

SAFETY ACT
CONSOLIDATION OF GENERAL SAFETY REGULATIONS
R.R.N.W.T. 1990,c.S-1

(Current to: April 1, 2010)

AS AMENDED BY NORTHWEST TERRITORIES REGULATIONS:

R.R.N.W.T. 1990,c.S-1(Supp.)

In force September 15, 1992: SI-013-92

R-028-93

R-096-93

R-072-95

R-135-98

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R-021-2000

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Territorial Printer
Legislation Division
Department of Justice
Government of Nunavut
P.O. Box 1000, Station 550
Iqaluit, NU X0A 0H0

Tel.: (867) 975-6305
Fax: (867) 975-6189
Email: Territorial.Printer@gov.nu.ca

GLOSSARY OF TERMS USED IN CONSOLIDATIONS

Miscellaneous

c.	means "chapter".
CIF	means "comes into force".
NIF	means "not in force".
s.	means "section" or "sections", "subsection" or "subsections", "paragraph" or "paragraphs".
Sch.	means "schedule".

Citation of Acts

R.S.N.W.T. 1988,c.D-22	means Chapter D-22 of the <i>Revised Statutes of the Northwest Territories, 1988</i> .
R.S.N.W.T. 1988,c.10(Supp.)	means Chapter 10 of the Supplement to the <i>Revised Statutes of the Northwest Territories, 1988</i> . (<i>Note: The Supplement is in three volumes.</i>)
S.N.W.T. 1996,c.26	means Chapter 26 of the 1996 Annual Volume of the Statutes of the Northwest Territories.
S.Nu. 2002,c.14	means Chapter 14 of the 2002 Annual Volume of the Statutes of Nunavut.

Citation of Regulations and other Statutory Instruments

R.R.N.W.T. 1990,c.A-1	means Chapter A-1 of the <i>Revised Regulations of the Northwest Territories, 1990</i> .
R-005-98	means the regulation registered as R-005-98 in 1998. (<i>Note: This is a Northwest Territories regulation if it is made before April 1, 1999, and a Nunavut regulation if it is made on or after April 1, 1999 and before January 1, 2000.</i>)
R-012-2003	means the regulation registered as R-012-2003 in 2003. (<i>Note: This is a Nunavut regulation made on or after January 1, 2000.</i>)
SI-005-98	means the instrument registered as SI-005-98 in 1998. (<i>Note: This is a Northwest Territories statutory instrument if it is made before April 1, 1999, and a Nunavut statutory instrument if it is made on or after April 1, 1999 and before January 1, 2000.</i>)
SI-012-2003	means the instrument registered as SI-012-2003 in 2003. (<i>Note: This is a Nunavut statutory instrument made on or after January 1, 2000.</i>)

GENERAL SAFETY REGULATIONS

INTERPRETATION

1. (1) In these regulations,

"Act" means the *Safety Act*; (*Loi*)

"approved" means approved by the Chief Safety Officer or by a testing agency acceptable to the Chief Safety Officer; (*approuvé*)

"confined space" means a bin, pipeline, pit, sewer, silo, tank, tunnel, utilities vault, vat, vessel or other enclosed or partially enclosed space having restricted access and egress and which, owing to its design, construction, location, atmosphere, the materials or substances in it or other conditions, is or may become immediately dangerous to the life or health of a worker required to enter it; (*espace restreint*)

"construction site" means a work site where a building or structure is being erected, altered, repaired, wired, fitted with pipes, painted, dismantled or demolished, or a work site where land is being cleared, graded, excavated, trenched, drilled or blasted, or covered with tarmac or cement; (*chantier de construction*)

"contaminant" means any gas, fumes, smoke, vapour, dust or other substance in a work site that is in a concentration in excess of the occupational exposure limits set out in Tables 2 and 3 of Schedule A; (*polluant*)

"domestic help" means household help, babysitters and casual labourers employed by private citizens; (*aide domestique*)

"dressing station" means a room or part of a room set aside for the storage of first aid supplies and the treatment of workers; (*poste de premiers soins*)

"first aid attendant" means a person who holds a current certificate of qualification in advanced first aid issued by the Priory of Canada of the Most Venerable Order of the Hospital of Saint John of Jerusalem, commonly known as St. John Ambulance, or an equivalent certificate of qualification acceptable to the Chief Safety Officer; (*préposé aux premiers soins*)

"first aider" means a person who holds a certificate of qualification in standard first aid issued by the Priory of Canada of the Most Venerable Order of the Hospital of Saint John of Jerusalem, or an equivalent certificate of qualification acceptable to the Chief Safety Officer; (*secouriste*)

"first aid kit" means an approved container with approved first aid supplies; (*trousse de premiers soins*)

"general ventilation" means the removal by mechanical means of gas, vapour, mist, fumes, smoke or dust from a general area and replacement with fresh air; (*ventilation générale*)

"guardrail" means a secure and substantial structure, consisting of both a horizontal top rail and an intermediate rail, that is erected at or near the edge of a floor or platform or around an opening or excavation to prevent a person from falling over the edge; (*garde-corps*)

"handrail" means a secure and substantial railing on a stairway; (*main courante*)

"inert dust" or "nuisance dust" means dust or particles that occur in a working environment that ordinarily produce no specific effects with prolonged inhalation; (*poussière inerte*)

"local ventilation" means the removal by mechanical means of gas, vapour, mist, fumes, smoke or dust at their source of origin; (*ventilation locale*)

"locked out" means a condition that prevents movement of control devices to the "operating" or "on" position; (*verrouillé*)

"lockout device" means a mechanism or arrangement that will hold and maintain a control device in an inoperable or "off" position; (*dispositif de verrouillage*)

"logging site" means a work site where a logging operation is in progress; (*chantier d'abattage*)

"nurse" means a person who holds a subsisting certificate of registration issued under the *Nursing Profession Act*; (*infirmière*)

"personal protective equipment" means clothing, a device or other article required to be worn or used by a worker to prevent injury; (*accessoires protecteurs*)

"point of operation" means that point at which cutting, shaping, boring or forming is accomplished on material; (*point d'intervention*)

"powered mobile equipment" means a self-propelled device that is designed to carry, push, pull, lift or stack material or provide an approved working platform for personnel; (*matériel mobile motorisé*)

"professional engineer" means a person who is a member or licence holder in good standing of the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories; (*ingénieur*)

"project" means a structure that is being constructed, repaired, altered, demolished or removed and includes a trench or excavation that is being dug or backfilled and a street or

highway that is being built, altered, paved or demolished and includes work being carried on in an area where so designated by the Chief Safety Officer; (*ouvrage*)

"settlement" means a community and includes a temporary or permanent camp; (*collectivité*)

"standard height" means, for general ventilation purposes, a height of 3.7 m (12 ft.) when computing the volume of a work place for the required number of air changes each hour except in

- (a) operations where workers may be engaged in or on towers, platforms, mezzanine floors or overhead cranes that are not provided with a separate ventilating system, and
- (b) paint spray and sandblasting rooms where the actual height of the room shall be used for calculation of the required air flow rate; (*hauteur standard*)

"structure" means any building, plant, machinery, equipment, storage tank, storage place or fixture erected or placed on, in, over or under an area of land or water; (*structure*)

"supervisor" means a worker who has one or more workers under his or her control or supervision. (*superviseur*)

(2) Except as otherwise provided, words and expressions used in these regulations have the meanings commonly ascribed to them by the industries to which these regulations apply. R-028-93,s.2.

PART I

APPLICATION

2. These regulations do not apply to
 - (a) a mine within the meaning of the *Mine Health and Safety Act*; or
 - (b) employers employing domestic help. R-021-2000,s.2.

ACCIDENT PREVENTION

Organization

3. Subject to section 4, an employer shall
 - (a) initiate an accident prevention program and direct effective ways and means of preventing work injuries including the promotion of relations between management and the employees that will encourage attitudes and desires favourable to an accident-free operation;

- (b) encourage the participation of his or her employees in the implementation of accident prevention measures;
- (c) organize accident prevention committees;
- (d) maintain a record of accidents and injuries including the causes of the accidents and the action taken to prevent similar incidents;
- (e) conduct regular inspections of structures and places of employment and review work practices at intervals that will ensure that safe working conditions are maintained;
- (f) correct any condition that constitutes a hazard to workers and ensure that no person other than those workers necessary to correct the condition could be exposed to the hazard;
- (g) maintain records and statistics, including inspections and accident investigations, sufficient to indicate the effectiveness of the accident prevention program; and
- (h) initiate the prompt investigation of every accident to determine the action necessary to prevent a recurrence.

Program

- 4.** An accident prevention program shall be initiated and maintained by an employer with 10 or more workers in one area or settlement.
- 5.** Where the work force at a place of employment includes workers of more than one employer, each employer is responsible for the accident prevention program for his or her employees.
- 6.** Where there is an overlapping of the work areas of two or more employers, the principal contractor or, if there is no principal contractor, the owner of the project shall establish and ensure the continuing function of a management group to co-ordinate the accident prevention activities of the several employers, and each employer shall be represented in and shall co-operate with the management group.
- 7.** An accident prevention committee shall assist the employer in creating a safe place to work and recommend to the employer actions directed at improving the effectiveness of the accident prevention program.
- 8.** An employer with fewer than 10 employees shall arrange for discussion with the employees of accident prevention matters at least once every six months and shall record the times of those discussions.

Instruction to Workers

- 9.** An employer shall ensure the adequate instruction of each worker in the safe performance of his or her duties.

10. A supervisor is responsible for the proper instruction of workers under his or her direction and control and for ensuring that their work is performed without undue risk.

Equipment and Work Processes

11. No person shall operate machinery or equipment unless authorized by his or her employer to do so after having been adequately instructed and trained and after having demonstrated to the employer or the representative of the employer an ability to operate the machinery or equipment safely.

12. A person responsible for putting equipment into operation shall, before doing so, ensure that guards are in place and that putting the equipment into operation will not endanger any person.

Improper Conduct

13. (1) No person shall engage in improper activity or behaviour that might create or constitute a hazard to any person.

(2) For the purpose of subsection (1), "improper activity or behaviour" includes "horseplay", scuffling, fighting, practical jokes, unnecessary running or jumping and similar conduct. R-028-93,s.3.

Persons Working Alone

14. Where a worker is employed under conditions where he or she, if injured, might not be able to secure assistance, the employer shall provide a means of checking the well-being of that worker at intervals that, under the circumstances, provide adequate protection.

Impaired Persons

15. No person with a physical or mental impairment shall be assigned to work where the impairment could endanger the worker or another person.

16. No person shall enter or remain on the premises of a place of employment while under the influence of intoxicating beverages or drugs if he or she creates a nuisance or if his or her abilities are impaired so as to endanger any person.

Entry and Exit from Work Areas

17. A work place must have a safe means of entry and exit appropriate to the conditions of the work area, in accordance with the latest edition of the *National Building Code of Canada* and the *National Fire Code of Canada*.

Illumination

18. A working area shall be provided with the appropriate level of illumination recommended by the current standard of the Canadian Standards Association and the current bulletins of the Illuminating Engineering Society of North America.
R-028-93,s.4.

19. (1) Notwithstanding section 18, in the following types of work areas the minimum levels of illumination must be

- (a) areas where tasks are performed that require close and prolonged attention - 1076.3 lx (100 foot-candles);
- (b) file rooms, not including desk areas - 322.89 lx (30 foot-candles);
- (c) areas where typing and general desk work is done - 645.78 lx (60 foot-candles);
- (d) warehouse and transfer areas where packages are checked and sorted - 322.89 lx (30 foot-candles);
- (e) stairways, elevators, corridors, aisles and loading docks - 107.63 lx (10 foot-candles);
- (f) areas in a workshop or garage where benchwork or machine work is performed - 538.15 lx (50 foot-candles);
- (g) areas of workshops used for repair and maintenance of equipment - 322.89 lx (30 foot-candles);
- (h) areas where workers are required to read instruments and gauges and where an error may endanger the safety of the worker or any person - 861.04 lx (80 foot-candles); and
- (i) first aid rooms
 - (i) at any part of the body of an injured person - 1076.3 lx (100 foot-candles), and
 - (ii) general work areas - 538.15 lx (50 foot-candles).

(2) Emergency lighting must be provided in places of employment that are normally used during periods of darkness or that do not have an available source of natural light.

(3) Emergency lighting must provide a minimum level of 10.763 lx (1 foot-candle) at exits from the place of employment.

(4) Where emergency lighting is required it must be from a power source independent of that for the general lighting or shall be controlled by an automatic device that will operate reliably to switch the circuit to an independent secondary power source in the event of failure of the primary power source.

Restricted Visibility

20. No person shall work where the visibility in the work area is restricted by the presence of smoke, steam or other substances in the atmosphere to the extent that it might result in injury to the worker.

21. Open flames, steam pipes, steam or hot water jets and other high temperature sources shall be positioned or shielded to prevent contact by a person, unless the exposed sources are necessary to the work process.

22. Where heat sources mentioned in section 21 are necessarily unshielded, persons shall wear personal protective equipment in accordance with these regulations.

Housekeeping

23. A floor, platform, stair and walkway used by workers shall be maintained in a state of good repair and shall be kept free of hazards.

24. Where work processes result in the spillage of liquids on the floor of a work area and where the spillage could create a slipping or other hazard, floor drains shall be installed or other suitable means shall be adopted to control the hazard.

25. No person shall allow refuse or waste material to accumulate so as to constitute a hazard.

26. (1) No person shall use compressed air or steam for blowing dust, chips or other substances from equipment, materials or structures if a person could be exposed to the jet or the material expelled or propelled by the jet.

(2) No person shall use compressed air for blowing dust or other substances from clothing being worn by workers unless

- (a) it is in an area designated for that purpose;
- (b) the air supply is limited to a pressure not greater than 68.9 kPa (10 P.S.I.); and
- (c) appropriate protection is worn.

27. Material or equipment must be so placed, stored or stacked so as not to constitute a hazard to workers.

28. Stacked materials or containers must be stabilized where necessary by interlocking strapping or other effective means of restraint.

29. An area in which materials may be dropped, dumped or spilled must be barricaded and designated by warning signs to prevent the inadvertent entry of a person.

Noise Hazards

30. Where a worker is required to work in a noisy area the employer shall take appropriate measures to suppress the noise, but if it is not reasonably practicable to decrease the noise nor isolate the worker from the noise, the worker shall wear personal protective equipment that will protect him or her from the harmful effects of the noise.

31. (1) An employer shall take reasonable measures to ensure that noise levels at a work site do not exceed the occupational exposure limits set out in Table 1 of Schedule A.

(2) Where noise levels at a work site exceed the limits referred to in subsection (1), an employer shall provide to each worker hearing protective equipment that complies with the Canadian Standards Association Standard Z94.2-94, *Hearing Protectors*, as amended from time to time, and no person shall work where such noise levels exist without wearing that protective equipment. R-028-93,s.5; R-135-98,s.2.

Radiation Hazards

32. Each employer and worker concerned with the use, storage, handling, transportation or disposal of radioactive substances shall comply with the *Atomic Energy Control Regulations* (Canada) and a regulation that may be made by the Workers' Compensation Board.

33. Equipment capable of producing x-rays, ultraviolet or infrared radiation, laser beams or microwaves must be arranged or shielded so that no person is exposed to harmful effects of radiation, or such persons shall be provided with suitable equipment to prevent injury from exposure.

34. Only properly qualified personnel shall be permitted to operate radiation producing machines or handle radioactive material where there is danger of radiation being injurious to a person.

Reporting of Accidents

- 35.** (1) In this section, "accident of a serious nature" includes,
- (a) a major structural failure or collapse of a building, bridge, tower, crane, structure, scaffold, temporary construction support system or excavation;
 - (b) an uncontrolled spill or escape of a toxic or hazardous substance;
 - (c) an accidental contact with an energized electrical conductor;
 - (d) a premature or accidental detonation of explosives;
 - (e) a concussion, major blood loss, serious fracture, unconsciousness or amputation; and
 - (f) an incident involving heavy equipment.

(2) An employer shall immediately report to the Chief Safety Officer an accident resulting in the death of any employee occurring at the place of employment.

(3) An employer shall report to the Chief Safety Officer an accident of a serious nature involving any employee occurring at the place of employment, within 24 hours of the accident. R-028-93,s.6; R-021-2000,s.3.

Confined Spaces

- 36.** (1) Subject to the other provisions of this section, before a worker enters a confined space, the employer shall ensure that
- (a) the confined space is ventilated sufficiently to maintain an oxygen content of at least 18% by volume under normal atmospheric pressure and to prevent the accumulation of contaminants;
 - (b) pipes and other supply lines in or leading to the confined space, whose contents are likely to create a hazard, are blanked or blinded off; and
 - (c) mechanical equipment installed in the confined space is disconnected from its power source and locked out.

(2) Subject to subsection (6), where it is not reasonably practicable for an employer to ventilate in accordance with paragraph (1)(a), the employer shall ensure that air quality tests are carried out by a competent person

- (a) before a worker enters a confined space, and
- (b) while a worker is in the confined space,

to ensure that the confined space is ventilated sufficiently to maintain an oxygen content of at least 18% by volume under normal atmospheric pressure and to prevent the accumulation of contaminants.

(3) Equipment used to conduct air quality tests under subsection (2) must be stored and maintained according to the instructions of the manufacturer.

(4) Where it is not reasonably practicable for an employer to meet the conditions specified in paragraph (1)(b), the employer shall develop and implement alternate procedures that will provide equal or greater protection to workers.

(5) An employer shall ensure that no worker enters or remains in a confined space unless

- (a) the worker is using a body harness, lanyard and lifeline; and
- (b) electrical equipment that the worker uses or plans to use in the confined space is of a type designed for use in a confined space.

(6) Where the atmosphere in a confined space

- (a) contains contaminants, or
- (b) has an oxygen content of less than 18% by volume under normal atmospheric pressure,

an employer shall ensure that no worker enters or remains in the confined space unless

- (c) the worker wears respiratory protective equipment in accordance with section 55;
- (d) the worker is attended by and in communication with another worker stationed at or near the entrance to the confined space;
- (e) rescue procedures to enable the removal of the worker who has entered the confined space are in place;
- (f) the worker is using a body harness, lanyard and lifeline;
- (g) rescue equipment capable of effecting a rescue is available for immediate use; and
- (h) a person who is the holder of a standard first aid certificate is in attendance.

37. (1) Where a worker works in a confined space, the employer shall develop a written code of practice for entry to and work in confined spaces containing

- (a) a means of clearly identifying confined spaces at the work site;
- (b) the qualifications and training for workers who may be required to enter or work in a confined space;
- (c) the means, if any, of blanking or blinding pipes and other supply lines in, or leading to, the confined space;
- (d) the means, if any, of ventilating the confined space;
- (e) the tests or measurements that will be taken to determine the presence of contaminants or oxygen deficiencies;
- (f) information on the availability and proper use of respiratory protective equipment;
- (g) rescue procedures and a list of rescue equipment;
- (h) identification of other hazards that may be present in the confined space and may affect the safety of workers; and
- (i) the requirement, if any, for the issuance of a work permit to enter the confined space.

(2) The employer shall submit the code of practice to the Chief Safety Officer before any worker enters a confined space.

PART II

PERSONAL PROTECTIVE EQUIPMENT

General

38. (1) An employer shall ensure that the personal protective equipment required under these regulations is worn or used by the worker and is maintained in good working order and in a sanitary condition.

(2) A worker shall wear or use personal protective equipment required under these regulations and shall maintain the personal protective equipment in good working order and in a sanitary condition.

(3) Where personal protective equipment that an employer is required to provide to a worker is or becomes defective or does not provide the required protection, the worker shall return the personal protective equipment to the employer.

(4) An employer shall immediately replace or repair personal protective equipment returned under subsection (3).

39. (1) An employer shall ensure that the clothing worn by a worker shall not expose the worker to an unnecessary or avoidable hazard.

(2) Where a worker is exposed to hazard from moving parts of machinery or where the work process involves a similar hazard, the employer shall ensure that

- (a) the clothing of the worker fits closely about the body;
- (b) no dangling or protruding neckwear, bracelets, wristwatches, rings or similar articles are worn; and
- (c) cranial and facial hair is completely confined or cut short.

40. An employer shall ensure that a worker exposed to hazard from moving vehicles wears clothing made of or fitted with reflective, fluorescent or other highly visible materials unless equally effective means of protection are provided to and used by the worker.

Footwear

41. An employer shall ensure that a worker uses footwear appropriate to the hazards associated with the work site.

42. An employer shall ensure that a worker uses footwear that complies with Canadian Standards Association Standard CAN/CSA-Z195-M92, *Protective Footwear*, as amended from time to time, at any

- (a) construction site;
- (b) logging site; or
- (c) work site where there is a risk of injury to the feet from
 - (i) crushing, cutting, penetration, burning or other similar hazard, or
 - (ii) exposure to hot, corrosive, poisonous or other dangerous substances.

R-135-98,s.3.

