except in the case of an emergency, the driver of a vehicle used for hauling logs shall not allow more than one passenger to occupy the cab of the vehicle and only if seating is provided for that purpose. (EC180/87)

No riding on load

41.52 No employee shall ride on the load of a vehicle used for hauling logs. (EC180/87)

Securing binder
cables

41.53 A driver of a vehicle used for hauling logs shall

- (a) securely fasten a binder cable used to secure loads on the vehicle to the passenger side or the rear of the vehicle upon completion of loading; and
- (b) store all binder cables, when not in use, in a safe and secure manner. (EC180/87)

41.54 A driver of a vehicle used for handling logs shall clear the decks of trailers of all loose debris prior to leaving an off-loading area. (EC180/87)

Trailer deck
clearance

41.55 An employer shall provide stakes which support loads on logging vehicles that are

Stakes

- (a) made of high-strength structural steel or wood;
- (b) pinned securely to the retaining pockets at all times;
- (c) of an adequate size, strength and condition to safely support the load;
- (d) where logs 1 219 mm (4 ft.) and 2 438 mm (8 ft.) are piled crossways on a truck body, not less than four stakes shall be used on each end of the body. (EC180/87)

41.56 An employer shall allow an employee to drive a vehicle used to transport employees only if that employee is the holder of a valid and subsisting license authorizing the employee to operate the vehicle in Prince Edward Island. (EC180/87)

Transporting
employees

41.57 An employer shall ensure, where employees are being transported in a vehicle, that no tools, flammable liquids or other potentially harmful equipment or substances shall be transported

Safety requirements
re transportation

- (a) in the enclosed part of the vehicle in which employees are being transported; or
- (b) on the vehicle, except where firmly secured in racks installed outside the enclosed part of the vehicle in which the employees are being transported. (EC180/87)

41.58 The employer shall ensure that only a qualified employee, as authorized by the owner of the vehicle or the employer, shall start or operate a vehicle used in a logging operation. (EC180/87)

Qualified operators
only

41.59 An employee shall not ride on a vehicle used in logging except in the seat provided for that purpose. (EC180/87)

Riding

41.60 The owner of the vehicle used in logging shall

Inspection

- (a) locate the controls and attachments in a manner so that the operator of the vehicle has an unobstructed view of the work he is performing; and
- (b) maintain and regularly inspect the vehicle for defects before each work shift and keep a record of the inspections. (EC180/87)

Maintenance	<p>41.61 Where a dump box, bulldozer blade or any other mechanically operated attachment to a vehicle is elevated for repairs or maintenance, an employee shall</p> <ul style="list-style-type: none"> (a) securely block the blade or other attachment to prevent movement; and (b) when no repair or maintenance is being undertaken, lower the blade or other attachment to a safe rest position. (EC180/87)
Canopy	<p>41.62 The owner of mobile equipment used in a logging operation shall equip the vehicle with a steel canopy adequate to protect the operator from falling or flying objects and from an upset of the equipment. (EC180/87)</p>
Skidding equipment	<p>41.63 The owner of skidding equipment shall provide the equipment with sufficient protection at the rear of the cab to prevent injury to an employee from cable “snapback”. (EC180/87)</p>
Screens	<p>41.64 An employer shall equip all logging machinery with screens or other protective devices to guard all exposed winches, power take-offs and other moving parts. (EC180/87)</p>
General safety precautions	<p>41.65 The operator of a logging vehicle shall ensure that</p> <ul style="list-style-type: none"> (a) employees are safely in the clear before initiating or continuing the motion of the equipment; and (b) the vehicle is operated only from the position or seat intended for that purpose. (EC180/87)
Choker cables	<p>41.66 All choker cables, twitching chains or dogs shall be released and pulled away from a log or tree on the swing bed or sawing bed before slashing, bucking or measuring is undertaken. (EC180/87)</p>
Choker men	<p>41.67 Choker men or employees handling wire cables shall wear mitts or gloves of leather or nylon safety gloves. (EC180/87)</p>

PART 42 EXTREMES OF TEMPERATURE

Standards	<p>42.1 Permissible heat and cold exposure shall conform to Threshold Limit Values (TLVs) as laid down by the American Conference of Governmental Industrial Hygienists (ACGIH). (EC180/87)</p>
-----------	--

PART 43
HANDLING & STORAGE OF MATERIALS

MATERIALS

- 43.1** The employer shall ensure that a temporary storage structure shall
(a) be designed and constructed to withstand safely the loads imposed by the material to be stored; and
(b) not be loaded in excess of safe loading. (EC180/87) Temporary storage structure
- 43.2** The employer shall ensure that building materials or equipment shall not be placed or stored on a permanent or temporary structure so as to exceed the safe loadings of the structure or any part thereof. (EC180/87) Loading limits
- 43.3** The employer shall ensure that no building material shall be stored, stacked or piled within 1 800 mm (72 in.) of
(a) a floor or roof opening;
(b) the open edge of a floor or roof; or
(c) an excavation. (EC180/87) Storage prohibitions
- 43.4** (1) The employer shall ensure that material shall be so piled that the piles will not interfere with
(a) the adequate distribution of natural or artificial light;
(b) the proper operation of machines or other equipment;
(c) the unobstructed use of passageways or traffic lanes. Piling of materials
- (2) Material piles shall be placed on firm foundations not liable to settle and shall be subject to weight control, as required by the Division, so as not to overload the floors. Foundations
- (3) Material shall not be piled against partitions or walls of buildings when it is known that the partition or wall is not of sufficient strength to withstand the pressure. Walls
- (4) Material shall not be piled to a height which would render the pile unstable. Height
- (5) When piling heavy bagged material
(a) the mouths of the bags shall be placed inwards;
(b) bags shall be cross-tied; and
(c) a step back of one bag shall be made at the first 1 500 mm (5 ft.) level and at each additional 900 mm (3 ft.) of height. (EC180/87) Bagged material
- 43.5** The employer shall ensure that masonry units shall be stacked
(a) on level wooden planks, a platform or other level base;
(b) in tiers throughout a pile; Masonry units

- (c) so that a vertical face of a pile is not over 1 800 mm (72 in.) in height;
- (d) when the pile exceeds 1 800 mm (72 in.) in height, by progressively stepping the pile back from the vertical face;
- (e) when the pile exceeds 1 800 mm (72 in.), with wood strips between tiers to prevent toppling; and
- (f) with header units in the pile where necessary to provide stability. (EC180/87)

Steel and pipe **43.6** Reinforcing steel and pipe shall be stacked in substantially supported and broad racks or frames, unless other provision is made to prevent their movement sideways. (EC180/87)