Headgear

43. (1) An employer shall ensure that protective headgear is provided to and worn by a worker at any

- (a) logging site; or
- (b) work site where there is a potential hazard from falling, flying, or moving objects or from structures and equipment that can come into contact with the head of a worker as a result of the movement of the worker.

(2) An employer shall ensure that a worker at a logging site is provided with and wears protective headgear that is red or fluorescent orange in colour.

44. (1) An employer shall ensure that a worker exposed to electrical hazards is provided with and wears non-conductive protective headgear of sufficient dielectric capacity to protect the worker.

(2) An employer shall ensure that a worker exposed to cold wears suitable liners for protective headgear required by these regulations.

45. An employer shall ensure that all protective headgear complies with the Canadian Standards Association Standard CAN/CSA-Z94.1-92, *Industrial Protective Headwear*, as amended from time to time. R-135-98,s.4.

Hand Protection

46. An employer shall ensure that a worker handling materials likely to puncture, cut, abrade, burn or freeze the hands uses gloves or other personal protective equipment adequate to prevent injuries unless the use of such equipment introduces a greater hazard.

47. An employer shall ensure that a worker handling or exposed to acids, caustics, steam, abrasives, poisons, hot fluids or other harmful substances is provided with and uses gloves or other personal protective equipment adequate to prevent injuries.

Eye Protection

48. (1) An employer shall ensure that properly fitting and adequate goggles, face shields, or other eye protective equipment are provided to and used by a worker who

- (a) is exposed to or handles any material, chemical or gas that is likely to injure or irritate the eyes; or
- (b) is exposed to hazard from flying objects or particles, intense light or heat.

(2) An employer shall ensure that eye protective equipment complies with the Canadian Standards Association Standard CAN/CSA-Z94.3-92, *Industrial Eye and Face Protectors*, as amended from time to time. R-135-98,s.5.

49. An employer shall ensure that a worker does not engage in electric arc welding if another worker may be exposed to radiation from the arc, unless the other worker is wearing adequate eye protective equipment or is protected from the radiation by an adequate screen.

50. An employer shall maintain and immediately provide eyebaths, showers or other means of flushing the eyes of a worker whose eyes have come into contact with a substance potentially injurious to the eyes.

Flotation

51. (1) An employer shall ensure that a worker exposed to the risk of drowning is provided with and uses a flotation device having a buoyant effect sufficient to maintain the head above water without effort by the worker.

(2) The device referred to in subsection (1) must not be dependent on manual manipulation to produce the required buoyant effect.

Ventilation

52. Where at a work site, other than a confined space, work processes produce or are likely to produce a health hazard to workers from the production or dissemination of contaminants or from oxygen deficiency in the air, the employer shall

- (a) ensure the work site is ventilated sufficiently to maintain an oxygen content of at least 18% by volume under normal atmospheric pressure and to prevent the accumulation of contaminants; or
- (b) where it is not reasonably practicable for the employer to comply with paragraph (a) or where a situation arises for which the ventilation system is not adequate, ensure the workers wear respiratory protective equipment in accordance with section 55.

53. (1) The following factors must be taken into consideration in determining whether a ventilation system provides adequate protection to workers:

- (a) the occupational exposure limits;
- (b) the physical, chemical and toxicological properties of the contaminants;
- (c) the flammability and explosivity of the contaminants;
- (d) the sources and concentration of the contaminants;
- (e) the location of workers relative to the sources of contamination;
- (f) the oxygen content of the air; and
- (g) the duration of the exposure of workers.

(2) An employer shall ensure that a ventilation system is designed, constructed and installed to take into account each factor specified in subsection (1) to provide adequate protection to workers.

- 54.** An employer shall ensure that where a recirculating air system is used to control contaminants,
- (a) the ventilation system is maintained in good working order; and
 - (b) the concentration of any gas, fumes, smoke, vapour, dust or other substance in the air discharged from the recirculating system into a work site
 - (i) does not exceed 10% of its occupational exposure limits, and
 - (ii) does not increase the concentration of the gas, fumes, smoke, vapour, dust or other substance within the work site by more than 10% of the concentration normally prevailing when the system is not in use and the gas, fumes, smoke, vapour, dust or other substance is not being produced.

Respiratory Protection

- 55.** (1) Where a worker is required to wear respiratory protective equipment under these regulations, the employer shall provide and the worker shall wear respiratory protective equipment appropriate to the circumstances.
- (2) An employer shall ensure that respiratory protective equipment required by these regulations complies with the Canadian Standards Association Standard CAN/CSA Z94.4-93, *Selection, Use, and Care of Respirators*, as amended from time to time.
- (3) Where a worker is or is likely to be exposed to an atmosphere immediately dangerous to life or health because of a reduced oxygen content of the air or because of acute toxic effects caused by contaminants
- (a) the employer shall provide and the worker shall wear an air line with a 5-minute escape bottle or a positive-pressure breathing apparatus that may be self-contained; and
 - (b) the worker must be attended by another worker at or near the dangerous area who must
 - (i) wear equipment as specified in paragraph (a), and
 - (ii) be equipped and trained to effect an immediate rescue.
- (4) An employer shall ensure that
- (a) a self-contained breathing apparatus or a supplied-air respirator complies with Canadian Standards Association Standard CAN3-Z180.1-M85, *Compressed Breathing Air and Systems*, as amended from time to time; and
 - (b) a self-contained breathing apparatus is equipped with an audible alarm that sounds when the air or oxygen supply has diminished to 20% of the capacity of the unit or to a five-minute reserve, whichever is the greater.

(5) Where normal operating conditions do not require respiratory protective equipment but emergency conditions may occur requiring a worker to escape from the work site, the employer may permit a worker to wear a mouthbit and nose-clamp respirator if

- (a) the respirator will be used only for emergency escape purposes;
- (b) the respirator is designed to provide protection against the specific contaminants present; and
- (c) the oxygen content in the work site will be at least 18% by volume under normal atmospheric pressure.

R-135-98,s.6.

56. Where a worker is required to wear respiratory equipment, hair on the scalp or face that may prevent effective sealing of the face piece to the facial skin shall be removed.

Safety-belts, Body Harnesses, Lanyards and Lifelines

57. (1) A worker shall wear a lanyard, lifeline and safety-belt or body harness where that worker is working

- (a) at an elevation of 3 m (10 ft.) or more above grade or floor level,
- (b) over a pit, a shaft, or operating machinery, or
- (c) where a fall could result in his or her drowning,

and where it is impracticable to provide adequate work platforms or guarding.

(2) An employer shall provide a separate lanyard, lifeline and safety-belt or body harness to each worker to whom the conditions specified in subsection (1) apply.

(3) Subsection (1) does not apply

- (a) to structural steel erectors or similar tradespersons who are experienced at working at heights and where the use of a safety-belt, body harness, lanyard or lifeline may produce an additional hazard; or
- (b) where a protection approved by the Chief Safety Officer or a safety net has been provided.

58. An employer shall ensure that

- (a) safety-belts, body harnesses and lanyards used by a worker comply with the following standards, as amended from time to time, of the Canadian Standards Association:
 - (i) CAN/CSA-Z259.1-95, *Safety Belts and Lanyards*;
 - (ii) Z259.2-M1979, *Fall-Arresting Devices, Personnel Lowering Devices, and Life Lines*;
 - (iii) CAN/CSA-Z259.10-M90, *Full Body Harness*;
 - (iv) CAN/CSA-Z259.11-M92, *Shock Absorbers for Personal Fall Arrest Systems*;

- (b) a lifeline or lanyard is protected by padding where it passes over sharp edges;
 - (c) a lifeline is
 - (i) free of knots or splices except at its terminals,
 - (ii) not attached to the same anchor points as the suspension lines of a work platform, and
 - (iii) attached to a fixed anchor capable of supporting twice the shock load that may be applied;
 - (d) a safety-belt, body harness, lanyard or lifeline is assembled and used in a manner that will limit the free fall of a worker to 1.25 m (4.1 ft.);
 - (e) metal parts of, or hardware attached to, a safety-belt, body harness, lanyard or lifeline are of drawn, rolled or forged metal with a load arresting capacity of not less than 17.8 kN (4,000 lbf);
 - (f) a protective thimble is used to connect ropes or straps to eyes or rings used in a safety-belt, body harness, lanyard or lifeline; and
 - (g) safety-belts, body harnesses, lanyards and lifelines must be
 - (i) protected from heat, flame, abrasion and corrosive materials during storage, and
 - (ii) carefully inspected before use and any defective part removed from service.
- 59.** A worker shall ensure that
- (a) subject to this section, where he or she is using tools that may sever, abrade or burn a lifeline, he or she uses wire rope or wire-corded fibre rope;
 - (b) where he or she is working near energized electrical circuits where a conductive lifeline cannot be used, he or she uses two non-conductive lifelines; and
 - (c) where he or she is working on a communications or power transmission tower he or she
 - (i) uses a lanyard and safety-belt or body harness, and
 - (ii) is secured to the tower when working or resting.

PART III

FIRST AID SERVICE REQUIREMENTS

Application

- 60.** This Part does not apply to hospitals, nursing stations or medical clinics.

Responsibility of Employer

61. (1) Unless specifically exempted in writing by the Chief Safety Officer, an employer shall, at his or her own expense, provide the first aid services and equipment required by these regulations.

(2) The Chief Safety Officer may, where he or she considers it necessary owing to the nature and location of a project or the distance from a hospital or fixed facility for medical care, direct an employer to provide such additional first aid services as the Chief Safety Officer considers necessary.

Responsibility of the Worker

62. A worker shall, immediately on sustaining an injury, use the first aid services and equipment provided by the employer.

General Requirements

63. (1) An employer shall ensure that

- (a) the first aid services and equipment of the employer are readily accessible and available to workers during working hours; and
- (b) first aid supplies and equipment are kept clean and dry at all times.

64. An employer shall post signs at conspicuous places in the working areas to show the location of the first aid services and equipment and stating the necessity of reporting promptly injuries and of receiving first aid.

65. (1) Where a worker is injured the employer shall complete an accident report stating the name of the worker, the date and time of the injury, the date and time the worker reported for treatment, the names of witnesses, a brief description of the injury and a description of the treatment rendered, and the report shall be signed by the employer and the first aider or first aid attendant who treated the worker.

(2) An accident report under subsection (1) shall be submitted within one month of the injury to the Chief Safety Officer.

(3) An employer shall maintain a permanent record of injuries sustained by the workers and the record shall set out the information required under subsection (1).

66. (1) A first aid room or dressing station must be located as near as possible or practical to the work area it is to serve and must

- (a) be on the ground floor level unless otherwise approved by the Chief Safety Officer;
- (b) have a non-porous floor capable of being easily cleaned;
- (c) be kept clean and sanitary;

- (d) be used for no other purpose than to administer first aid or other health care;
- (e) have a means of communication with the area it is to serve; and
- (f) have a ready means of access for stretcher patients including at least one door 107 cm wide (42 in.).

(2) Where a first aid room is located more than one hour's travel time from a hospital or nursing station it must contain the necessary equipment to provide overnight care for two injured workers.

First Aid Kits

67. The following first aid services and equipment are required for operations within 20 minutes of fixed medical services:

- (a) where 15 or less workers are actively employed at one time at a place of employment - at least one N.W.T. No. 1 first aid kit;
- (b) where more than 15 but fewer than 75 workers are actively employed at one time at a place of employment - at least one N.W.T. No. 2 first aid kit;
- (c) where 75 or more workers are actively employed at one time at a place of employment - at least two N.W.T. No. 2 first aid kits.

68. The following first aid services and equipment are required for operations more than 20 minutes from fixed medical services:

- (a) where five or less workers are actively employed at one time at a place of employment - at least one N.W.T. No. 1 first aid kit;
- (b) where more than five but fewer than 20 workers are actively employed at one time at a place of employment - at least one N.W.T. No. 2 first aid kit;
- (c) where at least 20 but fewer than 50 workers are actively employed at one time at a place of employment - at least one N.W.T. No. 3 first aid kit;
- (d) where 50 or more workers are actively employed at one time at a place of employment - at least one N.W.T. No. 3 first aid kit with an increase in supply of dressings and bandages in proportion to the number of workers in excess of 50.

69. The first aid kits referred to in sections 67, 68 and 79 shall be stored in a weather-proof container and shall contain, at a minimum, the equipment and supplies set out in Schedule F. R.R.N.W.T. 1990,c.S-1(Supp.),s.2.

First Aiders

70. (1) The following qualified first aid personnel are required for operations within 20 minutes of fixed medical services:

- (a) where more than five but fewer than 10 workers are actively employed at one time at a place of employment, at least one worker on each shift shall have the qualifications gained through successful completion of a first aid multi-media course;
- (b) where more than nine but fewer than 20 workers are actively employed at one time at a place of employment, at least one worker on each shift who holds a standard first aid certificate;
- (c) where more than 19 but fewer than 50 workers are actively employed at one time at a place of employment, at least two workers on each shift who hold standard first aid certificates;
- (d) where more than 50 workers are actively employed at one time at a place of employment, for each additional 10 workers in excess of 50, in addition to those first aid personnel mentioned in paragraph (c), one worker on each shift who holds a standard first aid certificate.

(2) Notwithstanding subsection (1), multi-media first aid courses are sufficient for employment areas such as offices, schools and stores.

71. The following qualified personnel are required for operations more than 20 minutes from fixed medical services:

- (a) where more than three but fewer than 10 workers are actively employed at one time at a place of employment, at least one employee who holds a standard first aid certificate;
- (b) where more than nine but fewer than 20 workers are actively employed at one time at a place of employment, at least two workers who hold standard first aid certificates;
- (c) where more than 19 but fewer than 75 workers are actively employed at one time at a place of employment, for each additional 15 workers in excess of 19, in addition to those first aid personnel mentioned in paragraph (b), one worker on each shift who holds a standard first aid certificate, and a dressing station shall be provided;
- (d) where 75 or more workers are actively employed at one time at a place of employment, in addition to the first aid personnel mentioned in paragraph (c), at least one employee on each shift who holds an advanced first aid certificate, and who shall be known as a first aid attendant, and a first aid room shall be provided.

72. A first aid room must be not less than 2.44 m by 3.66 m (8 ft. by 12 ft.) in size and must

- (a) be heated and ventilated;
- (b) be supplied with hot and cold water;
- (c) have a stainless steel sink, storage cabinet and a cot; and
- (d) be equipped with the following first aid supplies:
 - 1 treatment chair,
 - 1 eye lamp,
 - 1 nylon optic loop,
 - 1 bed complete with mattress, sheets, blankets, pillows,
 - 1 refuse pail complete with cover,
 - 1 electric hot water kettle,
 - 1 stainless steel wash basin,
 - 1 sterilizer with cold solution,
 - 2 hot water bottles,
 - 12 packages of paper towels,
 - 1 oxygen therapy unit,
 - 1 breathing bag with oxygen intake,
 - 2 plastic airways, 1 standard and 1 small,
 - 2-10.16 cm by 20.32 cm (4 in. by 8 in.) sandbags,
 - 1 pair of bandage scissors,
 - 1 pair of dressing forceps,
 - 1 scalpel with interchangeable blades,
 - 1 covered instrument tray,
 - 2-227 ml (8 oz.) containers of non-flammable solvent,
 - 1 package of baking soda,
 - 1-227 ml (8 oz.) container of vinegar,
 - 1-4.55 l (1 gal.) container of antiseptic hand cleaner,
 - 3 eye droppers,
 - 1 thermos bottle,
 - 1 white cotton bedsheet, individually wrapped,
 - 2 white cotton pillow cases, individually wrapped,
 - 1 No. 2 first aid kit to take out,
 - 1 thermometer,
 - 1 bi-focal, 12.7 cm (5 in.) focus magnifier complete with headstrap,
 - 1 nail brush,
 - 6-14.2 g (0.5 oz.) containers of ophthalmic ointment,
 - 2-227 ml (8 oz.) containers of calamine lotion,
 - 1-907 g (2 lb.) package of salt,
 - 1 artery forceps,
 - medicines as prescribed by a medical practitioner for use in isolated areas.

First Aid Attendants

73. The duties of a first aid attendant shall be such that he or she is always immediately available to render first aid should the need arise.

74. (1) A first aid attendant has absolute charge of first aid treatment of an injured worker including appropriate care and attention until medical aid is available, and no decision of a first aid attendant relating to first aid and the need for medical attention shall be overruled by a person other than a medical practitioner.

(2) An employer who discharges a first aid attendant because of a decision made under subsection (1) is, if the decision is considered by a medical practitioner to have been reasonable under the circumstances, guilty of an offence.

75. (1) An employer shall require a first aid attendant employed by him or her to deliver a certificate of qualification to the person in charge of the operation at which he or she is employed and shall not be permitted to commence his or her duties until the certificate has been delivered.

(2) Where practical, the certificate mentioned in subsection (1) must be posted in a conspicuous place in the first aid room.

(3) On termination of employment the employer shall return the certificate to the first aid attendant.

76. Where, in the opinion of the Chief Safety Officer, a first aid attendant is not performing his or her duties in a satisfactory manner, the Chief Safety Officer may cancel or suspend the first aid attendant's certificate of qualification.

Transportation of Injured Workers

77. (1) An employer shall, at his or her own expense, furnish to a worker injured in his or her place of employment, when necessary, immediate conveyance and transportation to a hospital, medical practitioner or nursing station for initial treatment.

(2) The means of transportation required for the purpose of subsection (1) must be available at the nearest point of access to the work site.

(3) Where air transportation is used, stretchers suitable for use in aircraft must be provided by the employer.

(4) Where the Chief Safety Officer considers it necessary, a suitable transportation vehicle under the direction of a first aid attendant or other first aid personnel must be kept available at the place of employment during the time the workers are at work.

(5) No person shall use the vehicle referred to in subsection (4) for a purpose that may impede the treatment or transportation of injured workers.

78. Where an injured worker is required to be transported by stretcher in a vehicle, he or she shall be accompanied by a first aid attendant or other first aid person who is not the driver of the vehicle.

79. A conveyance used by and under the control of an employer for the purpose of transporting workers to and from work sites must be equipped with a first aid kit determined by the seating capacity of the vehicle in accordance with the following:

- (a) seating capacity of one to five persons, N.W.T. No. 1 first aid kit;
- (b) seating capacity of six or more persons, N.W.T. No. 2 first aid kit.

PART IV

OFFICE SAFETY

Employer's Responsibilities

- 80.** An employer shall ensure that
- (a) linoleum and other polished floor surfaces are treated with a non-slip preparation;
 - (b) rugs are maintained in good order and that torn or damaged floor coverings are removed or repaired immediately;
 - (c) entrance steps and stairs to buildings are free of ice and snow at all times;
 - (d) stairways are equipped with anti-slip treads and suitable handrails and are kept clean and dry;
 - (e) differences of floor elevation in aisles and corridors are clearly marked;
 - (f) power and telephone outlets, wires and extension cords are not located where they will cause a tripping hazard;
 - (g) step ladders or stands provided with non-slip feet or treads are available to personnel when high files or high equipment is being used; and
 - (h) materials are not placed on the floor where tripping may result.

Work Areas

81. Working space and office equipment must be so arranged that fire codes are not violated and exits are easily accessible.

82. Floors must be adequate to carry the load and file cabinets must be placed so as to distribute the weight properly.

- 83.** Furniture must be maintained in good repair and no chipped, splintered or unsafe furniture must be used.
- 84.** Broken glass must not be placed in wastepaper baskets unless properly wrapped.
- 85.** An office must be provided with a suitable ashtray, unless "No Smoking - Défense de fumer" signs are posted, and no person shall dispose of cigarettes or matches in waste baskets.
- 86.** Flammable liquids and similar materials must be stored in a safe place and only minimum quantities must be kept in the office for immediate use.
- 87.** An office must be supplied with an approved waste basket, and plastic containers or wire-mesh baskets must not be used.

PART V

CONSTRUCTION AND MAINTENANCE

Safe Building Construction

88. The latest edition of the *National Building Code of Canada*, the latest edition of the *National Fire Code of Canada*, and the latest edition of the Canadian Standards Association *Z240 Mobile Home Series* are adopted for the purposes of these regulations.

Handrails and Guardrails

- 89.** A flight of stairs having more than four risers must be equipped with handrails on the open sides of the stairways.
- 90.** (1) Handrails must be installed
- (a) on one side of enclosed stairways 112 cm (44 in.) or less in width; and
 - (b) on both sides of enclosed stairways more than 112 cm (44 in.) in width.
- (2) The top of a handrail must be at a height of 76 cm to 86 cm (30 in. to 34 in.) above the stair tread, measured vertically from the nose of the tread.
- (3) The height of the handrail must not vary on a flight or succession of flights of stairs.
- (4) Where a stairway ends near dangerous traffic or other hazards, detour guardrails must be installed.

91. (1) Guardrails must be installed where an open-sided floor, working platform, runway, walkway or balcony is 1.22 m (4 ft.) or more above grade or floor level.