Other materials **43.7** The employer shall ensure that other materials to be used on the project shall be stored in an orderly manner and so as not to endanger the safety of employees. (EC180/87)

Handling materials **43.8** The employer shall ensure that

- (a) where practicable, mechanical appliances shall be provided and used for lightening and carrying materials and articles;
- (b) employees assigned to handle material shall be instructed how to lift and carry material on an individual basis, the overriding factor being the physical condition of each employee including sex and age when relevant;
- (c) where heavy objects are lifted or carried by two or more employees, the raising and lowering of the loads shall be governed by well understood signals in order to ensure unity of action;
- (d) where heavy objects, such as loaded drums or tanks, are handled on inclines in either direction
 - (i) ropes or other tackle shall be used to control their motion, in addition to the necessary chocks or wedges, and
 - (ii) employees shall be prohibited from standing between the skids on the downhill side;
- (e) where heavy objects are moved by means of rollers, bars or sledges shall be used instead of hands or feet for changing the direction of the rollers while in motion;
- (f) employees handling objects with sharp edges, fins, splinters, splinters or similar dangerous projecting parts, or handling hot, caustic or corrosive material, shall be provided with and shall use suitable protective clothing and equipment;
- (g) unless specific instructions are given to the contrary, loaded boxes and crates shall be piled on the sides having largest area;
- (h) the piles shall be effectively cross-tied by suitable means;

- (i) loaded cartons shall not be piled to such a height as to cause collapse of the lower cartons in the pile and shall be protected against moisture;
- (j) lumber stored in yards shall be piled on supports above the grounds, the horizontal or slightly inclined layers separated by tie pieces, the ends of which will not project into walkways;
- (k) pipe and bar stock shall, where practicable, be piled on stable storage racks so located that the withdrawal of the material does not create a hazard;
- (l) where empty barrels or drums, large pipe, rolls of paper or other cylindrical objects are piled on their sides, the piles shall be symmetrical and stable; and every unit in the bottom row shall be carefully wedged;
- (m) where storage racks are not provided for pipe and bar stock, the stock shall be piled on layers resting on wood strips with stock blocks fixed on the ends or on metal bars with unturned end;
- (n) where loaded barrels, drums or keys are piled on their ends, the piles should be low and two planks should be laid side by side on top of each row before another row is started;
- (o) equipment or objects, such as foundry flasks, forging dies, foundry castings and the like, shall be piled in a stable, orderly way on level and substantial foundation and arranged in order of size and type. (EC180/87)

HAZARDOUS LIQUIDS

43.9 The employer shall ensure that tanks used for storing non-flammable hazardous liquids shall meet the following requirements:

Hazardous liquid
storage

- (a) labelled to identify the contents and indicate the nature of the hazard involved in handling it as well as instructions for handling of the hazardous liquid;
- (b) located above ground or floor level;
- (c) so supported that leakage from any part of the tank will be noticeable;
- (d) surrounded with pits, catch basins or depressions of sufficient size to hold the entire contents of the largest tank in the event of rupture;
- (e) covered with protective paint to prevent corrosion from moisture or fumes; and
- (f) provided with stairways or permanent ladders and platforms where necessary, for convenient and safe access to all parts of the tanks with standard safe railings on both stairways and platforms and preferably with floors or platforms constructed of grating. (EC180/87)

Low temperature protection	43.10 Where necessary, above ground tanks used for storing non-flammable hazardous liquids shall be suitably protected against low temperatures. (EC180/87)
Tanks	43.11 Tanks used for storing non-flammable hazardous liquids shall not be placed above passageways. (EC180/87)
Pits	43.12 Where tanks used for storing non-flammable hazardous liquids are installed in pits below ground level the pits shall be made of concrete or masonry, with sufficient space between the walls and the tanks to permit the passage of a person at any point; and the tanks shall be mounted 381 mm to 457 mm (15 in. to 18 in.) above the bottom of the well. (EC180/87)
Control valves	43.13 All control valves for sunken tanks used for storing non-flammable hazardous liquids shall be so situated or of such design that they can be turned without any person entering the pit; and provided with locking devices operated from outside the pit. (EC180/87)
Tank location requirements	43.14 Tanks used for storing non-flammable hazardous liquids shall be placed on foundations that will resist action by the contents of the tank and provided with overflow pipes discharging into a safe place. (EC180/87)
Caustic liquid tanks	43.15 Tanks used for storing corrosive or caustic liquids shall be provided with a permanently open vent pipe, not less than 50 mm (2 in.) in diameter, at the highest point in the tank and a drain connection at the lowest point in the tank discharging into a safe place. (EC180/87)
Connections	43.16 Tanks used for storing corrosive or caustic liquids shall have the filling connection at the top and the discharge pipe 152 mm (6 in.) above the bottom. (EC180/87)
Storerooms for flammable liquids	43.17 Where barrels or drums containing flammable liquids are stored in special storerooms inside factories or in small isolated storehouses, the storeroom or house shall be of fire-resistant construction and the floor of the storeroom or house shall slope to a drain pipe leading outside to a catch basin which shall not be connected to a sewer. (EC180/87)
Waterproof floors	43.18 The floor of the storeroom or house shall be waterproof, with the waterproofing extended up the side walls for not less than 76 mm (3 in.) and the barrels or drums shall be placed in cement platforms, concrete blocks, brick and metal racks. (EC180/87)
Acid drums	43.19 Drums containing acids shall be stored in cool places with the bung up; they should be carefully opened sufficiently to relieve any internal pressure, and subsequently sealed again, with the operation

repeated each time the drum has been moved or once a week if stored for a period of time. (EC180/87)

43.20 Empty barrels or drums which have contained flammable liquids shall be stored for re-use with the bungs or outlet plugs in place in order to confine all flammable vapours. (EC180/87)

Empty barrels

43.21 Empty barrels or drums which have contained acids or other non-flammable liquids, if to be re-used, shall be promptly cleaned and stored apart from other containers. (EC180/87)

Cleaning

43.22 Barrels or drums which have contained hazardous non-flammable liquids, if to be re-used, shall be promptly cleaned and stored apart from other containers. (EC180/87)

Idem

43.23 Barrels or drums used for flammable liquids shall be steamed before being crushed or broken up. (EC180/87)

Steaming

43.24 Drums and barrels used for hazardous liquids, and intended for further use, shall be closely inspected for leaks and other defects, and if to be used for a different liquid shall be thoroughly cleansed with an appropriate neutralizing solution, steam or boiling water, and drained, dried and reinspected, with the operations repeated until the inside is entirely clean. (EC180/87)

Cleaning procedure

43.25 (1) Carboys containing acids, which when in contact with living tissue will cause severe damage of such tissue by chemical action or in case of leakage will materially damage or destroy other material by chemical action or are liable to cause fire when in contact with organic matter, shall be encased singly in baskets or in boxes cushioned with non-combustible packing.

Carboys

(2) Such carboys shall be stored in separate storerooms or buildings with concrete floors having an anti-acid protection or with brick floors properly drained to catch basins. (EC180/87)

Storage

43.26 Such carboys shall not be subjected to dampness, extreme heat or sudden changes in temperature. (EC180/87)

Idem

43.27 Special handling equipment, such as two-wheeled carboy trucks, shall be provided for transporting such carboys containing acids to and from storage. (EC180/87)

Transportation

43.28 Adequate equipment shall be provided and used for emptying of such carboys. (EC180/87)

Emptying

43.29 Empty acid carboys shall be stored apart from filled carboys. (EC180/87)

Storage

Inspection	43.30 Carboys together with their baskets or boxes shall be examined as to their condition before they are filled. (EC180/87)
Emergency washing facilities	43.31 Where caustic or acids are stored, handled or used in such a manner as to create a danger of spillage, emergency deluge showers and eyewash fountains as required in subsection 2.6(3) shall be provided. (EC180/87)

DRY BULK STORAGE

Storage bins	43.32 The employer shall ensure that dry bulk materials are in bins which will permit removal from the bottom. Open top hopper bins containing bulk material which is discharged at the bottom either by hand or by mechanical means should be covered with gratings which will allow the use of pokers to break up bridging of the stored material, but which will prevent employees from falling into the bins. (EC180/87)
Lifebelts	43.33 Where it is necessary for employees to enter bins used for storing dry bulk material, each employee shall be provided with, and shall use, an approved safety belt attached to an approved lifeline that is as short as practicable and securely fastened to a fixed object; and another employee shall be stationed outside during the entire operation to render such assistance as is needed. (EC180/87)
Entry precautions	43.34 Employees shall not be permitted to enter bins used for storing dry bulk material until all supply of materials to the bin has been discontinued and precautions have been taken against accidental renewal. (EC180/87)
Access	43.35 Bins used for storing dry bulk material shall be provided, on the outside, with stairways or permanent ladders and platforms where necessary for easy and safe access to all parts. Standard railings shall be used on stairways and platforms. (EC180/87)
Construction	43.36 Bins used for storing highly combustible dry materials shall be of fire-resistant construction and provided with lids and an adequate ventilation system. (EC180/87)
Piling	43.37 Where dry bulk material is piled and removed manually undermining of piles shall not be permitted. (EC180/87)

PART 44

STORAGE BATTERY ROOMS

Charging batteries	44.1 (1) The employer shall ensure that storage batteries that discharge flammable gases are kept electrically charged only in rooms or areas designed for that purpose.
--------------------	---

(2) The employer shall ensure that the room or area required by subsection (1)

Requirements re
storage

- (a) is adequately ventilated to prevent the accumulation of flammable gases;
- (b) is free from all sources of ignition;
- (c) is marked at the entrance with a notice prohibiting smoking or open flames;
- (d) has a floor of non-sparking material and with adequate drainage;
- (e) when storage batteries are mounted in trays or on a rack, has level trays or a level rack constructed or covered with non-sparking material and of sufficient strength to carry the weight of the battery;
- (f) has an adequate supply of fresh water for flushing and neutralizing spilled or splashed electrolyte;
- (g) has wiring which complies with the CSA Standard C22.1 Canadian Electrical Code, Part 1, for the method of wiring in storage battery rooms;
- (h) if equipment is used for hoisting or handling batteries, has equipment of adequate capacity;
- (i) is not used for general storage.

(3) The employer shall ensure that

Idem

- (a) storage batteries are kept clean and free from dust;
- (b) vent openings in batteries are kept clear to prevent pressure build up in the battery during storage;
- (c) a storage battery is adequately secured;
- (d) smoking shall not be allowed in battery storage rooms;
- (e) floors in storage battery rooms or areas are washed promptly when spillage occurs;
- (f) when a storage battery is of no further use, it is disposed of in a manner which prevents spillage of electrolyte.

(4) The employer shall ensure that only competent persons are permitted to change or charge batteries. (EC180/87)

Personnel

44.2 The employer shall provide and shall instruct the employee to wear acid resistant gloves, aprons, goggles or face shields and straps for carrying car or truck batteries when handling storage batteries or electrolyte. (EC180/87)

Safety equipment

44.3 The employee shall wear acid resistant gloves, aprons, and goggles or face shields and use appropriate carrying straps when handling storage batteries or electrolyte. (EC180/87)

Idem

44.4 The employee shall

Procedures

- (a) when diluting concentrated sulphuric acid, add the acid to the distilled water and never the water to the acid;

(b) keep the charging rate of storage batteries at a rate which will prevent too rapid generation of hydrogen in the battery. (EC180/87)

PART 45 PERSONAL PROTECTIVE EQUIPMENT

Wearing apparel	45.1 The employer shall ensure that the personal wearing apparel of an employee shall be of a type and condition that will not expose the employee to any unnecessary and avoidable hazards. (EC180/87)
Maintenance	45.2 The employer shall ensure that personal protective equipment is maintained in good condition. (EC180/87)
Instruction	45.3 Every employer shall ensure that every employee who is required to use personal protective equipment shall be given pre-job instruction by the employer to understand its use, its limitations, and its maintenance requirements, as far as these relate to its correct use by the employee. (EC180/87)
Testing	45.4 An employee wearing or using personal protective equipment shall test the equipment before each use and shall not wear or use any equipment he has reason to believe is defective. (EC180/87)

HEAD PROTECTION

Standard head protection	45.5 The employer shall ensure that an employee on a worksite or at any other place of employment who is exposed to a hazard, which could injure the head, wears head protection* appropriate to the hazard and which meets the standards and specifications of CSA Standard Z94.1 "Industrial Protective Headwear" or the equivalent. * The replacement of headgear every five years and headgear suspension annually is a recommended safe practice. (EC180/87)
Chin straps	45.6 Chin straps or other effective means of ensuring retention of safety headgear shall be fitted and worn when employees are exposed to high winds or other conditions which might cause the loss of the headgear. (EC180/87)

EYE AND FACE PROTECTION

Standard eye protection	45.7 The employer shall ensure that an employee exposed to a hazard which could irritate or injure the eyes or face wears protection appropriate to the hazard and which meets the standards and specifications of the CSA Standard Z94.3 "Industrial Eye and Face Protectors" or a standard offering equivalent protection. (EC180/87)
-------------------------	--