(2) Guardrails must be installed across glass panels, the lower edges of which are less than 76 cm (30 in.) above the stair tread nosings, ramps, platforms or landings.

(3) Subsection (2) does not apply where laminated, wired or tempered glass having impact resistance equivalent to that of a guardrail, is installed.

(4) A guardrail consists of a top rail, approximately 107 cm (42 in.) above the floor level, and an intermediate rail centred at approximately the mid-point of the space between the underside of the top rail and the floor level or upper edge of the toe-board if one is fitted.

(5) The top and intermediate rails of a guardrail must be supported by vertical members spaced not more than 2.4 m (8 ft.) apart.

(6) A guardrail must be capable of withstanding a live load of 9 kg (20 lb.) each linear foot applied both horizontally and vertically downward at the top rail.

(7) Where a worker is employed near an open tank 1.2 m (4 ft.) or more in depth or containing liquids or harmful substances, the sides of the tank must be constructed to extend to at least 107 cm (42 in.) above a working platform, or a guardrail must be provided to prevent a person from falling into the tank.

(8) Guardrails must be installed on a walkway over an open tank that contains harmful substances or that is 1.2 m (4 ft.) or more in depth.

92. (1) A floor opening, hole or pit in a floor, roof, walkway or work area accessible to workers must be barricaded or securely covered.

(2) Where a vehicle service pit is used so frequently that compliance with subsection (1) is impracticable, the perimeters of the pit must be delineated by high visibility luminescent and skid-resistant paint instead of covers or guardrails.

(3) A floor opening, permanent walkway and platform 3 m (10 ft.) or more above grade, must be equipped with toe-boards.

(4) A walkway and platform installed over machinery or a work area must be equipped with toe-boards.

(5) The top of a toe-board must be approximately 10.16 cm (4 in.) above the floor or platform on which it is installed and the clearance between the bottom of the toe-board and the floor or platform must not exceed 12.7 mm (0.5 in.).

(6) Where materials are stored near a walkway or platform, the toe-boards must be increased in height or solid or mesh panels of appropriate height must be installed to prevent the materials from falling.

93. (1) No walkway must be less than 50.8 cm (20 in.) in width.

(2) Safe access to a walkway must be provided by fixed ladders or stairways.

94. Curbs must be installed where practicable, wherever there is danger of vehicles or other equipment running off the edge of an elevated area.

95. (1) The design and occupancy of structures, and the provision of fire-fighting equipment in the structure must conform to the requirements of the *Fire Prevention Act* and regulations under that Act, or to the requirements of the local authority having jurisdiction.

(2) Fire-fighting equipment must be maintained in accordance with the instructions of the manufacturer or the instructions of the authority having jurisdiction.

(3) A worker must be adequately instructed in the fire prevention and emergency evacuation procedures applicable to the place of employment.

(4) An employer shall designate workers and ensure that they are adequately instructed in fire-fighting procedures applicable to their place of employment.

(5) An employer shall ensure that, where practicable, the local fire department is familiar with the special fire hazards peculiar to the employer's premises.

96. (1) Work on electrical systems or near overhead electrical conductors must be carried out in accordance with the *Electrical Protection Act* and regulations under that Act.

(2) Electrical conductors and equipment must be installed, maintained and used in conformity with the *Electrical Protection Act* and the regulations under that Act.

Guards and Protective Devices on Machinery

97. Machinery and equipment must be equipped with guards that prevent workers from contacting moving parts and from entering a danger area during operation.

98. (1) A guard must be designed, constructed, installed and maintained so it is capable of effectively performing the functions for which it is intended.

(2) The application of guards and associated devices must be in accordance with the current standards of

- (a) the Canadian Standards Association;
- (b) the American National Standards Institute; or
- (c) other standards accepted by the Chief Safety Officer.

99. A gear and chain-drive sprocket must be completely enclosed, or where complete enclosure is impracticable, must have band-type guards with flanges extending inward beyond the root of the teeth, and where there is a hazard from exposed spokes, must be enclosed on exposed sides.

100. A friction-clutch coupling must have the exposed operating mechanisms guarded and the operating handles must be placed at a safe distance from the couplings.

101. A power transmission belt, rope, chain or shaft that is within 2.1 m (7 ft.) of a floor, walkway or platform must be guarded to prevent contact by a person.

102. A power transmission belt, rope, chain or shaft located over an area used by workers must be fitted with guards to protect the workers from injury if the belt, rope, chain or shaft fails.

103. A projecting shaft end must be guarded to prevent contact by a person.

104. (1) Sections of flywheels or pulleys within 2.1 m (7 ft.) of a floor, walkway or platform must be guarded to prevent contact by a person.

(2) A pit for flywheels or pulleys must be fitted with curbs or toe-boards.

105. (1) A guardrail installed to prevent contact with moving machinery must be so located as to provide a clearance of not less than 38.1 cm (15 in.) and not more than 50.8 cm (20 in.) between the guardrail and the machinery.

(2) The design and construction of guardrails must be such as to prevent workers from coming into contact with moving machinery.

106. When a belt is not in use it must be hung clear of shafting and pulleys.

107. (1) Where it is necessary to apply belt dressing to a moving belt, the dressing must be applied only where the belt leaves a pulley.

(2) When the pulleys are 20.32 cm (8 in.) or less in diameter the dressing must be applied midway between the pulleys but not within 60.96 cm (2 ft.) of an in running nip-point.

108. (1) No cast iron flywheel or pulley shall be operated at a rim velocity in excess of the specifications of the manufacturer, or in the absence of such specifications, in excess of 1.83 km (6,000 ft.) each minute.

(2) A pulley or flywheel that is defective or that has been exposed to excessive heat must be removed from service.

(3) No person shall repair a cast iron flywheel by welding, brazing or bolting.

109. The nip-points of belt conveyors must be guarded against contact by a person.

110. The moving parts of screw-type conveyors must be guarded against contact by a person.

111. When it is impracticable to guard feed-points, workers shall be provided with, and shall use, suitable tools or devices to prevent them from coming into contact with moving parts.

112. A conveyor that operates over an area used by workers must be designed and equipped to prevent material or parts from falling into the area.

113. No person shall cross a conveyor other than at an established walkway.

114. (1) Where a conveyor constitutes a hazard to a person, that person shall be protected by the installation of guardrails or shall wear a safety-belt or other effective means of restraint.

(2) The protection mentioned in subsection (1) must be provided on conveyors where a person might fall onto a conveyor or where the accessible sides of a conveyor are located less than 91.44 cm (36 in.) above the level of adjacent floors, platforms or walkways.

115. No person shall be permitted on a conveyor until it has been locked out.

116. (1) A conveyor that poses a hazard to workers must be equipped with emergency stopping devices, located near the conveyor, or workers shall wear safety-belts or other effective means of restraint.

(2) An emergency stopping device referred to in subsection (1) must be so arranged that, after an emergency stop, the conveyor can only be restarted after manually resetting the stopping device.

(3) No conveyor shall be restarted after an emergency stop until it has been inspected to determine that it can be operated safely.

117. Guards must be installed at the point of operation on a power press, shear or cutter, or special devices must be provided and used to prevent injury to the hands of the operator.

118. (1) After a die-setter has set the dies and before the machine is placed into operation, he or she shall ensure that the guards and feeding arrangements effectively protect the operator from injury.

(2) Where a ram-enclosure type of guard is used

- (a) the opening between the bottom of the enclosure and the work or working surface shall not exceed 9.53 mm (0.375 in.);
- (b) the top of the enclosure must extend at least as high as the upper limit of the ram;
- (c) there must be no dangerous shear-points between the guard and a moving part;
- (d) openings in the guard, if within 10.16 cm (4 in.) of a moving part, must not exceed 1.27 cm (0.5 in.) in minor dimension;
- (e) openings in the guard, if over 10.16 cm (4 in.) from a moving part, must not exceed 12.9 cm² (2 in.²).

119. (1) Where a press is equipped with a gate-guard, two-handed tripping device or sweep-guard, the guards or devices must conform to the following specifications:

- (a) the guard or device must be
 - (i) simple and reliable in construction, application and adjustment,
 - (ii) permanently attached to the press-frame,
 - (iii) so designed that it does not present a hazard itself, and
 - (iv) so designed and constructed as to facilitate inspection and to minimize the possibility of removing or misusing essential parts;
- (b) the guard or device must be designed and constructed to prevent the operator from placing his or her hands within the danger zone while the ram is approaching the lower limit of its downstroke;
- (c) two-handed tripping devices must be so designed and installed as to prevent the securing of one handle or button in the operating position;
- (d) on slow-acting presses the guard or device must be designed and installed to prevent the operator placing his or her hand in the danger zone while the ram is descending;
- (e) openings in gate-guards must not exceed the dimensions set out in section 118;
- (f) a non-repeat attachment must be provided to disconnect the operating control after each stroke, and to prevent further motion of the press, but a non-repeat attachment is not required where the guard or device is directly connected to the ram.

(2) A non-repeat attachment must not be dependent on the action of a spring, except a compression spring operating in or on a closely fitting barrel or rod and so wound that the space between coils is less than the diameter of the wire.

(3) A non-repeat attachment is not required where a gate-guard is installed to provide full protection in the event that the press repeats through failure of the latch return spring or through a continuously depressed operating control.

120. Guillotine and alligator shears and cutters must be fitted with guards or other devices that

- (a) prevent the hands of the operator from entering the point of operation while the shears are closing; and
- (b) protect the operator from flying particles emanating from the shears.

121. Except on large presses that cannot be turned by hand, the source of power must be disconnected when setting dies.

122. (1) A power press that is operated by more than one person shall be equipped with devices to prevent operation of the press until both operators' controls have been activated.

(2) Where a power press that is equipped with more than one control station is operated by only one person, the unused controls must be locked out.

123. Where a press is guarded by limiting the ram stroke, the stroke of the ram must be such that the clearance between the ram and the die or stripper does not exceed 9.53 mm (0.375 in.).

124. (1) A set of feed-rolls must be equipped with guards to prevent the operator's hands from coming into contact with the in-running rolls at any point.

(2) The guards referred to in subsection (1) must be designed to be effective for any thickness of material being processed.

(3) The clearance between the guard and the material passing through the feed-rolls must not exceed 9.53 mm (0.375 in.).

125. Where work processes on metal-forming rolls preclude the use of guards, emergency stopping devices operable by contact with the legs or body must be installed on the exposed sides of the rolls.

126. Splash guards must be provided to contain cutting or cooling fluids thrown from the work.

- 127.** Guards or other enclosures must be used to prevent any person from contacting stock projecting from machine tools.
- 128.** Openings in shaper and planer beds shall be covered or guarded to eliminate shearing hazards.
- 129.** Guards must be installed at the farthest points of travel of the carriages or tables of shapers, planers, surface grinders and other similar equipment to protect workers from contact with moving parts.
- 130.** The rims of the revolving tables of vertical boring mills must be guarded to prevent contact by a person.
- 131.** The operation and maintenance of abrasive wheels must be conducted in accordance with the requirements of the American National Standards Institute or such other standards as the Chief Safety Officer approves.
- 132.** (1) Abrasive wheels must be fitted with protective hoods of sufficient strength to contain fragments of ruptured wheels.
- (2) Hoods must be designed to ensure that the angular exposure of the grinding wheel periphery and sides is limited to the minimum possible considering the type of wheel used and the nature of the work being performed.
- (3) This section does not apply to wheels used for internal work, mounted wheels of any shape or type that are 5.08 cm (2 in.) or less in diameter, or threaded-hole, cone and plug types where the nature of the work provides protection.
- 133.** Effective means must be provided to protect the operator's eyes during grinding and buffing operations.
- 134.** Where a person other than the operator is exposed to the hazards produced by a grinding or buffing operation, separate booths, barriers, exhaust systems or other effective means must be provided for his or her protection.
- 135.** (1) A grinding machine on which the work is hand held must be fitted with an adjustable work rest.
- (2) The work rest referred to in subsection (1) must be adjusted so that its upper edge is not below the centre line of the abrasive wheel, no more than 3.18 mm (0.125 in.) from the cutting surface.
- 136.** (1) No abrasive wheel shall be operated at speeds in excess of the recommendations of the manufacturer.

(2) No grinding shall be done on the sides of an abrasive wheel unless it is designed for that use.

137. (1) Power driven machinery must be equipped with start/stop controls located within easy reach of the operator.

(2) Where the automatic restarting of machinery that has been stopped through power failure would create a hazard to a person, the motor control device must be designed to prevent restarting after restoration of power.

(3) A starting device must be so arranged as to prevent inadvertent operation.

138. (1) A manually controlled loose pulley must be furnished with a permanent belt-shifter located within easy reach of the operator.

(2) The belt-shifter referred to in subsection (1) must be equipped with a device to make it impossible for the belt to creep from the loose pulley onto the tight pulley.

139. A belt over 10.16 cm (4 in.) in width running on cone pulleys must be provided with belt-shifters.

140. (1) A belt-tightener that controls the operation of a machine must be equipped with a safety lock or stop to prevent the application of the tightener to the belt until the lock or stop is released.

(2) A chain or cable must be attached to each tightener frame to prevent the tightener pulley from striking other pulleys or workers in the event of a belt failure.

Maintenance of Machinery and Equipment

141. No person shall oil or adjust moving machinery if he or she could come in contact with moving parts.

142. When machinery or equipment is shut down for maintenance or repairs, no work shall be carried out

- (a) until parts, extensions and attachments have been secured against inadvertent movement;
- (b) when the nature of the work exposes workers to mechanical hazards or harmful substances until the hazardous conditions have been removed; and
- (c) until lock out procedures have been applied.

- 143.** Where a person is required to work in a vessel or area that is connected to a system of material conveyance, the control devices must be locked in the inoperative position or other effective means must be adopted to prevent a substance from flowing into the vessel or area in which the person is working.
- 144.** Before commencing maintenance or repair work on power driven machinery or equipment, the control devices must be secured in the inoperative position by the use of locks that must be marked or tagged to identify the person applying them.
- 145.** (1) A person who works on machinery or equipment is responsible for
- (a) locking the control devices; and
 - (b) removing the lock on the completion of his or her work.
- (2) Subsection (1) does not apply where systems are controlled by a central control operator.
- (3) The operator shall lock out the central control and record the portion locked out and the time.
- (4) The operator shall only re-energize the system on the instructions of the person who requested the de-energization.
- 146.** After lock out procedures have been applied, the affected machinery or equipment must be checked to ensure that it cannot be operated.
- 147.** Locks must only be removed
- (a) by the person or persons who installed them; or
 - (b) in an emergency, by a supervisor, who shall first ensure that the machinery or equipment can be operated safely.
- 148.** (1) For the purpose of these regulations, "control device" means, in the case of electrical controls, the switch or circuit breaker controlling the flow of current to the branch circuit that supplies power to the machinery or equipment.
- (2) The locking out of individual control buttons or switches on a console does not constitute compliance with these regulations.
- 149.** (1) Only lock out procedures are acceptable.
- (2) Where circumstances render the application of lock out procedures impracticable, alternative proposals designed to provide equivalent protection to workers shall be submitted to the Chief Safety Officer for consideration and approval.

Miscellaneous Requirements

150. No machine shall be located in such proximity to a thoroughfare, structure or other machine that it constitutes a hazard to any person, unless effective measures are taken to guard against the hazard created.

151. Restraining devices must be used

- (a) on connections of hoses or pipes under pressure, if inadvertent disconnection could cause a reaction dangerous to any person;
- (b) on equipment under stress, where the failure, fall or collapse of the equipment could injure any person; and
- (c) to secure objects from falling and endangering any person.

152. (1) Piping systems containing substances hazardous to any person or that are flammable, corrosive, toxic or of a hazardous temperature or pressure must be marked by a system of identification satisfactory to the Chief Safety Officer.

(2) The system of identification referred to in subsection (1) must be made known to each worker.

(3) Identification markings must be maintained in a legible condition.

(4) For the purposes of this section the following standards are acceptable:

- (a) the American National Standards Institute's *Safety Color Code for Marking Physical Hazards and Identification of Certain Equipment*;
- (b) the American National Standards Institute's *Scheme for the Identification of Piping Systems*.

153. (1) A sandblasting, shot peening, steam cleaning or similar operation must be carried out only in a manner and under conditions that will not cause injury to a person.

(2) The operating controls on equipment referred to in subsection (1) must be immediately accessible to the operator.

Welding and Burning

154. Gas and electric welding and burning equipment, installation and operation must be in conformity with the recommendations of the manufacturer and with the requirements of the *Fire Prevention Act* and regulations under that Act.

155. The cylinders, piping and fittings of compressed and liquified gas systems must be so located or guarded as to protect them from physical damage.

- 156.** No person shall allow sparks or flames to come in contact with cylinders, regulators or hoses of compressed gas systems, and charged gas cylinders shall be protected from a source of heat in excess of 55°C (131°F).
- 157.** (1) No person shall put gas-welding or burning equipment into use without first ensuring that parts are free from defects, leaks, oil and grease.
- (2) Only standard fittings, designed and manufactured for the specific compressed gas service shall be used.
- 158.** Welding equipment, including regulators and automatic reducing valves, shall be used only for the gas for which it is designed.
- 159.** Compressed gas cylinders
- (a) must not be hoisted by slings, dropped or subjected to impact; and
 - (b) must be secured against falling during storage, transportation and use.
- 160.** Cylinder valves must be closed when the work is finished and when cylinders are empty and valve protection covers must be kept in position when the cylinders are not connected for use.
- 161.** No person shall
- (a) permit oil or grease to contact oxygen cylinders, valves, regulators or other fittings; or
 - (b) handle oxygen cylinders or apparatus with oily or greasy hands or gloves.
- 162.** (1) No person shall use oxygen in circumstances where it could come into contact with petroleum products, natural fibres, metal powders or other readily oxidized material.
- (2) No person shall use oxygen
- (a) in pneumatic tools;
 - (b) to start internal combustion engines;
 - (c) to clean clothing or work;
 - (d) to create pressure; or
 - (e) for ventilation purposes.
- 163.** (1) No person shall carry out arc-welding unless workers exposed to radiation from the arc wear suitable eye protection or are protected by screens.
- (2) A person engaged in electric welding shall wear gauntlet gloves and arm protection.
- (3) No person shall chip or clean welds without wearing eye protection.

(4) A welding work area shall be kept free of electrode stubs, metal scrap and other slipping or tripping hazards.

(5) Receptacles for electrode stubs shall be provided and used.

164. A person who is exposed to the hazard of radiation from welding or burning operations shall use helmets, goggles and other appropriate personal protective equipment.

165. Where welding or burning operations emit harmful fumes or gases, adequate ventilation shall be provided to ensure that the air contaminants do not exceed the threshold limit values referred to in Table 2 of Schedule A. R-028-93,s.7.

166. In an emergency or where welding or burning operations are of short duration and installation of fume controls is impracticable, respiratory protective devices shall be worn.

167. (1) No person shall burn, weld, or carry out hot work on a vessel, tank, pipe or structure or in a place where there is a likelihood of the presence of a flammable or explosive substance until

- (a) tests have been made to ensure that the work may be safely performed;
- (b) suitable procedures have been adopted to ensure safe performance of the work; and
- (c) suitable procedures have been adopted to ensure that existing or potential sources of ignition have been eliminated or effectively controlled.

(2) Where testing procedures are used, additional tests shall be made at intervals that will ensure the continuing safety of the workers.

Explosive-actuated Tools

168. In sections 168 to 199,

"captive tool" means an explosive-actuated tool equipped with a device that prevents the fastener from being projected in a free flight from the tool; (*outil captif*)

"explosive-actuated tool" means a tool which, by means of an explosive force, propels or discharges a fastener for the purpose of imprinting it on, affixing it to or penetrating an object or material; (*outil à cartouches explosives*)

"fastener" means a stud, pin or other fastening device designed and manufactured for use with an explosive-actuated tool; (*attache*)

"high-velocity tool" means an explosive-actuated tool that will impart to a fastener a velocity in excess of 91.44 m (300 ft.) each second, or a kinetic energy in excess of 106.8 N (24 ft lbf), measured at a distance of 1.98 m (6.5 ft.) from the muzzle end of the tool; (*outil à grande vitesse*)

"light duty fastener" means a fastener having a shank diameter of 2.29 mm (0.09 in.) or less; (*attache légère*)

"low-velocity tool" means a tool that will not impart to a fastener a velocity in excess of 91.44 m (300 ft.) each second or a kinetic energy exceeding 106.8 N (24 ft lbf), measured at a distance of 1.98 m (6.5 ft.) from the muzzle end of the tool; (*outil à faible vitesse*)

"manufacturer" means a manufacturer of an explosive-actuated tool, or his authorized agent; (*fabricant*)

"qualified operator" means an operator who holds a valid operator's certificate. (*utilisateur qualifié*)

169. No person shall use an explosive-actuated tool unless it is of a type that has been certified as approved by the Canadian Standards Association or other authority acceptable to the Chief Safety Officer.