45.8 The employer shall ensure that an employee who has 20/200 vision in either eye, or is blind in either eye, wears eye protection as required by section 45.7. (EC180/87) Obligation of employer

45.9 When an employee intends to wear contact lenses at his place of employment, he shall immediately notify the employer. (EC180/87) Contact lenses

45.10 The employer shall ensure that no employee shall wear contact lenses where Idem

- (a) gases, vapours or other materials are present which when absorbed by contact lenses may harm the eyes; or
- (b) dusts or other materials are present which may harm the eyes or cause distraction which may expose the employee to other injury. (EC180/87)

45.11 An employee shall not wear contact lenses while welding. Idem
(EC180/87)

HEARING PROTECTION

45.12 (1) In this section “approved” means any recognized standard which is approved by the Division. Approved

(2) Where hearing protective devices are provided as a means of protecting employees as required in section 8.2 the employer shall ensure that Hearing protective devices

- (a) the employee is adequately trained in the use and care of the hearing protective device;
- (b) every hearing protective device provided under this section is approved; and
- (c) hearing protective devices are adequately maintained. (EC180/87)

HAND PROTECTION

45.13 The employer shall ensure that all persons handling materials likely to puncture, abrade or irritate hands or arms, shall wear personal protective equipment to prevent such injuries, except when the use of this equipment introduces equal or greater hazards. (EC180/87) Hands

ACIDS, CAUSTICS AND HOT MATERIALS PROTECTION

45.14 The employer shall ensure that employees handling or using acids, caustics, steam, abrasives, hot fluid jets, or similar harmful substances, shall use suitable personal protective equipment, or other means shall be adopted that will provide protection against these hazards. (EC180/87) Handling acids, etc.

FOOT PROTECTION

Footwear	45.15 The employer shall ensure that an employee on a project site or at any place of employment who is exposed to a hazard which could injure the foot wears footwear which meets the standards and specifications of CSA Standard Z195 “Protective Footwear” or a standard offering equivalent protection. (EC180/87)
Defective footwear	45.16 (1) Footwear that has deteriorated to a point where it does not provide the required protection shall not be used.
<i>Idem</i>	(2) When mobile equipment is fitted with foot operated controls the operator shall not wear footwear deemed by the officer to be unsafe.
Exception	(3) Section 45.15 does not apply when footguards or other devices affording equivalent protection are worn. (EC180/87)

RESPIRATORY PROTECTION

Hazardous air	45.17 (1) Every employer shall ensure that when employees are or may be exposed to an oxygen deficient atmosphere or harmful concentrations of air contaminants, mechanical means of engineering design shall be utilized to prevent or to eliminate such hazardous conditions of exposure.
Respiratory equipment	(2) Every employer shall ensure that where the prevention or elimination of such hazardous conditions is not reasonably practicable, or where the exposure results from temporary or emergency conditions only, every employee exposed shall wear approved protective respiratory equipment. (EC180/87)
Standards	45.18 (1) The employer shall ensure that the selection, care and use of respirators meet the applicable standards and specifications set out and referred to in the CSA Standard Z94.4 “Selection, Care and Use of Respirators”, including amendments, or an approved standard offering equivalent protection.
<i>Idem</i>	(2) The employer shall ensure that where air is provided for the purpose of any respiratory protective equipment, the air meets the applicable standards and specifications set out and referred to in the CSA Standard Z180.1 “Compressed Breathing Air”. (EC180/87)
Shaving	45.19 Every employer shall ensure that employees required to use a respirator shall be clean shaven where the respirator seals with the face. (EC180/87)
Signs	45.20 (1) Every employer shall ensure that access routes to work areas where employees may be exposed to oxygen deficient atmosphere or

harmful concentrations of air contaminants shall be posted with signs and specifying

- (a) the required personal protective equipment; and
- (b) the areas and hazards involved.

(2) The employer shall ensure that sufficient employees who are trained in rescue procedures are immediately available whenever employees are working in areas where an oxygen deficient atmosphere or harmful concentrations of air contaminants exists or is likely to develop. The rescue employees shall have immediate access to appropriate breathing apparatus or other aids necessary to effect a rescue.

Rescue team

(3) The employer shall ensure that where an employee is wearing an approved air-line or approved air-hose type respirator in an atmosphere immediately harmful to the employee

Air supply

- (a) the air supply source shall be attended by another employee who shall be equipped to effect rescue or render assistance if the employee is rendered unconscious or otherwise incapacitated; and
- (b) the employee shall be provided with and carry an auxiliary supply of compressed respirable air of sufficient capacity to enable the employee to escape from the area in an emergency or until rescue is effected. (EC180/87)

WATER SAFETY EQUIPMENT

45.21 The employer shall ensure that where an employee is exposed to a risk of drowning, the employee is

Safety equipment

- (a) provided with and shall wear a life jacket or buoyancy device that meets the applicable standards and specifications set out and referred to in the Canadian General Standards Board (CGSB) standard 65-GP-14M, CAN 21-65.7-M80 or 65 GP-11; or
- (b) protected by a safety net or fall protection system or by a solid platform with a guard rail and a safe access that will prevent the employee from falling into the water or other liquid. (EC180/87)

FALL PROTECTION SYSTEMS

45.22 (1) The employer shall ensure that an employee uses a fall protection system if he is required to work from

Fall protection system

- (a) an unguarded work area that is
 - (i) more than 2.4 m (8 ft.) above the nearest permanent safe level,
 - (ii) above any surface or thing that could cause injury to the employee upon contact, or
 - (iii) above any open-top tank, pit or vat; or

- (b) any swing staging or other similar temporary work structure that is more than 3 m (10 ft.) above a permanent safe level, and from which a person may fall if the structure tips or fails; or
- (c) any communication or power transmission tower or other similar structure that is over 3 m (10 ft.) in height and employees shall secure themselves to the tower or structure when at rest or at the working level.

Standards

- (2) The employer shall ensure that the components of the fall protection system required under subsection (1) meet the appropriate standards and specifications set out and referred to in
- (a) the CSA Standard Z259.1 "Fall Arresting Safety Belts and Lanyards for the Construction and Mining Industries";
 - (b) the CSA Standard Z259.2 "Fall Arresting Devices, Personnel Lowering Devices and Life Lines"; or
 - (c) the CSA Standard Z259.3 "Lineman's Body Belt and Lineman's Safety Strap".

Anchor

- (3) The employer shall ensure that every fall protection system is attached to a secure anchor capable of withstanding a force of 17.8 kN (4000 lbs.).

Fall distance

- (4) The employer shall ensure that every fall protection system used to arrest the fall of an employee prevents that employee from falling freely for more than 1.2 m (4 ft.).

Safety net

- (5) Where other methods of protecting an employee from a hazardous fall are not practicable, the employer shall ensure that an adequate safety net is installed where necessary for the protection of employees. (EC180/87)

Safety harness

- 45.23** (1) The employer shall ensure that an employee wears a safety harness with a life line attached when entering bins, hoppers, chambers, vessels, manholes or any confined space where there is danger of
- (a) being buried by movement of material;
 - (b) being overcome by contaminated air or lack of oxygen; or
 - (c) falling into any place that might cause injury.

Sentinel

- (2) The employer shall ensure that when an employee is required to work in the conditions described in subsection (1), another employee tends the life line and is in a position where he can readily effect rescue if necessary. (EC180/87)

PART 46
CHAINS, SLINGS AND WIRE ROPE

46.1 The employer shall ensure that chains, slings and wire ropes meet the following specifications: Specifications

- (a) hoisting and sling chains shall be made of wrought iron or steel;
- (b) the rings, hooks, shackles and end links for hoisting and sling chains shall be made of wrought iron or steel;
- (c) the factor of safety for new hoisting or sling chains shall be at least five;
- (d) hoisting or sling chains shall be withdrawn from service if the chains have become unsafe through overloading, or through faulty or improper annealing; or if the chains have stretched more than 5 per cent of their original length; or if the interlink wear exceeds one-fourth the thickness of the original link;
- (e) all hoisting or sling chains shall have the safe working load marked on the bull rings or hooks or on special links near the ends of the chain;
- (f) chains shall be free of kinks, knots and twists when used for hoisting loads;
- (g) splicing of hoisting or sling chains by wiring links together, by inserting bolts between links, or by passing one link through another and inserting a bolt or nail to hold it, shall be prohibited;
- (h) hoisting chains shall be wound only on drums, shafts or sheaves that are provided with grooves of such size and shape as to allow the chains to work smoothly without twisting. (EC180/87)

46.2 Wire rope for hoisting, lowering or hauling loads shall be of proper construction and size for the operation. Wire rope

46.3 The factor of safety for wire rope shall be at least six. (EC180/87) Safety factor

46.4 Eye splices, sockets and rope anchorages subjected to a direct tensile load shall be capable of withstanding a load of at least six times the maximum permissible working load. (EC180/87) Loads

46.5 Eye splices and loops for the attachment of hooks, rings and other parts to wire ropes shall be provided with suitable thimbles. (EC180/87) Thimbles

46.6 Wire rope shall be removed from service whenever its strength is affected by broken wires to the following extent: Replacement of wire rope

- (1) 6 by 7 wire rope; 12% on a length of 508 mm (20 in)
- (2) 6 by 19 wire rope; 20% on a length of 508 mm (20 in)
- (3) 6 by 37 wire rope; 25% on a length of 508 mm (20 in)

(4) 6 by 61 wire rope; 25% on a length of 508 mm (20 in) (EC180/87)

Marking	46.7 The size, material and the maximum safe working load shall be marked on all wire ropes by means of metal tags or in another suitable way. (EC180/87)
Kinks	46.8 Wire ropes used for hoisting, lowering or hauling loads shall be free from kinks and knots. (EC180/87)
Ends	46.9 Ends of wire rope shall be seized to prevent the strands from becoming loose. (EC180/87)
Fastenings	46.10 Fastenings of wire ropes shall be carefully examined at regular intervals, and clips or clamps tightened if they show signs of loosening. (EC180/87)
Dangerous conditions	46.11 When there is the least sign of a dangerous condition at sockets or other fastenings of wire ropes, a section of the rope from 914 mm to 3 048 mm (3 ft. to 10 ft.) above the fastening shall be cut off and the rope refastened. (EC180/87)
Splices	46.12 A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of rope and two tucks with one half the wires cut out of each strand. (EC180/87)
Lubricants	46.13 Wire ropes shall be treated at regular intervals with suitable lubricants. (EC180/87)
Fibre rope	46.14 Fibre rope for hoisting, lowering or hauling loads shall be of high grade hemp or other rope of equal quality, capable of withstanding a load of at least 5 171.04 kg per cm (11,400 lbs. per sq.in.). (EC180/87)
Safety factor	46.15 Fibre rope shall have a factor of safety of ten. (EC180/87)
Tags	46.16 All fibre ropes used for hoisting shall bear a metal tag on which is stamped a number referring to an inventory giving <ul style="list-style-type: none"> (a) name of supplier; (b) date of placing in service; (c) maximum permissible load. (EC180/87)
Ends	46.17 Fibre rope shall be seized on the ends to prevent fraying. (EC180/87)
Splices	46.18 Eye splices on fibre rope shall be made around suitable thimbles. (EC180/87)

PART 47

CONSTRUCTION WORK IN COMPRESSED AIR ENVIRONMENT

47.1 The employer shall ensure construction work in a compressed air environment meets the CSA Standard Z275.3 “Occupational Safety Code for Construction Work in Compressed Air”. (EC180/87) Standard

PART 48

UNDERWATER DIVING OPERATIONS

48.1 The employer shall ensure that all underwater diving operations meet the CSA Standard Z275.2, “Occupational Safety Code for Diving Operations”. (EC180/87) Underwater diving operations

PART 49

49.1 In these regulations Definitions

(a) “asbestos” means any of the following asbestiform silicates: asbestos

- (i) actinolite,
- (ii) anthophyllite,
- (iii) chrysotile,
- (iv) crocidolite,
- (v) amosite, or
- (vi) tremolite;

(b) “asbestos dust” means airborne particles of asbestos or settled particles of asbestos which are liable to become airborne; asbestos dust

(c) “asbestos fibre” means asbestos fibres having a diameter of less than 3 µm and a length greater than 5 µm, with a length to diameter ratio greater than 3:1; asbestos fibre

(d) “asbestos removal contractor” means a person or employer who engages in the handling or removal of asbestos containing products; asbestos removal contractor

(e) “exposure to asbestos” means employee exposure at work to airborne respirable asbestos fibres or asbestos dust, whether originating from asbestos or from minerals, materials or products containing asbestos; exposure to asbestos

(f) “fibre/cm” means fibres per cubic centimeter; fibre/cm

(g) “friable material” means material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered; friable material

- HEPA filters (h) "HEPA filters" means high efficiency particulate aerosol filters that have an efficiency of at least 99.97 per cent in containing an aerosol of 0.3 micron in diameter;
- um (i) "um" means micrometer. (EC596/90)