170. A tool shall be legibly and durably marked to show the manufacturer's name or trademark and the model and serial numbers.

171. Guards shall be legibly and durably marked to show the manufacturer's name or trademark.

172. No person shall operate an explosive-actuated tool until he or she

- (a) has been trained in the use of the specific make and model of tool and is in possession of a valid operator's certificate issued by the manufacturer or other qualified instruction agency;
- (b) has demonstrated that he or she can use the tool effectively and safely;
- (c) is familiar with these regulations;
- (d) has been authorized by his or her supervisor to use the tool; and
- (e) is wearing the appropriate personal protective equipment.

173. When it is not in use, an explosive-actuated tool and the explosive charges shall be kept in a secure place of storage, inaccessible to persons not authorized to handle them.

174. (1) An explosive-actuated tool shall be designed so that it cannot be discharged during loading or preparation to fire or by the tool being dropped from any height.

(2) An explosive-actuated tool shall be provided with an attached device or other means for the safe extraction of cartridges.

(3) An explosive-actuated tool that requires to be broken for loading the mechanism shall be so designed as to be inoperative unless the separable parts are firmly locked together.

(4) An explosive-actuated tool shall be so designed and constructed that firing shall be dependent on the following two separate and distinct actions by the operator:

- (a) the discharge end of the tool shall be held firmly against the work surface, with a pressure at least 2.27 kg (5 lb.) greater than the weight of the tool;
- (b) the final firing movement shall be separate from the operation of bringing the tool into firing position.

(5) An explosive-actuated tool must be designed so that a positive means of varying the power is available to enable the operator to select a power level sufficient to perform the work without the application of excessive force.

175. (1) Explosive-actuated tools, other than captive and low-velocity types must be provided with a guard or other device that effectively confines flying particles and restrains materials that might ricochet.

(2) An explosive-actuated tool referred to in subsection (1) must be so designed that it will not operate when the guard is removed.

(3) The guard must be mounted at a right angle to the axis of the barrel and every point of its outside edge shall be at least 3.8 cm (1.5 in.) distant from the centre of the barrel when the guard is indexed to the central position.

(4) Where a guard referred to in subsection (1) is adjustable to permit fastening close to a wall, the movable parts that permit the adjustment must be rigidly and permanently attached to the guard.

176. An explosive-actuated tool must be so designed that when the guard is indexed to the central position it will not operate if the bearing surface of the guard is tilted more than 8° from the work surface.

177. (1) The guard on an explosive-actuated tool must be normally used in a central position.

(2) Setting to an off-centre position is permissible only when fastening close to a wall, in which case the flat side of the guard must be held flush against the wall.

178. Special guards supplied by the manufacturer must be used in any application, such as the use of barrel extensions, in which an air space of more than 4.76 mm

(0.1875 in.) width occurs between the outside edge of the standard guard and the surface of the material into which the fastener is being seated, or between the guard and the material being fastened.

179. (1) An explosive-actuated tool must be maintained in a safe working condition in accordance with the instructions of the manufacturer.

(2) The operator of an explosive-actuated tool shall thoroughly inspect the tool each day before using it, paying particular attention to the cleanliness of the chamber and barrel.

(3) A defective or unsafe explosive-actuated tool must be removed from service until satisfactory repairs have been made.

(4) Repairs or modifications to an explosive-actuated tool shall be carried out only by the manufacturer or a qualified repairperson using parts made or supplied by the manufacturer.

180. The power of an explosive-actuated tool may be controlled by the selection of cartridges of sufficient power to perform the work without the application of excessive force.

181. The power load strength of cartridges must be described by load numbers from number one to number 12, with the strength increasing in steps as the load numbers increase, as set out in Schedule A.

182. (1) Cartridge cases and loads must be identified by colour in accordance with Schedule A.

(2) Load colour identification must be placed on the cartridge or wadding of each power load.

(3) Caseless power loads must be coded to identify the power load level by power load colours as specified in Schedule A.

(4) Power load packages must provide a visual number and colour indication of the power level of the contained power loads as specified in Schedule A.

183. A box of fasteners must be marked with the name of the manufacturer and the type and size of fastener.

184. The use of cartridges and fasteners must be restricted to those types recommended for a specific tool by the manufacturer of the tool or of the cartridges or fasteners.

185. Fasteners must be driven into concrete in accordance with the specifications set out in Schedule B.

186. Fasteners must be driven into steel in accordance with the specifications set out in Schedule C.

187. A fastener must not be driven so close to corners or edges as to

- (a) cause the receiving material to break off; or
- (b) render the guard ineffective.

188. No person shall fire a fastener into any material where there is a possibility of injury to any person by the passage of the fastener through the material.

189. No person shall use a high-velocity tool to drive a fastener into a hollow concrete block.

190. No person shall use an explosive-actuated tool to drive a fastener through an existing hole, unless the tool is specifically equipped by the manufacturer for accurate alignment of the barrel with the hole.

191. Where an anchor or finishing disc, clip or other attaching fixture is used in conjunction with a fastener, it must be held in position and proper alignment by means of pressure fitting, magnetic adaptor or other effective means to keep the fixture from deflecting the fastener during the firing process.

192. No person shall use an explosive-actuated tool to drive a fastener into cast iron glazed block or tile, terra-cotta, marble, granite, slate, glass or any other unusually hard or brittle material, or into a surface that is of greater hardness than the fastener being used.

193. Where the hardness of a material or surface is not known, it must be tested by using a hand-hammer to drive the point of the fastener into the material and if the point of the fastener does not penetrate the surface, no attempt must be made to use an explosive-actuated tool to drive a fastener into that surface.

194. No person shall use an explosive-actuated tool where flammable or explosive gas, vapour, dust or other such substances are present.

195. Where an explosive-actuated tool is used in a confined place adequate ventilation must be provided in that place.

196. (1) No explosive-actuated tool shall be loaded until an inspection has revealed the breech and barrel to be free of foreign matter.

(2) An explosive-actuated tool shall be loaded only for immediate use and the tool must not be left in a loaded condition.

197. An explosive-actuated tool shall be fired only when firmly held by an operator having secure footing directly behind the tool.

198. If a misfire occurs during the use of an explosive-actuated tool, the operator shall continue to hold the tool in the firing position for at least 15 seconds and until the cartridge has been ejected, he or she shall keep the tool pointed away from any person.

199. An operator, helper and other person in the immediate vicinity of a place in which an explosive-actuated tool is being used shall wear

- (a) suitable eye protective devices of the close-fitting eyecup or cover-goggle type;
- (b) safety headgear; and
- (c) suitable hearing protection devices.

Mobile Equipment

200. Mobile equipment must be equipped, maintained and operated in accordance with these regulations.

201. (1) Mobile equipment must be maintained in a safe operating condition.

(2) The inspection, repair, maintenance and modification of mobile equipment must be carried out in accordance with the instructions of the manufacturer or, in the absence of instructions, in accordance with good engineering practice.

202. The servicing, maintenance and repair of mobile equipment must, where possible, be done when the equipment is not in operation, but equipment in operation may be serviced if it can be done safely and if the continued operation of the mobile equipment is essential.

203. Vehicle-mounted aerial devices shall be designed, fabricated, operated, inspected and maintained in accordance with Canadian Standards Association Standard C225, as amended from time to time.

204. (1) Mobile equipment must be equipped with

- (a) an audible warning signal;
- (b) a means of illuminating the path of travel at any time when, because of insufficient light or unfavourable atmospheric conditions, persons or vehicles are not clearly discernible at a distance of 152.4 m (500 ft.);
- (c) adequate illumination of the cab and instruments; and
- (d) a mirror providing the operator with an undistorted reflected view to the rear of the mobile equipment.

(2) Windshields, side and rear windows and rear-vision mirrors must be maintained in a condition that provides clear vision for the operator.

205. Except as hereafter specified, powered mobile equipment must be equipped with service brakes capable of stopping and holding it, within the limits of traction of the braked wheels, on any grade on which it is designed to operate, when loaded to the manufacturer's gross vehicle weight.

206. (1) A motor vehicle must be equipped with an effective mechanical parking brake.

(2) Where a mechanical parking brake provides the only means of emergency stopping in the event of service brake failure, it must be capable of stopping and holding the vehicle under any operating condition.

207. Air brakes shall be installed and maintained in accordance with the requirements of the *Industrial Transportation Act* and regulations under that Act.

208. The following types of mobile equipment, manufactured after July 1, 1978, must be equipped with service brake systems, emergency stopping systems and parking brake systems meeting the performance criteria of either the following specified Society of Automotive Engineers (SAE) recommended practices, or such other standards as are acceptable to the Chief Safety Officer:

<u>Equipment</u>	<u>SAE recommended practice</u>
Off-highway rubber-tires front-end loaders, dozers and skidders	J237
Off-highway trucks and wagons	J166
Rubber-tired self-propelled graders	J236
Rubber-tired self-propelled scrapers	J319b

209. (1) Steering wheel knobs must not be used without the express permission of the Chief Safety Officer on a vehicle that

- (a) is designed or used for on-highway operation; or
- (b) has a steering gear than transmits road wheel reactions back to the steering wheel.

(2) Subsection (1) does not apply where the knob is of the mushroom type designed to be operated by the palm of the hand.

(3) A steering wheel knob, where permitted, must be fitted so that the knob lies completely within the periphery of the steering wheel.

210. Powered mobile equipment fitted with torque-converter or similar fluid drive transmissions must be provided with devices that will permit starting the engine only when the transmission is in the neutral position.

211. (1) A comfortable, well designed, well constructed, safely located and securely mounted seat must be provided for the operator of mobile equipment.

(2) A safe means of entry must be provided to the operating platforms, cabs and bodies of mobile equipment.

212. The operator shall maintain the floor or deck of mobile equipment free of material, tools or other objects that could create a tripping hazard or that could interfere with the operation of controls.

213. (1) No unauthorized person shall be permitted on powered mobile equipment while the equipment is in motion.

(2) Nothing in subsection (1) prohibits the presence of a trainee, supervisor or necessary maintenance person when his or her presence is essential.

214. No person shall board or leave a vehicle while it is in motion except in an emergency situation.

Rollover Protective Structures

215. (1) A rollover protective structure (to be referred to as ROPS) manufactured and installed in accordance with the requirements of these regulations must be certified by the vehicle or ROPS manufacturer or by a registered professional engineer.

(2) Modifications of existing canopies to meet the requirements of these regulations must be certified by the modification design agency and the installing agency, a registered professional engineer or other qualified person acceptable to the Chief Safety Officer.

(3) Notwithstanding subsections (1) and (2), mobile equipment listed in section 208 may be exempted from the requirements of these regulations in respect of ROPS where it can be shown to the satisfaction of the Chief Safety Officer that the vehicle will be used under circumstances where no rollover hazard will exist.

(4) Crawler tractors fitted with side-booms are exempt from the requirements for ROPS.

(5) Where circumstances render compliance with these regulations impracticable, alternative proposals designed to provide equivalent protection to workers must be submitted to the Chief Safety Officer for consideration.

216. The following information must be permanently marked on every ROPS structure:

- (a) the name and address of the manufacturer;
- (b) model and serial numbers;

- (c) the make, model or series number of the machine that the ROPS is designed to fit.

217. Replacements, modifications, additions, repairs, weldings and cuts to a ROPS shall only be effected in accordance with the instructions of the manufacturer.

218. (1) Where glass is used as part of the enclosures for cabs, canopies or tops, it must be safety glass or an equivalent material.

(2) Broken or cracked glass must be replaced immediately.

219. Except as provided in these regulations, seat belts meeting the requirements for Society of Automotive Engineers (SAE) recommended practices J386 and J4c, or other standards acceptable to the Chief Safety Officer and having a minimum webbing width of 7.62 cm (3 in.), must be provided and used by the operator and passengers on mobile equipment that has been fitted with a ROPS.

220. Equipment having moving parts on one or both sides of an operator's compartment must be effectively guarded so that

- (a) the controls of the machine cannot be operated from outside the cab; and
- (b) no part of a person in the compartment can project into the hazard area created by the moving parts.

221. Seat belts installed in mobile equipment must be used when the equipment is in motion.

222. Where road graders are operated with cab doors open and the operator is necessarily in a standing position and unable to comply with section 221, additional restraining devices such as doorway chains or bars or crew harnesses must be installed and used to prevent occupants from falling from the cab.

223. An exposed moving part on mobile equipment other than a main drive component that is so located as to constitute a hazard to workers, must be effectively guarded.

224. Where mobile compressors, generators, pumps and similar equipment are operated with side panels open or removed, exposed moving parts, including fans and belts that constitute a hazard to workers, must be effectively guarded.

225. Mobile equipment used for lifting or hoisting or similar operations shall have a permanently affixed notation stating the safe working load capacity of the equipment and the notation must be kept legible and clearly visible to the operator.

226. The operator of mobile equipment must be protected against falling, flying or intruding objects or material by means of suitable cabs, screens, shields, grills, deflectors or guards.

227. The following types of mobile equipment, manufactured after July 1, 1978 shall be provided when put into service, with roll-over protective structures that meet the criteria of the specified recommended practices of the Society of Automotive Engineers (SAE):

<u>Equipment</u>	<u>SAE recommended Practice</u>
Crawler tractors, loaders & skidders	J395
Wheel dozers, loaders & skidders	J394
Motor graders	J396
Self-propelled wheel scrapers	J320a
Agricultural & industrial tractors	J334a

228. (1) No person shall operate powered mobile equipment until he or she has received adequate instruction and has demonstrated to a supervisor that he or she is

- (a) a competent operator;
- (b) in possession of an operator's licence and an airbrake certificate where required;
- (c) familiar with the operating instructions pertaining to the equipment; and
- (d) authorized to operate the equipment.

(2) Subsection (1) does not apply where a trainee operates powered mobile equipment under the supervision of an instructor.

229. (1) The operator of mobile equipment is directly responsible for the safe operation of that equipment.

(2) The operator shall

- (a) maintain full control of the equipment; and
- (b) comply with laws and regulations governing the operation of the equipment.

230. Where the operator is of the opinion that the equipment or the load is hazardous, he or she shall not move the equipment until

- (a) remedial action has been taken; or
- (b) orders to proceed have been issued by the supervisor who has controlled the hazards to which workers may be exposed.

231. Where the vision of an operator is obstructed, he or she shall not move the equipment until suitable precautions have been taken that will protect the operator and other workers from possible injury.

232. (1) The operator shall examine his or her mobile equipment before initial daily operation and as required.

(2) An operator shall immediately report defects and conditions affecting the safe operation of the mobile equipment to his or her immediate supervisor or other authorized person and confirm this by a written report as soon as possible.

233. No person shall fill the fuel tanks of mobile equipment with gasoline or vaporizing liquids

- (a) while the engine is running;
- (b) while a person is smoking in or about the equipment; or
- (c) while there is a known source of ignition in the immediate vicinity.

234. (1) The operators of mobile equipment shall be the only workers permitted to ride the equipment unless appropriate seats or other safe facilities for other workers are provided and used.

(2) Safe facilities referred to in subsection (1) include

- (a) footboards or platforms on which workers stand or sit, located to protect workers from contact with roadside objects or other vehicles, but rear-mounted installations shall not be occupied while the vehicle is backing;
- (b) handholds or guardrails; or
- (c) safety-belts, harnesses or other means of restraint.

235. No person shall remain in the cab of a vehicle while loads are elevated over the cab unless he or she is protected against moving or falling material.

236. (1) No operator of powered mobile equipment shall leave the controls of the equipment unattended unless the equipment has been secured against inadvertent movement.

(2) Brakes that are applied and held on only by air or fluid pressure must not be depended on as the sole means to secure unattended vehicles against inadvertent movement.

237. (1) Where the gradient or condition of a road surface is such that the braking power of a vehicle is insufficient to provide adequate control, the vehicle must be snubbed by a cable or a suitable vehicle shall be used to assist in negotiating the grade.

(2) Towing or snubbing cables must be secured by safety-hooks, moused hooks or shackles and must be of adequate strength.

238. Where a hazard is created by the swinging movement of the load, cab, counterweight or another part of mobile equipment, no person shall remain within range of the swinging load or equipment and the operator shall not move the equipment when a worker is within range.

239. Equipment must be so positioned that no swinging portion of the equipment can come within 60.96 cm (2 ft.) of an obstruction in an area accessible to workers or entry to such an area shall be prevented by barriers or other effective means.

240. No operator shall leave unattended a suspended load, machine or part or extension of it unless it has been immobilized and secured against inadvertent movement.

241. (1) No person shall work beneath an elevated dumptruck body until the body has been securely blocked in the elevated position.

(2) Where a person is required to work beneath elevated parts of mobile equipment the elevated parts must be securely blocked.

242. A tire mounted on a split-rim or locking-ring wheel must be initially inflated only after the wheel assembly has been placed in a cage or has been otherwise restrained to contain flying parts in the event of an explosion.

Transporting Materials

243. Materials and equipment being transported must be so loaded and secured as to prevent any movement of the load that could create a hazard to a person.

244. (1) Effective means of load restraint must be provided to protect the crew of a vehicle transporting a load that might shift on rapid deceleration of the vehicle.

(2) A means of load restraint must be capable of preventing load movement under emergency stopping conditions.

(3) The use of banding or binders alone does not constitute compliance with this section.

(4) This section does not apply to log transporters.

Fork-lift Trucks

245. (1) A unit load transported on a fork-lift truck must not project above the fork carrier or back rest a distance greater than half the height of the unit load.

(2) A loose load must not project above the fork carrier or back rest.

Ladders

- 246.** A ladder must be designed, constructed and installed to meet the requirements of
- (a) the Canadian Standards Association, for portable ladders;
 - (b) the American National Standards Institute, for fixed ladders; or
 - (c) other standards that are acceptable to the Chief Safety Officer.
- 247.** (1) Where portable wooden ladders are constructed on a job site
- (a) the side rails must be of 5.08 cm by 10.16 cm (2 in. by 4 in.) nominal dimensions up to 4.88 m (16 ft.) in length, or 5.08 cm by 15.24 cm (2 in. by 6 in.) nominal dimensions between 4.88 m (16 ft.) and 7.32 m (24 ft.) in length;
 - (b) side rails must not be notched, dapped, tapered or spliced;
 - (c) the distance between the inner faces of the side rails must be not be less than 30.48 cm (12 in.);
 - (d) the cleats must be of 2.54 cm by 7.62 cm (1 in. by 3 in.) nominal dimensions on ladders;
 - (e) the cleats must be spaced at 30.48 cm (12 in.) centres;
 - (f) the cleats must be nailed directly onto the smaller surfaces of the side rails, using three 5.72 cm (2.25 in.) wire nails on each end of 10.16 cm (4 in.) cleats or two similarly sized nails on each end of 7.62 cm (3 in.) cleats; and
 - (g) the spaces on the side rails between the cleats must be filled with close fitting and well secured fillers of the same thickness as the cleats.
- (2) Ladder components must be cut from lumber that meets the following requirements:
- (a) dependent on their dimensions, components must be of construction grade, or No. 1 structural grade or better;
 - (b) species are limited to douglas fir-larch, hem-fir, spruce-pine-fir or coast sitka spruce;
 - (c) lumber must be graded according to the *National Lumber Grades Authority Rules* or other approved grading rules and lumber shall be grade stamped by an approved agency.
- 248.** If protective coatings are applied to wooden ladders, only transparent coatings or preservatives shall be used.
- 249.** Portable ladders must be inspected before use and no ladder with loose, broken or missing rungs, split side rails or other hazard-producing defects shall be used.
- 250.** When in use, a portable single or extension ladder must be so placed that the horizontal distance from its base to its vertical plane of support is approximately 1/4 of the ladder length between supports.

- 251.** (1) The lower ends of ladder side rails must rest on a firm and level base.
- (2) The upper part of the side rails must rest on a bearing surface of ample strength to support the applied load.
- 252.** A ladder must be of sufficient length to project approximately 91.44 cm (3 ft.) above the level of the upper landing to which it provides access.
- 253.** A portable single or extension ladder must be equipped with a non-slip base or shall be held, tied or otherwise secured to prevent slipping.
- 254.** No person shall work from the top two rungs of a single or extension ladder or the top two steps of a step-ladder.
- 255.** No person shall use a metal ladder or wire reinforced wooden ladder near energized electrical equipment.
- 256.** Standard ladders must not exceed the following lengths:
- (a) step-ladders – 6.1 m (20 ft.);
 - (b) trestle ladders, or extension sections or base sections of extension trestle ladders – 4.88 m (16 ft.);
 - (c) single ladders – 9.14 m (30 ft.);
 - (d) extension ladders (two sections) – 14.63 m (48 ft.);
 - (e) extension ladders (more than two sections) – 20.12 m (66 ft.).
- 257.** An extension ladder must be overlapped the following minimum distances:

Length of ladder (m (ft.))	Overlap distance (m (ft.))
Not exceeding 10.97 (36)	0.914 (3)
Exceeding 10.97 (36) but not exceeding 14.63 (48)	1.22 (4)
Exceeding 14.63 (48) up to 20.12 (66)	1.52 (5).