APPLICATION

- Application **49.2** (1) These regulations apply
- (a) to every employer
 - (i) engaged in the repair, alteration, maintenance or demolition of machinery, equipment, aircraft, ships, locomotives, railway cars and vehicles, and to those employees of such an employer, or
 - (ii) engaged in work on a building that is necessarily incidental to the repair, alteration, maintenance or demolition of machinery, equipment, boilers, pressure vessels, piping or structures, and to those employees of such an employer; or
 - (b) to any other workplace where material containing asbestos is likely to be handled, dealt with, disturbed or removed.
- Obligations of employer (2) An employer to whom this regulation applies shall take every precaution reasonable to ensure that every employee who works in the workplace is protected, and every such employee shall comply with the requirements of the employer and these regulations. (EC596/90)

PROHIBITIONS

- Spraying asbestos **49.3** (1) No person shall apply or install by spraying or cause to be applied or installed by spraying material containing more than 1 per cent asbestos by dry weight that can become friable.
- Material containing asbestos (2) No person shall apply or install insulation or cause to be applied or installed material containing more than 1 per cent asbestos by dry weight that can become friable, without prior approval from the Director.
- Crocidolite (3) The use of crocidolite and products containing this mineral is not permitted.
- Fabrication of asbestos materials (4) The spinning, weaving, braiding of asbestos materials, or the fabrication or maintenance of materials with asbestos cloth shall not be permitted. (EC596/90)
- Sealants **49.4** A liquid sealant or encapsulant shall not be applied to friable aterial that contains asbestos if the friable material has visibly deteriorated or there is insufficient strength and adhesion of the friable material to its underlying materials and surfaces to support the weight of the sealant and the friable materials. (EC596/90)

49.5 The employer shall ensure that, where it is practical and feasible to substitute materials less hazardous than asbestos, such materials be used. (EC596/90)

Substitute materials

RESPONSIBILITIES

49.6 (1) Every employer shall take all necessary measures and procedures, by means of engineering controls, work practices and hygiene practices and facilities outlined in these regulations, to ensure that the time weighted average exposure of an employee to airborne asbestos is reduced to the lowest practical level and in any case shall not exceed,

Exposure limits

- (a) in the case of amosite, 0.5 fibre/cm of air;
- (b) in the case of crocidolite, 0.2 fibre/cm of air;
- (c) in the case of chrysotile, 2.0 fibre/cm of air;
- (d) in the case of other asbestos, 2.0 fibre/cm of air.

(2) The time weighted average exposure of an employee to airborne asbestos shall be calculated in accordance with the method described by ACGIH, and the result of the exposure calculation may be confirmed by an officer. (EC596/90)

Calculation

49.7 (1) Every employer who undertakes the handling of asbestos containing materials as outlined in section 49.2 shall be the holder of a valid asbestos contractor's certificate.

Contractor's
certificate

(2) The application for an asbestos contractor's certificate shall be made to the Director.

Application

- (3) A contractor's certificate may be granted if the applicant
- (a) furnishes a copy of the current procedure manual used for the specific purposes intended in the asbestos project;
 - (b) has completed a course in asbestos abatement acceptable to the Director;
 - (c) has employed employees who have completed a course in asbestos removal acceptable to the Director;
 - (d) has the necessary control equipment available for use as described in these regulations. (EC596/90; 360/92)

Issue

49.8 Before any person commences any work involving the handling of asbestos as outlined in section 49.2, he shall

Requirements
before commencing
work

- (a) make written notification to the Division on the form supplied by the Director, giving a description of the work to be done and any particulars associated with the work;
- (b) provide names of the employees who will perform the work;

(c) provide specific details of the work, to be performed in reference to the contractors associated procedures manual. (EC596/90; 360/92)

Suspension, etc. of
certificate

49.9 The Director may suspend, revoke or cancel any certificate for any violation by the asbestos removal contractor or his employees of any provisions of the Act or regulations. (EC596/90)

WORKPLACE ASSESSMENT

Assessment

49.10 Every employer to whom these regulations apply shall cause an assessment to be made in writing of the exposure or likelihood of exposure of an employee to the inhalation or ingestion of asbestos. (EC596/90)

Monitoring
exposure levels

49.11 (1) Where it is necessary for the protection of employees, the employer shall monitor the concentration of airborne asbestos in the workplace and shall monitor exposure of employees to asbestos by recognized methods.

Records

(2) The records of the monitoring of the working environment and of employee exposures shall be kept for an indefinite period of time.

Access

(3) The employees concerned and their safety committee or safety representative shall have access to these records. (EC596/90)

Sampling

49.12 Where it is considered necessary by an officer, he may order the sampling and analysis of bulk material in a workplace for the purposes of determining presence of asbestos and potential exposures. (EC596/90)

Costs

49.13 For the purposes of these regulations, any costs incurred through monitoring, analysis or any other associated activities for the protection of employees, are the responsibility of the employer. (EC596/90)

PERSONAL PROTECTIVE EQUIPMENT

GENERAL

Work clothing

49.14 (1) Where employees' personal clothing may become contaminated with asbestos dust, the employer shall provide and pay for appropriate work clothing, which shall not be worn outside the workplace.

Idem

(2) Subsection (1) shall be satisfied through the use of disposable clothing, consisting of full body coveralls.

Alternative cleaning
program

(3) Notwithstanding subsection (2), the Director may approve in writing the use of other clothing where the employer has provided an

acceptable program of cleaning and this program provides equivalent protection as outlined in subsection (1).

(4) The handling and cleaning of special protective clothing shall be carried out under controlled conditions to prevent the release of asbestos dust. *Mode of cleaning*

(5) The employer is responsible for the cleaning, maintenance and storage of work clothing, special protective clothing and personal protective equipment. (EC596/90) *Employer responsibility*

RESPIRATORY

49.15 (1) The employer shall ensure that respirators are provided, maintained, inspected and tested in accordance with CSA Standard Z94.4-M1982 Selection, Care and Use of Respirators, as periodically updated. *Respirators*

(2) The employer shall provide positive air purifying respirators or supply air respirators with full facepiece to employees who remove asbestos containing products from any machine, building or structure. *Idem, full facepiece*

(3) Where operations are such that the possibility of asbestos fibres being released into ambient air is negligible, the employer may provide a negative pressure half facepiece respirator to the employee. *Idem, half facepiece*

(4) For the purposes of subsection (3), operations with a negligible probability of fibre release to ambient air are *Application of subsection (3)*

- (a) sampling bulk material for identification;
- (b) removal of a short section of pipe insulation using the glove bag procedures outlined in section 49.21;
- (c) the removal or maintenance of asbestos-cement products. (EC596/90)

HYGIENE

49.16 (1) The employer shall construct a portable shower in the decontamination section of a work enclosure as outlined in section 49.21. *Showers*

(2) All employees who enter the work enclosure shall shower before leaving the enclosure. *Idem*

(3) For the purposes of subsection (2), all protective clothing shall remain in the contaminated section of the enclosure, and the respiratory protective equipment shall remain worn until the employee is completely wetted from the shower. (EC596/90) *Proper use*

Food, etc. **49.17** Employees shall not eat or smoke, or transport food or tobacco products into a workplace where they may become contaminated with asbestos fibres. (EC596/90)

WORKPLACE CONTROLS

Product analysis **49.18** (1) Prior to any work being carried out on any item as outlined in section 49.2, the employer shall ascertain as to the type of product, and whether or not the product to be handled contains asbestos.