- 258.** A fixed ladder more than 6.1 m (20 ft.) in length must be provided with
- (a) platforms at intervals not greater than 6.1 m (20 ft.);
 - (b) safety cages; or
 - (c) acceptable devices to prevent workers from falling.
- 259.** (1) Fixed ladders must be anchored at intervals meeting the requirements of the standards for fixed ladders referred to in paragraph 246(b).
- (2) A continuous clearance space of at least 17.78 cm (7 inches) must be provided behind the rungs of fixed ladders.

(3) Ladder rungs must be omitted above a landing and the side rails must extend at least 106.68 cm (42 inches) above a landing.

(4) This section does not apply to wharf ladders installed in accordance with the requirements of Department of Transport (Canada) regulations.

Stages and Scaffolds

260. (1) Except as otherwise provided, a scaffold must be designed, erected and maintained in accordance with the specifications of

- (a) the Canadian Standards Association;
- (b) the American National Standards Institute;
- (c) a registered professional engineer; or
- (d) other standards acceptable to the Chief Safety Officer.

(2) Wooden scaffold framing components, depending on their dimensions, must be of construction grade or better or No. 1 structural or better and the species of materials must be limited to douglas fir-larch, hem-fir, spruce-pine-fir and coast sitka spruce.

(3) Lumber must be graded according to the *National Lumber Grades Authority Rules* or other approved grading rules.

(4) Lumber must be grade stamped by an approved agency.

261. A scaffold plank must be inspected, tested and identified before each installation.

262. (1) The vertical supports of a scaffold must rest on firm foundations or sills.

(2) No person shall use pallets, boxes, building blocks, bricks or other unstable materials for the purpose of subsection (1).

263. A scaffold having a height exceeding three times its minimum base dimension must be secured to the structure or stabilized by other appropriate means.

264. A scaffold 3 m (10 ft.) or more above grade must be equipped with standard guardrails around its open sides, installed in conformity with these regulations.

265. (1) Toe-boards must be installed around the open sides of scaffold when required to prevent tools, materials or equipment from falling from the scaffold.

(2) Toe-boards must be approximately 10.16 cm (4 in.) in height above the work platforms and shall not have more than 12.7 mm (0.5 in.) clearance between their lower edges and the work platforms.

266. Wooden guardrails must be secured to the inner sides of their vertical supports.

267. Where workers are employed on stilts or work platforms or are otherwise elevated above the floor and the effective height of guardrails, walls or barricades is reduced to less than 106.68 cm (42 in.), additional guardrails must be installed or safety-belts and lifelines shall be worn.

268. (1) Fibre or wire ropes may be used in lieu of guardrails and intermediate rails if

- (a) the fibre ropes are of 15.88 mm (0.625 in.) diameter manila, or other material of equal strength;
- (b) the wire ropes are not less than 9.53 mm (0.375 in.) diameter; and
- (c) ropes are rigged and maintained at the required height and at such tension as to provide effective protection.

(2) Fibre ropes shall not be used where they are likely to be damaged by heat or corrosive substances.

269. No scaffold plank shall be less than 5.08 cm by 25.4 cm (2 in. by 10 in.) nominal dimension or shall

- (a) extend less than 15.24 cm (6 in.) or more than 30.48 cm (12 in.) beyond the supporting members;
- (b) be supported at intervals exceeding 3 m (10 feet) for light work and 2.13 m (7 ft.) for heavy work; or
- (c) be of a thickness that is not uniform with adjoining planks.

270. Work platforms on scaffolds must consist of not less than two scaffold planks.

271. Where the distance between the front and rear vertical scaffold supports is greater than 86.36 mm (34 in.), additional planks must be used so that no opening exists that is greater than the width of one plank.

272. Manufactured scaffold planks, other than extension type stagings, must be designed, fabricated and used to provide no less strength and stability throughout their length than solid 5.08 cm by 25.4 cm (2 in. by 10 in.) wooden scaffold planks having a span of 3 m (10 ft.) between supports and must be of a design and construction satisfactory to the Chief Safety Officer.

273. An extension staging must be of a design and construction satisfactory to the Chief Safety Officer.

274. (1) The extended length of staging must not exceed 4.27 m (14 ft.) and the overlap between halves must not be less than 1/8 of the extended length.

(2) A substantial stop must be fitted to maintain the required overlap.

275. No more than one person shall be on any one extension staging at any time.

- 276.** Extension stagings must not be employed as a platform on a ladder-jack or suspended scaffold.
- 277.** (1) Scaffold planks must not be sloped more than 60.96 cm (2 ft.) vertically and 3 m (10 ft.) horizontally.
- (2) A sloped scaffold plank must be secured against dislodgement.
- (3) A sloped scaffold plank must be fitted with cleats on its upper surface at not more than 40.64 cm (16 in.) intervals or other means may be employed in lieu of cleats to prevent slipping.
- 278.** (1) Ramps and runways used only by workers must be at least 50.8 cm (20 in.) in width and shall be supported at intervals not exceeding 3 m (10 ft.).
- (2) Sloped ramps and runways must be installed in conformity with the requirements of section 260.
- 279.** A scaffold must be erected and dismantled by or under the supervision of workers experienced in such work.
- 280.** No damaged or weakened scaffold shall be used until it has been effectively repaired or strengthened.
- 281.** An employer shall ensure that scaffolds used by his or her workers are in safe condition, whether or not the scaffolds have been erected by his or her workers.
- 282.** Only material for immediate use must be kept on a scaffold and at no time shall a scaffold be overloaded.
- 283.** A safe means of access must be provided to working levels of scaffolding.
- 284.** (1) Access to otherwise inaccessible scaffolds up to 9.14 m (30 ft.) in height may be gained by the use of
- (a) the end-frames, where the design provides a ladder-like structure having uniformly spaced horizontal members; or
 - (b) fixed vertical ladders, portable ladders or stairways.
- (2) Access to otherwise inaccessible scaffolds over 9.14 m (30 ft.) in height must be provided by the use of
- (a) fixed vertical ladders or stairways; or
 - (b) temporary passenger hoists that meet the requirements of these regulations or which have been approved by the Chief Safety Officer.

285. (1) Before assembly at the work site, each part of prefabricated scaffolding must be inspected for defects and no defective part shall be used.

(2) Scaffolding must be erected plumb and level and connections must be securely fastened.

(3) Scaffolds must be secured to the building structure every 4.57 m (15 ft.) vertically and 6.1 m (20 ft.) horizontally.

286. The spacing of vertical supports and bearers of wooden scaffolds of either single-pole or double-pole construction must not exceed

- (a) 3 m (10 ft.) for light duty scaffolds designed to support an evenly distributed load of not more than 122 kg each m² (25 lb. each ft.²);
or
- (b) 2.13 m (7 ft.) for heavy duty scaffolds designed to support an evenly distributed load of not more than 366 kg each m² (75 lb. each ft.²).

287. (1) The components of light duty single-pole scaffolds must have minimum nominal dimensions conforming to the following table:

<u>Component</u>	<u>Dimensions (cm (in.))</u>
Uprights	
- up to 6.1 m (20 ft.)	5.08 x 10.16 (2 x 4)
- over 6.1 m (20 ft.) and up to 15.24 m (50 ft.)	10.16 x 10.16 (4 x 4)
Bearers	
- 91.44 cm (36 in.) span	2.54 x 15.24 (1 x 6)
- 152.4 cm (60 in.) span	5.08 x 15.24 (2 x 6)
Ledgers	2.54 x 15.24 (1 x 6)
Braces	2.54 x 15.24 (1 x 6)
Wall-Scabs & bearer blocks	5.08 x 15.24 (2 x 6)

Minimum platform width	5.08 - 5.08 x 25.4 (2 - 2 x 10)
Guardrails (top)	5.08 x 10.16 (2 x 4)
Guardrails (intermediate)	2.54 x 15.24 (1 x 6)
Toe-boards	2.54 x 10.16 (1 x 4)

(2) The components of double-pole scaffolds must have minimum nominal dimensions conforming to the following table:

<u>Component</u>	<u>Dimensions (cm (in.))</u>	
	<u>light duty</u>	<u>heavy duty</u>
Uprights		
- up to 6.1 m (20 ft.)	5.08 x 10.16 (2 x 4)	5.08 x 15.24 (2 x 6)
- over 6.1 m (20 ft.) and up to 15.24 m (50 ft.)	10.16 x 10.16 (4 x 4)	10.16 x 15.24 (4 x 6)
Bearers		
- 152.4 cm (60 in.) span	5.08 - 2.54 x 15.24 (2 - 1 x 6) or 2.54 - 5.08 x 15.24 (1 - 2 x 6)	5.08 - 5.08 x 15.24 (2 - 2 x 6) or 2.54 x 15.24 (1 x 6)
Ledgers	2.54 x 15.24 (1 x 6)	2.54 x 15.24 (1 x 6)
Braces	2.54 x 15.24 (1 x 6)	2.54 x 15.24 (1 x 6)
Minimum platform width	5.08 - 5.08 x 25.4 (2 - 2 x 10)	10.16 - 5.08 x 25.4 (4 - 2 x 10)
Guardrails (top)	2.54 x 15.24 (1 x 6)	2.54 x 15.24 (1 x 6)
Toe-boards	2.54 x 10.16 (1 x 4)	2.54 x 10.16 (1 x 4)

288. (1) Single vertical supports of scaffolds must be extended only by means of butt joints strengthened by two wooden splice plates having a thickness of not less than 5.08 cm (2 in.) and a length of not less than 1.22 m (4 ft.).

(2) Splice plates must be of the same width as the spliced member and their combined cross-sectional areas must not be less than that of the single vertical upright.

289. Where vertical supports are fabricated by laminating two or more pieces of material to obtain the required cross-sectional dimensions, the distance between joints must not be less than 1.22 m (4 ft.).

290. A scaffold must be adequately supported in two directions by a system of diagonal cross-braces secured to the uprights as close as possible to the ledgers.

291. (1) On single-pole scaffolds the inner ends of bearers must be supported by bearer-blocks and must be securely fastened to wall-scabs.

(2) A manufactured wall-scab must be of a design acceptable to the Chief Safety Officer.

(3) Metal bearers, incorporating hocks that are engaged in holes in the wall sheathing, must be adequately supported by stiffeners secured to the sheathing when such sheathing is plywood of less than 12.7 mm (0.5 in.) thickness or other material of lesser strength.

292. (1) A metal scaffold bracket must be of a design acceptable to the Chief Safety Officer.

(2) A manufactured scaffold bracket must be installed and used in accordance with the instructions of the manufacturer.

(3) Metal scaffold brackets employed in the construction of steel structures must be adequately secured to the structure by bolting or welding.

293. (1) Wooden scaffold brackets must be used only for light duty work.

(2) Wooden scaffold brackets must be comprised of 5.08 cm by 15.24 cm (2 in. by 6 in.) bearers, firmly bracketed by 5.08 cm by 10.16 cm (2 in. by 4 in.) vertical and diagonal members and joints must be fitted with 15.88 mm (0.625 in.) plywood gussets on each side.

(3) Wooden brackets must be attached to walers or scabs secured by ties or bolts passing completely through the wall.

(4) Brackets must be spaced and planks must be installed in conformity with the requirements of these regulations respecting scaffolds.

294. (1) Needle-beam scaffolds and their supports must be designed to a safety factor of 5 and must comply with the following specifications:

- (a) beams must not be less than 10.16 cm by 15.24 cm (4 in. by 6 in.) for spans up to 3.66 m (12 ft.) and must be rigged with their greater dimension vertical;
- (b) job-laminated beams must not be used;
- (c) supporting ropes must be of 2.54 cm (1 in.) diameter first grade manila or other material of equal strength;
- (d) ropes must be secured to beams by scaffold hitches to prevent the beams from tipping;
- (e) ropes must be padded to prevent damage from sharp corners;
- (f) ropes must be secured not less than 30.48 cm (12 in.) from the ends of the beam, in such a manner as to prevent them from slipping from the beam.

(2) Where needle-beam scaffolds are supported by means other than ropes, the beams must be effectively prevented from rotating from a vertical attitude.

(3) Platform planks must not be less than 5.08 cm by 25.4 cm (2 in. by 10 in.) in size and must be secured by cleats or by other means to prevent movement relative to each other or to the beams.

(4) Workers on needle-beam scaffolds must be secured by means of safety-belts and lanyards anchored to the structure.

295. Wooden outrigger beams must be not less than 10.16 cm by 15.24 cm (4 in. by 6 in.) nominal dimensions and installed with their larger dimension vertical, and metal outrigger beams must be of equivalent strength.

296. (1) Outrigger beams must not protrude more than 1.22 m (4 ft.) beyond their fulcrum points.

(2) That portion of the beam extending inboard from the fulcrum point to the anchor point must be at least 1.5 times the length of the outboard section.

297. (1) Outrigger beams must be braced at the fulcrum and anchor points to prevent upsetting and must be secured at the anchor points against vertical and horizontal forces.

(2) Counterweights must not be used.

298. (1) Work platforms must be fully planked.

(2) Planks must not be less than 5.08 cm by 25.4 cm (2 in. by 10 in.) nominal dimensions firmly secured and the span between supports must not exceed 2.13 m (7 ft.).

- 299.** Guardrails must be installed when the platform is 3 m (10 ft.) or more above grade.
- 300.** Work platforms mounted on fork-lift trucks must be
- (a) secured to the fork carriage;
 - (b) fitted with guardrails, intermediate rails and toe-boards on open sides, or be enclosed to a height of 107 cm (42 in.); and
 - (c) fitted with guards to protect the occupants from contact with the elevating machinery.
- 301.** No person shall be transported on an elevated platform on a fork-lift truck but a person may remain on a platform while small adjusting movements are made.
- 302.** (1) Aerial baskets and similar equipment must be fitted with "deadman" type controls and emergency stop buttons in the basket and at operating stations.
- (2) The controls of aerial baskets and similar devices must be protected against inadvertent operation through physical contact or electrical malfunction through the intrusion of moisture.
- 303.** Before the platform is elevated the vehicle must be immobilized against inadvertent movement and when on a slope the wheels must be chocked.
- 304.** Where the motion of the platform is controlled by the vehicle operator, he or she shall
- (a) not leave the controls while workers are on the platform; and
 - (b) respond only to signals from a designated occupant of the platform.
- 305.** Scaffolds mounted on vehicles must be securely fastened to the vehicles in a manner that will assure the stability of the structure.
- 306.** No scaffold shall be mounted on a vehicle unless the vehicle is equipped with levelling jacks or other devices designed to maintain the chassis in a level attitude.
- 307.** The occupants of an aerial basket shall wear safety-belts secured to the boom.
- 308.** A cornice hook used for the support of a swing stage must be of sufficient strength to withstand any forces likely to be applied to it.
- 309.** A cornice hook must be securely tied to a solid anchorage on the building or structure.
- 310.** (1) A hook used in swing stage suspensions must be moused or be fitted with safety-latches.

(2) Subsection (1) does not apply to cornice hooks or to the lower hooks of block and tackle suspensions where the provisions of section 316 apply.

- (3) Trust-outs used to suspend swing stages must be
- (a) fabricated from wood having minimum nominal dimensions of 10.16 cm by 15.24 cm (4 in. by 6 in.) or material having equivalent strength;
 - (b) counterbalanced to support a weight equal to twice the weight of the swing stage and its supporting equipment plus four times the weight of the suspended workers and their equipment;
 - (c) secured to the counterweights;
 - (d) equipped with a means to prevent the suspension slings from slipping off the trust-outs; and
 - (e) tied securely to solid anchorages on the building or structure.

311. (1) A swing stage platform must be not less than 50.8 cm (20 in.) in width and must be of a design acceptable to the Chief Safety Officer.

- (2) Where a plank-type platform is used
- (a) the planks must have a uniform thickness of not less than 5.08 cm (2 in.) nominal dimension;
 - (b) the planks must be tied together on the underside by cleats of a minimum size of 2.54 cm by 15.24 cm (1 in. by 6 in.) nominal dimensions, securely nailed and spaced at intervals of not more than 1.22 m (4 ft.);
 - (c) the planks must not exceed 3.66 m (12 ft.) in length; and
 - (d) stirrups or hangers must be placed so that the span does not exceed 3 m (10 ft.).

312. (1) Solid hangers for swing stages must be made of wrought iron or mild steel having minimum cross-sectional dimensions of 9.53 mm by 3.81 cm (0.375 in. by 1.5 in.).

(2) Hangers of round steel stock must not be less than 15.88 mm (0.625 in.) diameter.

(3) Wire rope hangers must not be less than 12.7 mm (0.5 in.) diameter.

313. Hangers and platforms must be effectively fastened together to prevent inadvertent separation.

314. Fibre rope used for suspending swing stages must

- (a) be manila rope of not less than 19.05 mm (0.75 in.) diameter having a breaking strength of at least 2,449 kg (5,400 lb.), or material of equal strength;

- (b) be reeved through a block and tackle system comprising at least one double upper and one single lower block for each hanger;
- (c) have the hauling line secured to the point of the lower block hook by means of a "Painter's Hitch" or other accepted fastening device;
- (d) be free of knots or splices except for terminal eye-splices; and
- (e) not be used where exposed to the adverse effects of chemicals unless the rope is made of materials inert to the chemicals.

315. The total load on a suspension rope must not exceed 1/10 of the breaking strength of the rope.

316. Upper and lower block hooks must be moused or fitted with safety-latches, except that open lower block hooks may be used when "Painter's Hitches" are used to secure the hauling lines.

317. (1) Wire rope used to suspend swing stages or similar equipment must be of at least 7.94 mm (0.3125 in.) diameter improved plow steel, or equivalent.

(2) The total load on a suspension rope must not exceed 1/10 of the breaking strength of the rope.

(3) A suspension rope must be continuous and unspliced except for terminal eye-splices where required.

318. A winch or other mechanical device for hoisting and lowering swing stages and other suspended work platforms must be equipped with automatically operated locking mechanisms to prevent slipping or free running of the suspension ropes.

319. Hoist controls must be protected against inadvertent operation through physical contact or electrical malfunction through the intrusion of moisture.

320. (1) A swing stage must have

- (a) a guardrail approximately 91.44 cm (36 in.) in height on the outside edge of the platform; and
- (b) an intermediate rail.

(2) The minimum nominal dimensions of lumber used for fabricating guardrails are

- (a) 5.08 cm by 7.62 cm (2 in. by 3 in.), for vertical supports;
- (b) 5.08 cm by 10.16 cm (2 in. by 4 in.), for the top rail; and
- (c) 2.54 cm by 15.24 cm (1 in. by 6 in.), for the intermediate rail.

(3) The vertical supports of guardrails must be located at intervals not exceeding 3 m (10 ft.).

- 321.** A swing stage on which loose material or equipment is carried must have
- (a) toe-boards at least 20.32 cm (8 in.) in height on front and back sides; and
 - (b) wire netting of no greater mesh than 3.81 cm (1.5 in.) extending from the toe-board to the top guardrail on the back side.
- 322.** A swing stage and its associated equipment must be thoroughly inspected before use each day and no defective equipment shall be used.
- 323.** No person shall work on a swing stage that is 3 m (10 ft.) or more above grade unless he or she is attached to an independently anchored lifeline.
- 324.** (1) The number of persons on a swing stage shall not exceed the number of suspension lines unless the swing stage and suspension equipment have been designed to safely support a greater number of persons.
- (2) The safe load capacity must be clearly and permanently marked on a swing stage referred to in subsection (1).
- 325.** (1) No person shall use a swing stage having two or more working platforms at different levels without the permission of the Chief Safety Officer.
- (2) No person shall use a swing stage above or below another swing stage.
- 326.** Suspended work platforms other than swing stages must be installed, used and maintained in accordance with the instructions of the manufacturer, or in the absence of such instructions, in accordance with the instructions of a registered professional engineer or other person whose qualifications are acceptable to the Chief Safety Officer.
- 327.** (1) No work platform that is suspended from a crane or hoist shall be used without the prior approval of the Chief Safety Officer.
- (2) Platforms referred to in subsection (1) must
- (a) have their loaded weight accurately calculated by a qualified person, but in no case shall the loaded weight exceed 1/4 of the safe working load of the hoisting mechanism;
 - (b) have suspension slings and attachments rigged to a safety factor of 10;
 - (c) be equipped with guardrails, intermediate rails and toe-boards on open sides or must be enclosed to a height of 107 cm (42 in.);
 - (d) have supporting hooks or shackles safety-wired to prevent dislodgement;
 - (e) have no spreader bars interposed between the load hook and the platform;
 - (f) be suspended from cranes having power booms and from hoisting gear capable of being lowered under power;

- (g) not be suspended by free-running hoisting winches controlled only by brakes;
- (h) be hoisted and lowered at as low a speed as practicable;
- (i) have any dog-clutches in the hoisting winch drives secured against inadvertent disengagement;
- (j) be controlled by qualified operators who shall remain at the controls while the platform is suspended; and
- (k) be controlled by the standard code of hand signals or by effective radio or telephone communication and no movement shall be undertaken except on receipt of a clearly understood signal from the designated signalperson on the platform.