Laboratory examination (2) Pursuant to subsection (1), where it can not be ascertained as to the asbestos content of a product, the employer shall obtain a sample of product and submit it to a competent laboratory for identification of asbestos content.

Sampling procedure (3) Where an employer is required to sample a product for asbestos content, it shall be obtained in a safe procedure to ensure asbestos fibres are not released during the sampling process.

Costs (4) Any costs incurred during the sampling and analysis process is the responsibility of the employer. (EC596/90)

Ventilation **49.19** The employer shall ensure that any existing mechanical ventilation systems are isolated such that fibres may not contaminate any part of the system or other parts of the building. (EC596/90)

ENCAPSULATION

Use of encapsulants **49.20** (1) Where it is considered practical to allow asbestos containing products to remain within a workplace, the use of an encapsulant may be used to prevent fibre release into the workplace.

Maintenance (2) Where an encapsulant has been used, the employer shall develop a maintenance program that includes
(a) identification of the product with labels that identify presence of asbestos;
(b) training of employees on the product and special precautions and procedures required during maintenance;
(c) inspection procedures and schedules to assess potential for fibre release.

Orders (3) Where an officer has assessed a product and has determined that due to the condition or friable nature, a potential hazard to asbestos fibres exists, he may order that product to be sealed with encapsulant, either penetrating or bridging, or he may order that the product be removed. (EC596/90)

ENCLOSURE

49.21 (1) Where asbestos containing products are to be handled as outlined in section 49.2, the employer shall take every reasonable precaution to prevent the release of asbestos fibres into the workplace.

Prevention of
release of fibres

(2) For the purposes of this section, reasonable precautions are the use of glove bags for work involving small sections of pipe, or total enclosures for major projects.

Enclosures

- (3) When total enclosures are constructed,
- Idem*
- (a) they shall be supported by adequate framing, and sheathed with six mil polyethylene sheeting;
 - (b) doorways shall be constructed of double layers of polyethylene, having joints reinforced with fabric tape;
 - (c) all overlapping of polyethylene shall be sealed with fabric tape;
 - (d) the enclosure shall be partitioned with separate sections for the following areas:
 - (i) contaminated work room,
 - (ii) transfer room,
 - (iii) transfer room corridor,
 - (iv) shower room;
 - (e) each partitioned section shall contain a polyethylene door to separate each section, and polyethylene floors to facilitate clean-up;
 - (f) signs shall be posted at the exterior of the enclosure at prominent locations to prevent the entry of unauthorized personnel;
 - (g) pursuant to clause (f), signs shall notify personnel to the following:
 - (i) asbestos hazard is present,
 - (ii) cancer and lung disease hazard,
 - (iii) restriction to authorized personnel only,
 - (iv) requirement for respiratory protection and protective clothing.
- (EC596/90)

REMOVAL PROCEDURE

49.22 (1) The employer shall provide ventilation during the complete removal process, to ensure that the enclosure is under adequate negative pressure.

Ventilation

(2) The ventilation system shall be of a type designed for use in toxic environments, and shall have properly maintained HEPA filters in place.

Type of system

(3) The volume of air shall be such that the air exchange rate is a minimum of 4 air changes per hour, and the differential pressure is at least 5 pascals (0.02 inches HO).

Air exchange

Smoke testing	(4) Smoke testing shall be conducted prior to commencement of work, to ensure integrity of enclosure and prevent fibres from being released outside of enclosure. (EC596/90)
Spraying	49.23 (1) Prior to commencement of any asbestos work, the material shall be saturated with amended water using low pressure sprays and following the initial spray, the material shall be left for 6 hours, then resprayed to saturation.
Electrical equipment	(2) If necessary, any electrical equipment shall be isolated from the entry of water and those circuits de-energized prior to the spraying of water. (EC596/90)
Mode of removal	49.24 (1) The water-saturated material shall be removed in small sections and immediately placed in labelled containers and sealed when filled.
Slurry	(2) Any slurry produced shall also be contained and not discharged into drains.
Cleaning containers	(3) The exterior surface of waste containers shall be adequately cleaned in the contaminated work room.
Waste	(4) The waste containers shall be placed in uncontaminated containers in the transfer room. (EC596/90)
Vacuum	49.25 (1) The employer shall provide a vacuum system with HEPA filtration in unit and HEPA filtration on exhaust of unit.
Use	(2) The vacuum system described in subsection (1) shall be used when work is performed in a glove bag enclosure.
Location	(3) The vacuum system described in subsection (1) shall be in the room enclosure described in section 49.21, and shall be used for vacuuming of objects and floors at the end of the work day. (EC596/90)

DECONTAMINATION

Room enclosure, entry	49.26 (1) When work is to commence in a room enclosure, employees shall <ul style="list-style-type: none"> (a) prior to entry into enclosure, remove all clothing and place in lockers; (b) fit on clean respiratory protection equipment; (c) put on clean work clothing; (d) enter work area.
Decontamination procedure	(2) At the end of work, or when employees must leave the contaminated area for any reasons, they shall

- (a) remove all loose asbestos fibres from work clothing with vacuum system while still in the work room;
- (b) enter the transfer room and remove all work clothing except respiratory protection, and place it in the waste receptacle provided for that purpose;
- (c) enter the shower room and completely wet body before removing respirator;
- (d) adequately clean the respirator while in the shower;
- (e) enter clean area to dry and dress with clean clothing. (EC596/90)

49.27 Prior to dismantling the enclosure, the employer shall ensure that the entire area is sprayed with a latex sealant and permitted to dry for an adequate period of time. (EC596/90)

Sealing enclosure
area

RECORDS

49.28 (1) The employer shall establish and maintain an accurate record for each employee, containing the following:

Employee record

- (a) physician's reports from examinations performed on a routine basis which assesses the employee's potential exposures and limitations;
- (b) detailed work history containing dates and length of jobs performed; including types of job and material handled;
- (c) training records of the employee.