(3) The operator and any concerned person shall be informed in writing of the weight limit and any other limiting factors such as radius of lift.

(4) The occupants of work platforms suspended from cranes or hoists shall wear safety-belts secured to anchorages above the load hooks.

Trestles

328. (1) The spread of trestle legs must be equal to 1/2 the height of the trestle.

(2) Where folding trestles are used, means must be provided to prevent the legs from spreading or closing in.

329. (1) Trestles must be set securely on a firm footing.

(2) No person shall use extensions on the legs of a trestle.

330. No person shall use a trestle scaffold or single trestle in excess of 6.1 m (20 ft.) in height.

331. When placed in tiers, trestles must be placed directly over each other and must rest on planks at least 5.08 cm (2 in.) in nominal thickness.

332. (1) Tower and rolling scaffolds must be constructed and erected in accordance with the specifications and recommendations of the manufacturer.

(2) Applicable members must be utilized, including the diagonals in both the vertical and horizontal planes.

(3) Fasteners specified and recommended by the manufacturer must be properly installed and secured.

(4) Scaffolds with work platforms 3 m (10 ft.) or more above floor level must be equipped with guardrails and intermediate rails.

(5) Access to the platform must be gained by means of a fixed vertical ladder, stairway or hoist.

333. (1) At least two of the four wheels of a rolling scaffold must be of the caster type.

(2) The caster height adjusting pins or screws must be installed so that they cannot fall out or be inadvertently screwed out from their housings where a scaffold leg is raised clear of the floor and the pins or screws must not extend more than 2/3 of their total length or in excess of 30.48 cm (12 in.) from their housings.

334. (1) The wheels of a rolling scaffold must be provided with effective locking devices and must be kept locked when employees are required to work on the scaffold at heights in excess of 3 m (10 ft.).

(2) Wheels must be not less than 12.7 cm (5 in.) in diameter.

(3) When the scaffold is used near energized electrical equipment, the wheels must be fitted with non-conductive resilient tires.

(4) Where metal scaffolds are used in a situation where high electrical potential involved could result in capacitive or induced currents in the scaffold structure, the structure must be grounded.

335. (1) Scaffold planks must extend not less than 15.24 cm (6 in.) and not more than 30.48 cm (12 in.) beyond the end supports or bearers of the structure and must be fitted with means to retain the planks on the bearers.

(2) The entire area within the scaffold structure must be decked at those levels where workers work or ride unless guardrails are installed immediately around the perimeters of partially decked areas.

336. The height of a free-standing tower or rolling scaffold must not exceed three times the minimum dimension of the base unless the scaffold is securely tied or guyed to prevent overturning.

337. Where outriggers are fitted to increase the minimum base dimension of a scaffold they must be installed on both sides of the scaffold structure.

338. No person shall remain on a rolling scaffold while it is being moved by other persons if the platform height exceeds twice the minimum base dimension.

339. No person shall remain on a rolling scaffold while it is being moved by his or her own efforts if the platform height exceed 1.5 times the minimum base dimension.

340. The floor or surface on which a rolling scaffold is moved shall be within 3° of level and shall be free from holes, depressions or obstructions.

- 341.** A ladder-jack scaffold must
- (a) incorporate ladder-jacks of a type acceptable to the Chief Safety Officer;
 - (b) be used only on heavy duty ladders;
 - (c) be used only for light duty operations where the work period between changes of scaffold position is of short duration;
 - (d) not be used at heights in excess of 4.88 m (16 ft.) above grade unless safety-belts and lifelines are used;
 - (e) not be used by more than two workers at any one time; and
 - (f) have supporting ladders secured against movement.
- 342.** Ladder-jack scaffold stagings must
- (a) be not less than 5.08 cm by 30.48 cm (2 in. by 12 in.) nominal dimensions supported at intervals not exceeding 3 m (10 ft.) if solid planks are used;
 - (b) be not less than 30.48 cm (12 in.) in width supported at intervals not exceeding 7.32 m (24 ft.) if manufactured stagings are used; and
 - (c) not incorporate extension stagings.
- 343.** No person shall use a shore scaffold or a lean-to scaffold.
- 344.** (1) No person shall use a scaffold suspended by catenary wire ropes without the prior approval of the Chief Safety Officer.
- (2) An application to use a scaffold referred to in subsection (1) must include drawings of the complete installation and a certificate of a registered professional engineer confirming the adequacy of the installation.
- (3) The Chief Safety Officer shall, before giving his or her approval, require that
- (a) a safety factor of six must be achieved in the catenary ropes;
 - (b) rope spans must normally be limited to 15.24 m (50 ft.) but where longer spans must be employed, additional supports must be provided at 15.24 m (50 ft.) intervals;
 - (c) stagings directly supported by the catenary ropes must be secured to prevent dislodgement from the ropes and to prevent the falling of the staging if one catenary rope fails;
 - (d) stagings must be fitted with guardrails around their perimeters;
 - (e) workers on such stagings shall wear safety-belts secured to lifelines independently anchored to the structure except where adequate safety-nets have been installed; and
 - (f) a safe means of access to stagings is provided.

Boatswains' Chairs

345. A boatswain's chair must be suspended from four corners with the ropes crossed diagonally beneath the seat and must be provided with a body belt to secure the worker to the seat.

346. (1) Where a boatswain's chair is supported by blocks and tackle the rope must be not less than 15.88 mm (0.625 in.) diameter manila having a breaking strength of 1,996 kg (4,400 lb.) or must be material of equal strength.

(2) The rope must be reeved through not less than one single lower block and one double upper block and must be secured to prevent free running of the line.

(3) Block hooks must be moused or otherwise secured against dislodgement.

347. Wire rope used to suspend a boatswain's chair must be not less than 7.94 mm (0.3125 in.) diameter improved plow steel.

348. Where the occupant of a boatswain's chair does not manually hoist or lower the chair, he or she shall wear a safety-belt attached to a lifeline secured to a firm anchorage on the structure.

Work on Roofs

349. (1) Roof-jacks must be substantially constructed and maintained in good condition.

(2) Roof-jacks must be provided with effective non-slip devices.

350. (1) Crawl boards or ladders used for roof work must be securely fastened over the ridge of the roof or must be otherwise effectively anchored.

(2) No person shall use eavestroughs to support a ladder or crawl board.

351. Where a person is employed on a roof having a pitch of 1/3 (slope ratio 10.16 cm (4 in.) vertical to 30.48 cm (12 in.) horizontal) or greater, 5.08 cm by 15.24 cm (2 in. by 6 in.) toeholds must be employed and the worker shall wear a safety-belt secured to a firmly anchored lifeline.

352. Where it is necessary to work on asbestos cement roofing or on other brittle material incapable of supporting workers, safe access and safe working platforms must be provided by means of wooden catwalks and decking spanning the roof framing.

Construction Procedures

353. (1) In the erection of buildings or structures, temporary floors, decking, form work or safety-nets must be installed as the work of erection progresses.

(2) Where no safety-nets are used a temporary floor must be installed at the working level, or if not practicable, as close as possible to the working level.

(3) A temporary floor must completely cover the work area except for openings necessary for the movement of workers and materials but such openings must be effectively guarded.

354. (1) Where structural framework is erected in advance of external walls workers must be protected from injury through falling from the unguarded portions of the perimeter of the structure at elevations 3 m (10 ft.) or more above grade.

(2) The protection referred to in subsection (1) must be provided by means of barriers, guardrails, fibre or wire guard ropes, safety-belts and lifelines, personnel safety-nets or other effective means.

(3) Perimeter guards must be in conformity with the requirements of these regulations and the presence of wire rope guards must be indicated by coloured markers attached at intervals not exceeding 3 m (10 ft.).

355. A floor opening that constitutes a hazard to workers must

- (a) be securely covered;
- (b) have a guardrail, complete with intermediate rail and toe-board, enclosing the exposed sides; or
- (c) have personnel and material safety-nets installed below the opening.

356. (1) Where there is a danger of material falling into work areas

- (a) such areas must be barricaded against entry by workers and warning signs must be prominently displayed on sides and approaches;
- (b) protective canopies must be installed; or
- (c) catch platforms must be provided, which shall
 - (i) be installed not more than 7.62 m (25 ft.) below the level from which material may fall,
 - (ii) extend outward from the structure for a distance of not less than 2.44 m (8 ft.),
 - (iii) slope inward toward the structure, and
 - (iv) be equipped with baffles to prevent the ricochet of material into the interior of the structure.

(2) Baffles are not required where material nets are used as catch platforms.

357. (1) Adequate work platforms having safe means of entry must be provided and used on bridges and similar structures.

(2) Subsection (1) does not apply to operations involving the erection and connection of steel or preformed concrete members where it is impracticable to provide work platforms or safe means of access or where safety-belts and lifelines or personnel safety-nets are employed.

358. No person shall walk on beams on which shearhead (nelson) studs have been installed until adequate and unobstructed walkways have been provided.

359. (1) On construction projects and similar work over water, powered rescue boats must be kept on the downstream side of the work during working hours.

(2) Boats must have a trained crew who are equipped and capable of effecting the rescue of workers falling into the water.

(3) Where boats cannot be used effectively, personnel safety-nets must be installed or other effective means of rescue must be provided.

360. Where the use of personnel safety-nets is required, the safety-nets must

- (a) extend at least 2.44 m (8 ft.) horizontally from the areas to be protected;
- (b) be positioned not more than 7.62 m (25 ft.) below work areas to be protected;
- (c) be tested after installation and regularly after that for their ability to withstand the maximum loads that might be imposed on them and such tests must be conducted in accordance with the recommendation of the manufacturer or as the Chief Safety Officer directs; and
- (d) be installed to provide adequate clearance from objects and surfaces below them when stretched under rated loads.

361. (1) Stairways having at least framing, treads and handrails must be installed to provide safe access to each floor level before construction of subsequent storeys is undertaken.

(2) Treads on stairways must not create tripping or slipping hazards.

Industrial Chimneys and Hoists

362. (1) This section applies to chimneys, stacks, silos and similar structures that are constructed progressively upward and on which scaffolds are raised with the structure.

(2) In the construction and repair of structures referred to in subsection (1) the following shall apply:

- (a) adequately supported work platforms must be installed to meet the requirements of these regulations;
- (b) a suspended work platform must be rigged or fastened to prevent it from swaying away from the structure;
- (c) standard guardrails, intermediate rails and toe-boards must be installed on all work platforms or if not practicable, workers shall wear safety-belts and lifelines or personnel safety-nets must be installed;
- (d) safe means of access to work platforms must be provided;
- (e) no access ladders must be attached to lightning arrester insulators unless the insulators have been designed to provide the necessary strength.

(3) Where safe access to work platforms cannot be provided by means of stairs or ladders, the Chief Safety Officer may authorize the use of a hoist meeting the requirements of these regulations respecting hoists.

363. The use of helicopters in the erection or repair of structures shall be governed by the following:

- (a) operational procedures must be planned in detail by competent and experienced persons;
- (b) workers employed on such operations shall be adequately instructed and supervised;
- (c) helicopter pilots shall be competent in the type of work and shall be responsible for determining if the operation can be carried out safely under prevailing conditions;
- (d) no operation shall be initiated without effective radio communication among pilots, ground crew, erection crew and supervisors;
- (e) alternative hand signals shall be rehearsed in advance but shall be used only to complete an operation in the event of radio failure when the aircraft has been committed to a point which precludes termination of the operation;
- (f) no person shall board or leave a hovering helicopter from or to a structure 3 m (10 ft.) or more above grade;
- (g) helicopters must be equipped with both electrically and mechanically operated load release mechanisms to permit instant release of the load in an emergency;
- (h) due care and attention shall be paid to workers on the ground when loads are released;
- (i) appropriate personal protective equipment including head and eye protection, shall be worn by workers employed near an operating helicopter.

364. (1) A glass panel installed during construction or alteration must be marked at the time of installation to clearly indicate its presence.

(2) Glass that may be damaged by the application of markings must be guarded by barricades or by other effective means.

365. (1) A thrust-out crane landing platform must be designed to support a static load equal to 1.5 times the maximum safe working load of the crane or hoist from which it receives material and the design capacity must be clearly marked on the platform.

(2) Platform decking and supporting members must be designed to support safely any concentrated loads likely to be landed.

(3) Platforms of wooden construction must be designed, constructed and installed in conformity with instructions issued by the Chief Safety Officer.

(4) Platforms of wood or metal construction must, before installation, be certified as to adequacy by a registered professional engineer and such certification must be available on the job site.

(5) Platforms that are 3 m (10 ft.) or more above grade must be fitted with substantial guardrails around their open sides.

(6) Where circumstances preclude the installation of guardrails, workers employed on the platform shall wear safety-belts securely anchored to the building.

366. Concrete forms, falsework, shoring and reshoring must be designed and constructed to maintain structural integrity and stability under any loads likely to be imposed on them and provision must be made, where necessary, for the acceptance of concentrated loads resulting from temporary storage of materials or equipment.

367. Designs of forms and shoring must

- (a) specify the size, type, grade and location of components and the loads that the structure is intended to withstand;
- (b) bear the signature of a registered professional engineer or other person acceptable to the Chief Safety Officer when the concrete structure is 3 m (10 ft.) or more in height; and
- (c) be kept on the job site while the temporary supporting structure is under construction or use.

R-028-93,s.8.

368. (1) Temporary supporting structures must be erected on adequate sills or pads, that rest on properly compacted and stable bases.

(2) Care must be taken to prevent deterioration in soil load bearing capacity through weather or other causes.

- 369.** Manufactured forming and shoring components must be used in accordance with the instructions of the manufacturer.
- 370.** Formwork and shoring must be thoroughly inspected immediately before, during and after concrete pouring operations are undertaken.
- 371.** Workers who are not engaged in the installation shall be excluded from formwork construction areas.
- 372.** Guardrails must be installed around the perimeter of formwork that is 3 m (10 ft.) or more above grade or when the formwork construction has progressed to a point where workers are exposed to the danger of falling.
- 373.** The protruding ends of reinforcing rods must be effectively guarded if they constitute a hazard to workers.
- 374.** No loads shall be applied to uncured concrete structures except as permitted by the design specifications.
- 375.** The stripping of formwork from concrete structures must be conducted in an orderly manner designed to minimize risk of injury to workers.
- 376.** No forming material shall be piled or stored in a manner that prevents safe entry to working areas.
- 377.** Workers engaged in stripping operations shall wear suitable head, hand and foot protective equipment and adequate illumination of working and access areas must be provided.
- 378.** Concrete structures must be progressively reshored during and after the stripping operation as required by the design specifications.

Electrical Installations

- 379.** (1) Temporary electrical services and connections must be made in accordance with the *Electrical Protection Act* and regulations under that Act.
- (2) Doors or covers of electrical equipment must be kept closed while the equipment is energized.

Demolition

380. (1) When a structure is to be demolished in whole or in part, every adjoining structure, the integrity of which could be affected by the demolition, must be supported to the extent and in the manner directed by a registered professional engineer or other person acceptable to the Chief Safety Officer.

(2) The design of the required support system must include a schedule based on the stages of demolition for installation of the components of the support system.

(3) A copy of the support system plan must be kept on the job site.

381. No building shall be demolished in a manner that exposes workers to unnecessary risk.

382. Potentially hazardous services to the structure must be disconnected before the commencement of demolition.

383. Where workers are at risk, glass and sash must be removed before other demolition is started, and demolition must proceed in an orderly manner from the top to the bottom of the structure.

384. No masonry wall or other section of masonry must be permitted to fall or remain on the floors of the building in such masses as to exceed the safe carrying capacity of the floors.

385. Before demolishing an interior or exterior wall that is within 3 m (10 ft.) of an opening in the floor immediately below, the opening must be substantially planked over unless workers are removed from the floors below and entry to such floors is prevented.

386. No wall shall be left standing in a dangerous or unstable condition.

387. (1) Steel structures must be demolished column length by column length and tier by tier.

(2) No structural member being dismantled shall be placed under stress other than its own weight, and the member shall be chained or lashed in place to prevent uncontrolled swinging or dropping.

(3) No structural member shall be thrown or dropped from the building but must be carefully lowered.

388. (1) No person shall allow material and debris to accumulate on floors or on the ground immediately outside the building.

(2) When material is to be dropped or thrown from upper floors, the area into which the material falls must be barricaded to prevent the entry of workers and warning signs must be displayed about the area.

389. Chutes provided for the removal of bricks, rubble and loose debris must be completely enclosed and must be fitted with gates or stops at each point of entry and discharge.

390. (1) Chutes must discharge into containers or into areas that have been barricaded to prevent the entry of workers.

(2) Warning signs bearing the legend "Danger - Chute - Sliding Materials" must be posted adjacent to chute outlets.

391. Suitable scaffolds must be provided and used by workers engaged in the removal of part of a building or structure that is 3 m (10 ft.) or more above a floor or grade, but if not practicable, safety-belts and lifelines or safety-nets must be used.

392. A floor opening into which a person may fall or slip must be fitted with guardrails and toe-boards or must be securely covered.

393. Stairways must be left intact complete with handrails until access to the level they serve is no longer required.

394. A worker on a demolition project shall wear head, hand and foot protection appropriate to the hazards.

395. Construction sheds and tool boxes must be located remote from the hazard of falling material.

Excavations

396. (1) Excavation work must be carried out in accordance with the specifications and requirements of

- (a) a registered professional engineer or other person acceptable to the Chief Safety Officer; or
- (b) the Chief Safety Officer.

(2) The sides of excavations must be sloped or supported in accordance with the designs and instructions of a registered professional engineer or other person acceptable to the Chief Safety Officer where the excavation

- (a) exceeds 6.1 m (20 ft.) in depth;
- (b) is adjacent to structures or improvements; or
- (c) is subject to vibration or hydrostatic pressure.

(3) A signed copy of the supporting or sloping plan must be kept on the job site.

- 397.** Before commencing excavation work with power tools or equipment in an area likely to have underground conduits, cables or pipelines, the location of such service facilities must be accurately determined.
- 398.** The use of powered equipment must be directed to avoid damage to service facilities where workers might be exposed to hazards.
- 399.** Trees and boulders located within or close to an area to be excavated must be removed before the start of excavation work.
- 400.** Where the instability of utility poles is likely to create a hazard, they must be adequately supported or removed under the direction of the responsible authority.
- 401.** No person shall enter an excavation over 1.22 m (4 ft.) in depth unless
- (a) the sides of the excavation are sloped to a safe angle;
 - (b) the sides are supported by the use of sheet piling or shoring and bracing meeting the minimum standards set out in these regulations; or
 - (c) the person is protected by other effective means.
- 402.** Sloping of the sides of excavations may be undertaken in lieu of shoring only where the protection afforded to workers is equivalent to that provided by shoring.
- 403.** Where excavation walls are sloped as a substitute for shoring, the walls must be sloped at angles that, dependent on soil conditions, will provide stable faces and in no case shall such a slope be steeper than 75%.
- 404.** (1) When shoring is installed or removed, the work procedure must ensure that no person is exposed to undue hazards.
- (2) In general, shoring must be installed from the top down and must be removed in reverse order.
- 405.** Shoring uprights must extend from at least 30.48 cm (12 in.) above ground level to as close to the bottom of the excavation as permitted by the material being installed in the excavation but in no case more than 60.96 cm (2 ft.) from the bottom.
- 406.** (1) Timber shoring materials must be construction or No. 1 structural or better grade lumber.
- (2) Species must be limited to douglas fir-larch, hem-fir, spruce-pine-fir or coast sitka spruce.

(3) Lumber must be graded according to *National Lumber Grades Authority Rules* or by other approved grading rules.

(4) Lumber must be grade stamped by an approved agency.

407. A trench support structure, other than one designed by a professional engineer, must be constructed in conformity with Schedule D.

408. Cross-braces and trench jacks must be installed in a horizontal position and must be secured against dislodgement.

409. At least two cross-braces must be installed between each pair of opposite uprights, and the upper cross-braces must be installed within 60.96 cm (2 ft.) of ground level.

410. Cross-braces must be installed in accordance with the following table:

<u>Trench depth (m (ft.))</u>	<u>Number of braces</u>
Up to 2.44 (8)	2
Over 2.44 (8) but not over 3.66 (12)	3
Over 3.66 (12) and up to 4.57 (15)	4

411. Steel trench jacks may be substituted for timber cross-braces and must be no smaller than shown in the following table:

<u>Wood brace nominal dimensions (cm (in.))</u>	<u>Pipe brace diameter (cm (in.))</u>
10.16 x 10.16 (4 x 4)	3.81 (1.5) Standard
10.16 x 15.24 (4 x 6)	5.08 (2) Standard
15.24 x 15.24 (6 x 6)	5.08 (2) Standard
15.24 x 20.32 (6 x 8)	7.62 (3) Standard
20.32 x 20.32 (8 x 8)	7.62 (3) Standard

412. Hydraulic or pneumatic trench jacks of equivalent strength may be substituted for timber cross-braces or steel trench jacks but means must be provided to ensure that hydraulic or pneumatic jacks will not collapse in the event of loss of internal pressure.

413. Uprights must not be inclined outward more than 15° from the vertical, when viewed along the trench.

414. Sheet steel piling on equal strength may be substituted for tongue and groove wood sheeting.

- 415.** Plywood may be substituted for 5.08 cm (2 in.) shoring elements if
- (a) the plywood is not less than 19.05 mm (0.75 in.) in thickness;
 - (b) the trench is not over 3 m (10 ft.) in depth; and
 - (c) uprights are installed at not over 60.96 cm (24 in.) centres.
- 416.** Trench support systems must be inspected daily or more frequently if required and must be maintained in fully effective condition.
- 417.** Where
- (a) equipment or other heavy objects are located or operated close to the edge of excavations,
 - (b) excavations are adjacent to or abutting buildings or other structures, or
 - (c) a hazard is created by vibration from nearby equipment or from passing vehicular traffic,
- the added loads must be considered in the design of the excavation support system.
- 418.** Where there is a danger of undermining adjacent foundations, excavation work must be done in short sections and the building walls must be effectively shored or braced.
- 419.** Where workers are required to enter an excavation over 1.22 m (4 ft.) in depth a ladder must be provided in the immediate area where workers are employed.
- 420.** The ladder referred to in section 419 must extend from the bottom of the excavation to at least 0.9144 m (3 ft.) above ground level. R-028-93,s.9.
- 421.** Walkways giving access to excavations must
- (a) be not less than 50.8 cm (20 in.) wide;
 - (b) be equipped with guardrails, when 1.22 m (4 ft.) or more above grade; and
 - (c) be in conformity with the requirements of these regulations.
- 422.** Runways must be equipped with curbs where used by mobile equipment.
- 423.** Excavated material shall not be placed closer than 0.6096 m (2 ft.) from the edge of a trench excavation and 1.22 m (4 ft.) from any other excavation. R-028-93,s.10.
- 424.** Where a skip or bucket is used to remove material from an excavation, horizontal shoring members must be protected against dislodgement by the installation of vertical planking.
- 425.** (1) Where work is being carried on in an excavation the slopes must be scaled and trimmed or otherwise stabilized to prevent slides of material or falls of rock.

- (2) Overhanging banks and dangerous trees and stumps must be removed.
- (3) Means must be provided to prevent the dangerous erosion of slopes by surface water.
- 426.** In a pit, quarry or similar excavation the height of an unstable face must not exceed the maximum safe reach of the excavating equipment being used.
- 427.** (1) Workers engaged in scaling, sloping or trimming banks or faces shall use safety-belts attached to firmly anchored lifelines.
- (2) Scaling and work of a similar nature must be undertaken from the top down and the areas into which material will fall must be kept clear of workers and equipment.
- 428.** Where possible, power machines excavating banks must be so placed that the operator is on the side away from the bank.
- 429.** Where an excavation constitutes a hazard to workers it must be covered or substantial guardrails or barriers must be installed around the exposed sides.
- 430.** Walkways across excavations must
- (a) be not less than 50.8 cm (20 in.) wide; and
 - (b) when installed across trenches 3 m (10 ft.) or more in depth, have guardrails on both sides.
- 431.** Precautions must be taken to ensure that the atmosphere in an excavation where workers are employed is free from hazardous amounts of dust, vapour and gas and contains sufficient oxygen to obviate danger to the health of workers.
- 432.** Means must be provided to prevent the accumulation of water in excavations.

Construction Towers and Hoists

- 433.** Towers and hoist shafts must
- (a) be placed on firm foundations;
 - (b) be substantially built; and
 - (c) be securely braced or guyed against swaying, twisting or tipping.
- 434.** Where booms, hoppers or similar equipment are attached to a tower or hoist shaft, additional support must be provided commensurate with increased loads at those points.
- 435.** The net rated hoisting capacity of a hoist must be clearly and durably marked on the structure and must not be exceeded.

- 436.** The requirements of these regulations regarding the manufacturer's manuals, maintenance records and equipment identification are applicable to construction towers and hoists.
- 437.** Access to a construction tower must be provided by means of ladders extending from the base to the top of the tower where safe access from the adjoining structure is not practicable.
- 438.** Hoist shaftways must be enclosed to a height of at least 1.83 m (6 ft.) at each landing except for the side used for loading or unloading.
- 439.** Where the hoist platform is exterior to the supporting tower the lower landing must be fully enclosed or must be fitted with standard guardrails on each side to exclude workers from the area beneath the platform.
- 440.** (1) An entrance to a hoistway must be guarded by a substantial gate not less than 183 cm (72 in.) in height located not more than 10.16 cm (4 in.) from the edge of the hoistway.
- (2) Gates may be fitted with solid or meshed panels.
- (3) Meshed panels must have openings not exceeding 5.08 cm (2 in.) in any dimension.
- (4) Gates must open inward or must slide horizontally or vertically.
- (5) Positive latches must be installed.
- 441.** A hoist exceeding 21.3 m (70 ft.) in height must be fitted with an interlock system designed to
- (a) prevent the inadvertent movement of the hoist platform when the gate is open at the level of the platform; and
 - (b) prevent the opening of a gate when the hoist platform is at another level.
- 442.** Where there is a possibility of material falling onto hoist platform entrances, substantial coverings must be provided over the entrances.
- 443.** Hoist platforms exterior to the supporting tower must be fitted with standard guardrails and toe-boards on each side.
- 444.** Runways to hoists must
- (a) have substantial floors at least equal in width to the loading side of the hoist platforms;

- (b) be fitted with curbs; and
- (c) be fitted with standard guardrails if 1.22 m (4 ft.) or more above grade.

445. Where hoist winch drums are fitted with ratchet and pawl mechanisms, these must be clearly visible and accessible to the operator.

446. (1) A winch must be equipped with a brake capable of controlling the speed of lowering and of sustaining at rest a load equal to 1.5 times the rated capacity of the hoist.

(2) Electrically operated brakes must be so arranged that the brakes are applied automatically in the event of power failure.

447. (1) Braking and operating mechanisms must be so arranged that the brakes are applied whenever the operating lever, handle or switch is not in the operating position.

(2) Operating controls must be of the "deadman" type, designed to return to neutral position when released.

448. A hoist must be equipped with a device that will prevent the platform from falling in the event of hoisting rope failure.

449. A hoist must be equipped with a device that automatically stops the platform at the upper and lower limits of travel and that will prevent platform motion under overload conditions.

450. A sheave must be fitted with a device to retain the rope within the grooves.

451. The erection, maintenance and dismantling of hoist towers must be performed by or under the supervision of workers experienced in such work.

452. (1) Daily tests of control devices of a hoist must be carried out and recorded.

(2) Inspections of the complete hoist installation must be carried out and recorded weekly unless required more frequently by the manufacturer.

453. (1) A hoist that is powered by an internal combustion engine and a hoist that is not equipped with automatically applied brakes must be fitted with spring loaded pawls engaging ratchets on the winch drums.

(2) The operator shall ensure that the pawls are engaged whenever material is being placed on or removed from the hoist platform.

454. No person shall ride on a construction hoist platform except as necessary for inspection and maintenance purposes.

455. A construction hoist must have conspicuously displayed in or on the cage or platform and at each landing a notice stating that no person shall ride on the equipment.

456. (1) Hand signals may be used to control hoist operations not exceeding 21.3 m (70 ft.) in height where the operator has a clear and unobstructed view of hoist landings and of the signalperson.

(2) The code of signals authorized by the Chief Safety Officer must be used.

457. (1) Where the operator does not have a clear and unobstructed view or where the hoist is more than 21.3 m (70 ft.) in height, a signal system must be installed at hoist landings and at the operator's position.

(2) The system must be designed to inform the operator of the level from which the signal originates.

458. Where a hoist is over 21.3 m (70 ft.) in height or where hoist landings are clearly visible to the operator, means must be provided to indicate the floor level of the platform.

459. Where bell or light signals are used to control the movements of the hoist platform, the following signals must be used:

- (a) one bell or light Stop;
 - (b) two bells or lights Raise;
 - (c) three bells or lights Lower;
 - (d) four bells or lights All clear.
- R-072-95,s.2.

460. No hoist operator shall move a hoist until he or she is informed by signal that the equipment is clear for movement.

461. In the construction of chimneys and similar structures where safe access to work platforms cannot be provided by means of stairs or ladders, a material hoist may be used to provide access for workers subject to prior inspection and acceptance by the Chief Safety Officer and subject to the following conditions:

- (a) a passenger in a bucket or skip shall wear a safety-belt secured to the hoisting cable above the load hook or alternatively a cage having a capacity of not more than two persons may be employed but no open hooks shall be used and shackle-pins shall be secured against dislodgement;
- (b) the bucket, skip or cage must be prevented from falling in the event of hoisting cable failure by means of automatically applied arresting devices operating on at least two separate guide cables;
- (c) a safety factor of 10 must be achieved in suspension and guide cables, supporting structures, slings and metal fittings;

- (d) the hoisting winch must be equipped with a positive drive and there must be no clutch between the transmission and the hoisting cable drum;
- (e) the hoisting winch must be equipped with two independent braking systems one of which must be applied automatically when the controls are in the neutral position;
- (f) the hoist controls must be of the "deadman" type, designed to return to the neutral position when released;
- (g) each unit must be provided with upper and lower terminal stopping devices arranged to automatically stop the bucket, skip or cage at normal speed within the top and bottom travel limits;
- (h) the hoisting equipment must be provided with a governing device that prevents the drum speed from exceeding 120% of the designed speed but in no case shall workers be raised or lowered at a speed greater than 76.2 m (250 ft.) a minute;
- (i) the safe working load must be plainly marked on the bucket, skip or cage;
- (j) no more than two persons shall be raised or lowered at one time and no material, equipment or supplies shall be raised or lowered with a worker;
- (k) the structure supporting the cage together with the hoisting gear and equipment must be of good mechanical construction, in accurate alignment, securely anchored and of sufficient strength and stability to safely withstand imposed stresses;
- (l) the hoist operator shall be provided with an effective means of communication with each landing;
- (m) landings 3 m (10 ft.) or more above grade must be fitted with gates, hinged guardrails or hinged covers;
- (n) the lower landing must be enclosed by perimeter guardrails and a gate;
- (o) gates must be kept closed, except at the landing where the bucket, skip or cage is located for loading or unloading purposes.

462. The hoist and its associated equipment must be inspected, maintained and tested in accordance with the instructions of the manufacturer, copies of which must be kept on the job site.

463. (1) An operator's log book must be kept on the job site for the purpose of recording regular and special inspections, unsatisfactory working conditions, repairs, adjustments, tests conducted and unusual circumstances.

(2) An entry in the log book must be dated and signed by the person making the entry.

464. (1) The operator of a hoist is responsible for keeping the load within safe limits.

(2) When the operator has doubt as to the safety of the equipment, the safe condition of the load, or the behaviour of the passengers, the operator shall refuse to operate the hoist and shall immediately report the condition to his or her supervisor, who will then be responsible for determining the action to be taken.

(3) No operator shall leave the hoist controls unattended unless the bucket, skip or cage is at grade level.

Traffic Control

465. (1) Effective means of traffic control must be provided whenever the unregulated movement of vehicular traffic constitutes a hazard to workers.

(2) Means of traffic control may include patrol vehicles, traffic lights, signs, barricades, cones, detours, flagpersons or other techniques and devices suitable under prevailing circumstances.

(3) Traffic control procedures and equipment shall conform with the current regulations of the following authorities:

- (a) on public highways – the *Motor Vehicles Act*;
- (b) in municipally controlled areas – the municipal authority having jurisdiction;
- (c) in unorganized areas, or where no municipal or other regulations exist – the Chief Safety Officer.

466. Firms providing professional traffic control services may employ other systems, equipment and procedures than specified in these regulations if they are acceptable to the Chief Safety Officer.

467. Barricades, cones and other devices must be spaced at not more than 30.48 m (100 ft.) intervals, decreasing to 7.62 m (25 ft.) or less in the immediate vicinity of work operation and must be located to give motorists adequate warning, avoiding the need for sudden stops.

468. Operations or equipment encroaching on the travelled portion of a highway must be protected by suitable signs, lights, barricades, flagpersons or other effective devices.

469. Control devices must be put into operation before the commencement of operations and must be removed when the need for the devices has terminated.

Flagpersons

470. Flagpersons shall be employed in the following situations:

- (a) where traffic is required to pass working vehicles or equipment that may block all or part of a travelled roadway;

- (b) where it is necessary to institute a one-way traffic system through a construction area where traffic volumes are heavy or approach speeds are high and a traffic signal system is not in use;
- (c) where construction vehicle traffic cannot be co-ordinated with the existing traffic system;
- (d) where an existing signal light system is not adequate to regulate traffic;
- (e) where the work abuts or projects into an intersection so as to interfere with regular traffic movements;
- (f) where workers or equipment are employed on a travelled roadway over the brow of a hill, around a sharp curve or at any other location where on-coming traffic would not otherwise have adequate warning of their presence;
- (g) in high speed, high volume areas where temporary protection is required while other traffic control devices are being erected or taken down;
- (h) for emergency protection when other traffic control devices are not readily available;
- (i) in every situation where adequate protection for workers, working equipment and traffic is not provided for by other traffic control devices.

471. Flagpersons shall be responsible persons who have been instructed in and have demonstrated an adequate knowledge of traffic control and flagging procedures.

472. Flagpersons shall not engage in needless conversation or depart from their points of duty until relieved.

473. Where two or more flagpersons are working as a team, one shall be made responsible for traffic co-ordination and for the initiation of changes in the direction of traffic flow and shall determine the duration of slow in each direction of travel in order to create a cycle that results in minimum traffic delay and maximum protection of workers.

474. Where two flagpersons work as a team, the stations of the flagpersons must not be located less than 15.24 m (50 ft.) from the work area except where space requirements dictate otherwise when working at or near an intersection.

475. Except for brief flagging operations, "Flagpersons Ahead" signs shall be posted in advance of each flagperson's station and such signs must be removed promptly where the flagging operation ends.

476. A flagperson shall be provided with and shall use

- (a) a flagperson's stop and slow paddle;
- (b) a blaze red or blaze orange flagperson's vest, poncho or jacket fitted with at least one horizontal white reflectorized stripe that

- shall be worn outside other clothing, or other apparel acceptable to the Chief Safety Officer;
- (c) safety headgear fitted with strips of white reflectorized tape about the crown; and
- (d) a means of communication for flagpersons in the same team where two flag stations are not intervisible but under no circumstances shall a system of passing batons or tokens be used to signify the last vehicle in a line travelling through a single-lane control zone.

477. During the hours of darkness or in conditions of poor visibility a flagperson shall be provided with and shall use

- (a) a flagperson's stop and slow paddle, with both faces reflectorized; and
- (b) a flashlight fitted with a red signalling baton.

478. (1) Where flagpersons at opposite ends of a restriction use visual signs between themselves to assign changes in directional traffic flow, the signals shall be predetermined and shall not be such as to be mistaken for traffic flagging signals.

(2) The following standard flagging signals shall be used and given in a clear and precise manner:

- (a) to instruct a fellow flagperson to halt traffic, raise the free hand with fist clenched, straight above the shoulder, then wave the entire arm slowly from the upright position directly out to the side at shoulder height;
- (b) to indicate an all clear situation and instruct a fellow flagperson that he or she may allow traffic to proceed, raise the free hand directly out to the side at shoulder height, then lower the entire arm until it rests against the side of the body;
- (c) to indicate the approach of an emergency vehicle or a vehicle about to enter the control zone out of the operator's control, drop the stop and slow paddle, raise both arms to the side at shoulder height, then rapidly wave both arms from the shoulder level to a point above the head where the wrists will cross and continue until the fellow flagperson is seen to take necessary action.

(3) A flagperson shall stand in a safe position, preferably on the driver's side of the lane used by traffic under his or her control, where he or she will be clearly visible and where he or she has an unobstructed view of approaching traffic.

(4) A flagperson shall use normal signals when stationed on the left side of the lane used by traffic under his or her control and alternate signals shall be used only when the flagperson is stationed on the right side of traffic under his or her control.

(5) To stop traffic in daylight the flagperson shall face approaching traffic and shall extend his or her left arm horizontally across the approach lane holding the flagperson's paddle upright in the left hand, with the "Stop" side facing approaching traffic.

(6) When an approaching vehicle has almost stopped the right arm shall be used to indicate the point at which vehicles are required to stop.

(7) To stop traffic during the hours of darkness, the flagperson shall assume the same basic position as for the day signal but shall hold a reflectorized paddle in his or her left hand and a flashlight, with a red signalling baton attached, in his or her right hand.

(8) The right arm shall be moved slowly back and forth between limits corresponding to the third and sixth hour positions on a clock face.

(9) When an approaching vehicle has almost stopped, the flashlight and baton shall be used to indicate the point at which the vehicle is required to stop.

Normal Signal to Slow Traffic

479. (1) To slow traffic in daylight the flagperson shall take up a position similar to the one used for the signal to stop, but with the "Slow" side of the paddle facing approaching traffic.

(2) To slow traffic in darkness the same position and motions shall be assumed as for the night stopping signal except that the "Slow" side of a reflectorized paddle shall face approaching traffic.

(3) If either the day or night signal results in traffic slowing to a speed below that required the appropriate signal set out in section 480 shall be given.

480. (1) To move traffic in daylight the flagperson shall

- (a) face across the approach traffic lane;
- (b) look across his or her right shoulder at the traffic he or she is about to move; and
- (c) rotate the lower right arm in an elliptical manner corresponding to the direction in which the vehicle wheels will rotate.

(2) If traffic is required to proceed slowly the flagperson shall extend his or her left arm horizontally towards the approach lane with the "Slow" side of the paddle facing traffic.

(3) If traffic is allowed to proceed at the prevailing speed limit the flagperson shall lower his or her left arm so that the paddle is hidden from view and shall motion traffic with his or her right arm at shoulder level.

481. (1) To move traffic in darkness the same signals as for daytime shall be used except that a reflectorized paddle shall be substituted and a flashlight with a red baton attached shall be used in the right hand.

(2) The order to proceed or to proceed slowly may also be given verbally.

482. (1) The flagperson's paddle shall not be used to wave traffic on and shall never be displayed to traffic in other than a static manner.

(2) Motions of the flagperson's arms shall be performed precisely and unhurriedly during both day and night so that the meaning or signals given cannot be misunderstood.

483. Where traffic is diverted onto dusty surfaces, good visibility must be maintained by the suppression of dust through the periodic application of oil or water to the grade surface.

PART VI

MISCELLANEOUS

Commercial Diving Operations

484. (1) In this section, "commercial diving operation" means any diving activity conducted under water by a person or persons for compensation.

(2) The Canadian Standards Association Standards CAN/CSA-Z275.2-92 *Occupational Safety Code for Diving Operations* and CAN/CSA-Z275.4-97 *Competency Standard for Diving Operations*, are adopted in respect of commercial diving operations.

(3) Where a commercial diving operation is carried out it shall be carried out in accordance with the standards adopted under subsection (2). R-072-95,s.3;
R-021-2000,s.4.

SCHEDULE A

(Table 1: Subsection 22(1)
Tables 2 and 3: Subsection 26(1),
subsection 194(1), section 195,
subsections 196(1), (2) and 197(1),
sections 199, 201 and 204)

1. (1) In this Schedule,

"8-hour Occupational Exposure Limit" means the time-weighted average concentration of an airborne substance for an 8-hour period; (*limite d'exposition en milieu de travail pendant 8 heures*)

"15-minute Occupational Exposure Limit" means the time-weighted average concentration of an airborne substance for a 15-minute period; (*limite d'exposition en milieu de travail pendant 15 minutes*)

"ceiling Occupational Exposure Limit" means the maximum concentration of an airborne substance; (*limite maximale d'exposition en milieu de travail*)

"dBA" means a measure of sound level in decibels using a reference sound pressure of 20 µPa when measured on the A weighting network of a sound level meter; (*dBA*)

"impulse noise" means sounds with

- (a) rise times of not more than 35 milliseconds to peak intensity,
- (b) durations of not more than 500 milliseconds between the time when peak intensity is reached and the time when the sound level decays to 20 dB below peak intensity, and
- (c) maxima at intervals of greater than one second; (*bruit impulsif*)

"mg/m³" means milligrams of substance per cubic metre of air measured at standard conditions of 25°C and 100 kPa; (*mg/m³*)

"ppm" means parts of vapor or gas by volume per million parts of contaminated air by volume; (*mg/l*)

"respirable mass" means that weight of the total airborne particulate which can be inhaled and deposited in the lower respiratory tract; (*masse inhalable*)

"skin" when it appears in conjunction with a substance in Schedule A means the substance can be absorbed through the intact skin. (*voie cutanée*)

(2) For the purposes of calculating the 15-minute Occupational Exposure Limit in Table 2 of Schedule A

- (a) not more than four 15-minute periods shall be permitted per shift; and
- (b) there must be at least 60 minutes between each period referred to in paragraph (a).