(2) The employer shall ensure that all employee records as outlined in subsection (1) shall be maintained for a period of not less than forty years. (EC596/90)

Retention of records

PART 50 TRAFFIC CONTROL

50.1 In this Part

Definitions

- (a) "signaller" means a person engaged in controlling traffic movements through workplaces;
- (b) "roadway" means that portion of a highway improved, designed or ordinarily used for vehicular travel, exclusive of the shoulder unless the shoulder is paved;
- (c) "traffic control" includes patrol vehicles, traffic lights, signs, barricades, cones, detours, signallers, or other techniques and devices made necessary by the prevailing circumstances. (EC225/91)

Signaller

Roadway

Traffic Control

50.2 The employer shall ensure

Employer
Responsibilities

- (a) that effective means of traffic control are provided whenever the unregulated movement of vehicular traffic constitutes a hazard to employees;
- (b) that control devices are put into operation prior to the commencement of operations and shall be removed when the need for such protection has terminated. (EC225/91)

*Idem***50.3** The employer shall ensure signallers are employed

- (a) when construction work is being carried out in areas where employee safety is endangered by vehicle traffic;
- (b) where the roadway is normally a two-way operation and traffic is restricted to one-way traffic movement;
- (c) where any activity or obstruction exists on the shoulder or a portion of the roadway, which does not allow for the following clearances:
 - (i) 3 m per traffic lane for speeds up to 50 km/hr.,
 - (ii) 3.5 m per traffic lane for speeds over 50 km/hr. (EC225/91)

Qualifications

50.4 The employer shall ensure that signallers

- (a) are competent persons over the age of sixteen years who have been trained in, and have demonstrated an adequate knowledge of traffic control and signalling procedures;
- (b) have such training as the Director may require;
- (c) have a thorough knowledge of the regulations contained in this Part;
- (d) are in good physical and mental condition;
- (e) have adequate eyesight and hearing to carry out their duties;
- (f) hold a certificate of training and shall produce proof of training at the request of an officer. (EC225/91)

Use of Employee as
signaller**50.5** The use of an employee as a signaller if the employee does not possess the qualifications specified in Section 50.4 shall be deemed to constitute failure to use a signaller. (EC225/91)

Equipment

50.6 The employer shall ensure that a signaller is equipped with such protective health and safety equipment and clothing as is required to ensure the health and safety of the signaller at the signaller's workplace, including any required safety footwear, hard hat, safety vest, eye protection and rain wear. (EC225/91)

Use of Equipment

50.7 The signaller shall wear such protective health and safety equipment and clothing as is required to ensure the health and safety of the signaller at the signaller's workplace. (EC225/91)

50.8 (1) The employer shall ensure that signallers do not use head set receivers or other devices which may impair sight or hearing while signalling. Head Set Receivers

(2) A signaller shall not use head set receivers or other devices which may impair sight or hearing while signalling. (EC225/91) Idem

50.9 The employer shall provide signallers with a signaller's sign, octagonal in shape and mounted on a 1.7 m handle. (EC225/91) Sign

50.10 The employer shall ensure that, when signalling operations are required during the hours of darkness or conditions of poor visibility, all safety devices shall be reflectorized. (EC225/91) Reflectors

50.11 The employer shall, during the hours of darkness provide the signaller with a flashlight fitted with a red signalling baton. (EC225/91) Flashlight

50.12 The employer shall ensure that a signaller is located in a position providing adequate visibility and reaction time for the motorist. The distances are as set out in the following table: Visibility

Maximum Speed - km/hr	Sight Distance - (m)
90	180
80	150
70	120
60	90
50	70
40 or less	50

(EC225/91)

50.13 The employer shall ensure that a signaller stands far enough from the work areas. The required distances are as set out in the following table: Distance

Maximum Speed - km/hr	Distance from Work Area - (m)
90	110
80	80
70	60
60	40
50	30
40 or less	20

(EC225/91)

50.14 The employer shall ensure when the end of a one-lane section of roadway is not visible from the other end, the signaller shall maintain contact by means of radio or additional signallers. (EC225/91) Radio Contact

50.15 The following are the approved modes of signalling: Approved Modes of Signalling

(a) to stop traffic - The signaller shall stand facing traffic. The right arm shall be extended horizontally away from the body and the

signaller's sign shall be held perpendicular to the roadway in a stationary position, with the "STOP" side of the sign facing approaching drivers. The left hand shall be held with the palm up, in a stationary position and facing approaching drivers;

(b) to slow traffic - The signaller shall stand facing traffic. The right arm shall be extended horizontally away from the body and the signaller's sign shall be held perpendicular to the roadway in a stationary position, with the "MAXIMUM 40" or "SLOW" side of the sign facing approaching drivers. The left arm shall be held stationary at the signaller's side;

(c) to release traffic - The signaller shall stand parallel to the traffic movement. The right arm shall be extended horizontally away from the body and the signaller's sign shall be held perpendicular to the roadway in a stationary position, with the "MAXIMUM 40" or "SLOW" side of the sign facing approaching drivers. A forward motion shall be made with the left arm. (EC225/91)

Continuous Duty	50.16 The employer shall ensure that signallers do not depart from their point of duty until relieved. (EC225/91)
Signs Posted	50.17 The employer shall ensure that "Signaller Ahead" signs shall be posted in advance of each signaller's station. Such signs shall be removed promptly when the signalling operation terminates. (EC225/91)
Compliance	50.18 (1) The employer shall ensure that all regulations in this Part are complied with.
<i>Idem</i>	(2) A signaller shall comply with all regulations in this Part. (EC225/91)
Authority	50.19 These regulations and the Traffic Control Procedures for Roadwork Manual and any subsequent amendments as published by the P.E.I. Department of Transportation and Public Works shall govern all road, street construction and maintenance work. (EC225/91)

PART 51 GENERAL

Accident reports	51.1 The Workers' Compensation Board shall forward a copy of all accident reports to the Director. (EC180/87)
Report of explosions	51.2 A written report of all accidental explosions, whether or not anyone is injured, shall be forwarded to the Director. (EC180/87)
Application	51.3 These regulations do not apply to a workplace (a) where less than three persons are employed,

(b) located on property that qualifies for a farm assessment under the
Real Property Assessment Act R.S.P.E.I. 1988, Cap. R-4.
(EC180/87)