TABLE 1

A. OCCUPATIONAL EXPOSURE LIMITS (NOISE)

Sound Level (dBA)	Maximum Permitted Duration (hours per day)
(Figures to be prorated if not specified)	
80	16
85	8
90	4
95	2
100	1
105	0.50
110	0.25
115	0.125
greater than 115	0

B. OCCUPATIONAL EXPOSURE LIMITS (IMPULSE NOISE)

Peak Sound Pressure Level (decibels)	Maximum Permitted (impulses per 8-hour day)
(Figures to be prorated if not specified)	
120	10,000
130	1,000
140	100
greater than 140	0

TABLE 2

SUBSTANCE	8-hour Occupational Exposure Limit		15-minute Occupational Exposure Limit		ceiling Occupational Exposure Limit	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Abate	---	10	---	20	---	---
Acetaldehyde	100	180	150	270	---	---
Acetic acid	10	26	15	39	---	---
Acetic anhydride	---	---	---	---	5	21
Acetone	1000	2370	1250	2970	---	---
Acetonitrile - Skin	40	67	60	100	---	---
Acetylene dichloride (1,2-Dichloroethylene)	200	795	250	995	---	---
Acetylene tetrabromide	1	14	1.5	21	---	---
Acrolein	0.1	0.23	0.3	0.69	---	---
Acrylamide - Skin	---	0.3	---	0.6	---	---
Acrylic acid	10	30	20	60	---	---
Acrylonitrile - Skin	2	4.3	4	8.6	---	---
Aldrin - Skin	---	0.25	---	0.75	---	---
Allyl alcohol - Skin	2	4.7	4	9.5	---	---
Allyl chloride	1	3.2	2	6.3	---	---
Allyl glycidyl ether (AGE) - Skin	5	23	10	47	---	---
Allyl propyl disulfide	2	12	3	18	---	---
Aluminum metal & oxide	---	10	---	20	---	---
Aluminum pyro powders	---	5	---	10	---	---
Aluminum welding fumes	---	5	---	10	---	---
Aluminum soluble salts	---	2	---	4	---	---
Aluminum, alkyls	---	2	---	4	---	---
2-Aminoethanol (Ethanolamine)	3	7.5	6	15	---	---
2-Aminopyridine	0.5	1.9	2	7.7	---	---
Ammonia	25	17	35	24	---	---
Ammonium chloride - fume	---	10	---	20	---	---
Ammonium sulfamate (Ammate)	---	10	---	20	---	---
n-Amyl acetate	100	530	150	800	---	---
sec-Amyl acetate	125	665	150	800	---	---
Aniline and homologues - Skin	2	7.6	5	19	---	---
Anisidine (o-, p-isomers) - Skin	0.1	0.5	0.3	1.5	---	---
Antimony and compounds (as Sb)	---	0.5	---	1.5	---	---
Antimony trioxide, handling and use (as Sb)	---	0.5	---	1.5	---	---
Antimony trioxide production (as Sb)	---	0.5	---	1.5	---	---
ANTU (alpha-Naphthyl thiourea)	---	0.3	---	0.9	---	---
Arsenic & soluble compounds (as As)	---	0.2	---	0.6	---	---
Arsenic trioxide production (as As)	---	0.05	---	0.15	---	---
Arsine	0.05	0.16	0.15	0.48	---	---
Asbestos	see TABLE 3					
Asphalt (petroleum fumes)	---	5	---	10	---	---
Atrazine	---	10	---	20	---	---
Azinphos-methyl - Skin	---	0.2	---	0.6	---	---
Barium (soluble compounds) (as Ba)	---	0.5	---	1.5	---	---
Baygon (Propoxur)	---	0.5	---	2	---	---
Baytex (Fenthion)	---	0.1	---	0.3	---	---
Benomyl	0.8	10	1.3	15	---	---
Benzene - Skin	10	32	25	80	---	---

p-Benzoquinone (Quinone)	0.1	0.42	0.3	1.3	---	---
Benzoyl peroxide	---	5	---	10	---	---
Benzyl chloride	1	5.2	3	16	---	---
Beryllium	---	0.002	---	0.006	---	---
Biphenyl	0.2	1.3	0.6	3.8	---	---
Bismuth telluride	---	10	---	20	---	---
Bismuth telluride, Se-doped	---	5	---	10	---	---
Borates, tetra, sodium salts,						
Anhydrous	---	1	---	3	---	---
Decahydrate	---	5	---	10	---	---
Pentahydrate	---	1	---	3	---	---
Boron oxide	---	10	---	20	---	---
Boron tribromide	1	10	3	31	---	---
Boron trifluoride	---	---	---	---	1	2.8
Bromacil	1	10	2	21	---	---
Bromine	0.1	0.65	0.3	2	---	---
Bromine Pentafluoride	0.1	0.72	0.3	2.1	---	---
Bromochloromethane						
(Chlorobromomethane)	200	1060	250	1320	---	---
Bromoform - Skin	0.5	5.2	1.5	16	---	---
1,3-Butadiene	1000	2212	1250	2765	---	---
Butane	800	1901	1000	2576	---	---
Butanethiol (Butyl mercaptan)	0.5	1.8	1.5	5.5	---	---
2-Butanone (Methyl ethyl ketone)	200	590	300	885	---	---
2-Butoxyethanol (Butyl Cellosolve [®]) - Skin	25	120	75	360	---	---
n-Butyl acetate	150	713	200	950	---	---
sec-Butyl acetate	200	950	250	1187	---	---
tert-Butyl acetate	200	950	250	1187	---	---
Butyl acrylate	10	52	20	105	---	---
n-Butyl alcohol - Skin	---	---	---	---	50	152
sec-Butyl alcohol	100	303	150	455	---	---
tert-Butyl alcohol	100	303	150	455	---	---
Butylamine - Skin	---	---	---	---	5	15
tert-Butyl chromate (as CrO ₃) - Skin	---	---	---	---	---	0.1
n-Butyl glycidyl ether (BGE)	25	133	38	200	---	---
n-Butyl lactate	5	30	10	60	---	---
Butyl mercaptan	0.5	1.8	1.5	5.5	---	---
o-sec-Butylphenol - Skin	5	31	10	62	---	---
p-tert-Butyltoluene	10	61	20	121	---	---
Cadmium, dust & salts (as Cd)	---	0.05	---	0.2	---	---
Cadmium oxide fume (as Cd)	---	---	---	---	---	0.05
Calcium arsenate (as As)	---	0.2	---	0.6	---	---
Calcium cyanamide	---	0.5	---	1	---	---
Calcium hydroxide	---	5	---	10	---	---
Calcium oxide	---	2	---	4	---	---
Camphor, synthetic	2	12	3	19	---	---
Caprolactam						
Dust	---	1	---	3	---	---
Vapor	5	23	10	46	---	---
Captafol (Difolatan [®]) - Skin	---	0.1	---	0.3	---	---
Captan	---	5	---	15	---	---
Carbaryl (Sevin [®])	---	5	---	10	---	---
Carbofuran (Turadan [®])	---	0.1	---	0.3	---	---
Carbon black	---	3.5	---	7	---	---
Carbon dioxide	5000	9000	15000	27000	---	---
Carbon disulfide - Skin	10	31	20	62	---	---
Carbon monoxide	50	57	400	460	---	---
Carbon tetrabromide	0.1	1.4	0.3	4.1	---	---

Carbon tetrachloride - Skin	5	32	20	126	---	---
Carbonyl chloride (Phosgene)	0.1	0.4	0.3	1.2	---	---
Carbonyl fluoride	2	5.4	5	13.5	---	---
Catechol (Pyrocatechol)	5	23	10	45	---	---
Cellosolve ^R acetate (2-Ethoxyethylacetate) - Skin	50	270	100	540	---	---
Cesium hydroxide	---	2	---	4	---	---
Chlordane - Skin	---	0.5	---	2	---	---
Chlorinated camphene - Skin	---	0.5	---	1	---	---
Chlorinated diphenyl oxide	---	0.5	---	2	---	---
Chlorine	1	3	3	8.7	3	8.7
Chlorine dioxide	0.1	0.27	0.3	0.82	---	---
Chlorine trifluoride	---	---	---	---	0.1	0.38
Chloroacetaldehyde	---	---	---	---	1	3.2
alpha-Chloroacetophenone (Phenacyl chloride)	0.05	0.32	0.15	0.95	---	---
Chloroacetyl chloride	0.05	0.23	0.15	0.69	---	---
Chlorobenzene (Monochlorobenzene)	75	345	115	520	---	---
o-Chlorobenzylidene malononitrile - Skin	0.05	0.39	0.15	1.2	---	---
Chlorobromomethane	200	1060	250	1320	---	---
2-Chloro-1,3-butadiene (beta-Chloroprene) - Skin	10	45	20	90	---	---
Chlorodifluoromethane	1000	3520	1250	4400	---	---
Chlorodiphenyl (42% Chlorine) - Skin	---	1	---	2	---	---
Chlorodiphenyl (54% Chlorine) - Skin	---	0.5	---	1	---	---
1-Chloro-2,3-epoxy-propane (Epichlorohydrin)	2	7.6	5	19	---	---
2-Chloroethanol (Ethylene chlorohydrin) - Skin	---	---	---	---	1	3.3
Chloroethylene (Vinyl chloride)	2	5.2	10	26	---	---
Chloroform (Trichloromethane)	10	49	50	225	---	---
bis-Chloromethyl ether	0.001	0.0047	0.003	0.014	---	---
1-Chloro-1-nitropropane	2	10	4	20	---	---
Chloropentafluoroethane	1000	6340	1250	7925	---	---
Chloropicrin	0.1	0.67	0.3	2	---	---
beta-Chloroprene - Skin	10	45	20	90	---	---
o-Chlorostyrene	50	285	75	425	---	---
o-Chlorotoluene - Skin	50	260	75	390	---	---
2-Chloro-6-(trichloromethyl) pyridine (N-Serve ^R)	---	10	---	20	---	---
Chlorpyrifos (Dursban ^R) - Skin	---	0.2	---	0.6	---	---
Chromium metal	---	0.5	---	1.5	---	---
Chromium (II) compounds (as Cr)	---	0.5	---	1.5	---	---
Chromium (III) compounds (as Cr)	---	0.5	---	1.5	---	---
Chromium (VI) compounds (as Cr) water soluble	---	0.05	---	0.15	---	---
water insoluble	---	0.05	---	0.15	---	---
Chromite ore processing (chromate (as Cr))	---	0.05	---	0.15	---	---
Chromium, Sol. chromic, chromous salts (as Cr)	---	0.5	---	0.15	---	---
Clopidol (Coyden ^R)	---	10	---	20	---	---
Coal tar pitch volatiles, as benzene solubles	---	0.2	---	0.6	---	---
Cobalt metal, dust and fume (as Co)	---	0.1	---	0.3	---	---
Copper fume	---	0.2	---	0.6	---	---
dust and mists (as Cu)	---	1	---	2	---	---
Cotton dust, raw	---	0.2	---	0.6	---	---
Crag ^R herbicide (Sodium 2,4- dichlorophenoxyethyl sulphate)	---	10	---	20	---	---
Cresol, all isomers - Skin	5	22	10	44	---	---

Crotonaldehyde	2	5.8	6	17	---	---
Cruformate ^R	---	5	---	20	---	---
Cumene - Skin	50	245	75	370	---	---
Cyanamide	---	2	---	4	---	---
Cyanides, as CN - Skin	---	5	---	10	---	---
Cyanogen	10	21	20	43	---	---
Cyanogen chloride	---	---	---	---	0.3	0.75
Cyclohexane	300	1030	375	1290	---	---
Cyclohexanol	50	205	75	305	---	---
Cyclohexanone	25	100	100	400	---	---
Cyclohexene	300	1107	375	1260	---	---
Cyclohexylamine - Skin	10	41	20	82	---	---
Cyclonite - Skin	---	1.5	---	3	---	---
Cyclopentadiene	75	205	150	405	---	---
Cyclopentane	600	1720	900	2580	---	---
2,4-D (2,4-Dichlorophenoxy-acetic acid)	---	10	---	20	---	---
DDT (Dichlorodiphenyltrichloroethane)	---	1	---	3	---	---
DDVP (Dichlorvos) - Skin	0.1	0.9	0.3	2.7	---	---
Decaborane - Skin	0.05	0.3	0.15	0.9	---	---
Demeton ^R - Skin	0.01	0.11	0.03	0.32	---	---
Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)	50	235	75	355	---	---
1,2-Diaminoethane (Ethylenediamine)	10	26	20	51	---	---
Diazinon ^R - Skin	---	0.1	---	0.3	---	---
Diazomethane	0.2	0.34	0.6	1	---	---
Diborane	0.1	0.11	0.3	0.34	---	---
Dibrom ^R	---	3	---	6	---	---
2-N-Dibutylaminoethanol - Skin	2	14	4	28	---	---
Dibutyl phosphate	1	5	2	10	---	---
Dibutyl phthalate	---	5	---	10	---	---
Dichloroacetylene	---	---	---	---	0.1	0.39
o-Dichlorobenzene	---	---	---	---	50	300
p-Dichlorobenzene	75	450	110	660	---	---
Dichlorodifluoromethane	1000	4950	1250	6190	---	---
1,3-Dichloro-5, 5-dimethyl hydantoin	---	0.2	---	0.4	---	---
1,1-Dichloroethane (Ethylidene chloride)	200	810	250	1110	---	---
1,2-Dichloroethane (Ethylene dichloride)	10	40	15	60	---	---
1,1-Dichloroethylene (Vinylidene dichloride)	10	40	20	80	---	---
1,2-Dichloroethylene	200	795	250	995	---	---
Dichloroethyl ether - Skin	5	29	10	59	---	---
Dichloromethane (Methylene chloride)	100	347	500	1737	---	---
Dichloromonofluoromethane	10	42	20	84	---	---
1,1-Dichloro-1-nitroethane	2	12	10	59	---	---
1,2-Dichloropropane (Propylene dichloride)	75	345	110	510	---	---
1,3-Dichloropropene - Skin	1	5	10	50	---	---
2,2-Dichloropropionic acid	1	6	2	12	---	---
Dichlorotetrafluoroethane	1000	6990	1250	8740	---	---
Dichlorvos (DDVP) - Skin	0.1	0.9	0.3	2.7	---	---
Dicrotophos (Bidrin ^R) - Skin	---	0.25	---	0.75	---	---
Dicyclopentadiene	5	27	10	54	---	---
Dicyclopentadienyl iron	---	10	---	20	---	---
Dieldrin - Skin	---	0.25	---	0.75	---	---
Diethanolamine	3	13	6	26	---	---
Diethylamine	10	30	25	75	---	---
Diethylaminoethanol - Skin	10	48	20	96	---	---
Diethylene triamine - Skin	1	4	3	13	---	---
Diethyl ether (Ethyl ether)	400	1213	500	1516	---	---
Diethyl ketone	200	705	250	881	---	---
Diethyl phthalate	---	5	---	10	---	---

Difluorodibromomethane	100	858	150	1287	---	---
Diglycidyl ether (DGE)	0.1	0.5	0.3	1.5	---	---
Dihydroxybenzene (Hydroquinone)	---	2	---	4	---	---
Diisobutyl ketone	25	145	38	220	---	---
Diisopropylamine - Skin	5	21	10	41	---	---
Dimethoxymethane (Methylal)	1000	3112	1250	3891	---	---
Dimethyl acetamide - Skin	10	36	15	53	---	---
Dimethylamine	10	18	20	36	---	---
Dimethylaminobenzene (Xylidene) - Skin	5	25	10	50	---	---
N,N-Dimethylaniline - Skin	5	25	10	50	---	---
Dimethylbenzene (Xylene) - Skin	100	434	150	652	---	---
Dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate (Dibrom ^R)	---	3	---	6	---	---
Dimethylformamide - Skin	10	30	20	60	---	---
2,6-Dimethyl-4-heptanone (Diisobutyl ketone)	25	145	38	220	---	---
1,1-Dimethylhydrazine - Skin	0.5	1.3	1	2.6	---	---
Dimethylphthalate	---	5	---	10	---	---
Dimethyl sulfate - Skin	0.1	0.52	0.3	1.6	---	---
Dinitrobenzene (all isomers) - Skin	0.15	1	0.5	3.4	---	---
Dinitro-o-cresol - Skin	---	0.2	---	0.6	---	---
3,5-Dinitro-o-toluamide (Zoalene ^R)	---	5	---	10	---	---
Dinitrotoluene - Skin	---	1.5	---	5	---	---
Dioxane - Tech. grade - Skin	25	90	100	360	---	---
Dioxathion (Delnav ^R) - Skin	---	0.2	---	0.6	---	---
Diphenyl (Biphenyl)	0.2	1.3	0.6	3.8	---	---
Diphenylamine	---	10	---	20	---	---
Diphenylmethane diisocyanate (Methylene bisphenyl-isocyanate (MDI))	---	---	---	---	0.02	0.2
Dipropylene glycol methyl ether	100	606	150	909	---	---
Dipropyl ketone	50	234	75	351	---	---
Diquat	---	0.5	---	1	---	---
Di-sec-octyl phthalate (Di(2-ethylhexyl)phthalate)	---	5	---	10	---	---
Disulfiram	---	2	---	5	---	---
Disulfoton (Disyston ^R)	---	0.1	---	0.3	---	---
2,6-Ditert-butyl-p-cresol	---	10	---	20	---	---
Diuron	---	10	---	20	---	---
Divinyl benzene	10	53	20	106	---	---
Dyfonate - Skin	---	0.1	---	0.3	---	---
Endosulfan (Thiodan ^R) - Skin	---	0.1	---	0.3	---	---
Endrin - Skin	---	0.1	---	0.3	---	---
Epichlorohydrin - Skin	2	7.6	5	19	---	---
EPN - Skin	---	0.5	---	2	---	---
1,2-Epoxypropane (Propylene oxide)	20	47	30	71	---	---
2,3-epoxy-1-propanol (Glycidol)	25	76	100	303	---	---
Ethanethiol (Ethyl mercaptan)	0.5	1.3	2	5.1	---	---
Ethanolamine	3	7.5	6	15	---	---
Ethion (Nialate ^R) - Skin	---	0.4	---	1.2	---	---
2-Ethoxyethanol - Skin	50	184	100	369	---	---
2-Ethoxyethyl acetate (Cellosolve ^R acetate) - Skin	50	270	100	540	---	---
Ethyl acetate	400	1441	500	1801	---	---
Ethyl acrylate - Skin	5	20	25	102	---	---
Ethyl alcohol (Ethanol)	1000	1884	1250	2355	---	---
Ethylamine	10	18	20	37	---	---
Ethyl amyl ketone (5-Methyl-3-heptanone)	25	131	38	196	---	---
Ethyl benzene	100	434	125	542	---	---
Ethyl bromide	200	891	250	1114	---	---

Ethyl butyl ketone (3-Heptanone)	50	234	75	350	---	---
Ethyl chloride	1000	2639	1250	3299	---	---
Ethyl ether	400	1213	500	1516	---	---
Ethyl formate	100	303	150	454	---	---
Ethyl mercaptan	0.5	1.3	2	5.1	---	---
Ethyl silicate	10	85	30	256	---	---
Ethylene chlorohydrin - Skin	---	---	---	---	1	3.3
Ethylene diamine	10	26	20	51	---	---
Ethylene dichloride (1,2-Dichloroethane)	10	40	15	60	---	---
Ethylene glycon, Particulate	---	10	---	20	---	---
Vapour	---	---	---	---	50	127
Ethylene glycol dinitrate - Skin	0.02	1.2	0.05	0.31	---	---
Ethylene glycol methyl ether acetate (Methyl Cellosolve ^R acetate) - Skin	25	121	35	170	---	---
Ethylene oxide	10	20	50	100	---	---
Ethyleneimine - Skin	0.5	0.90	1.5	2.7	---	---
Ethylidene chloride (1,1-Dichloroethane)	200	810	250	1110	---	---
Ethylidene norbornene	---	---	---	---	5	25
N-Ethylmorpholine - Skin	20	94	30	141	---	---
Fensulfothion (Dansanit)	---	0.1	---	0.3	---	---
Fenthion (Baytex)	---	0.1	---	0.3	---	---
Ferbam	---	10	---	20	---	---
Ferrovandium dust	---	1	---	3	---	---
Fluoride (as F)	---	2.5	---	5	---	---
Fluorine	1	1.6	2	3.1	---	---
Fluorotrichloromethane	1000	5619	1250	7024	---	---
Formaldehyde	---	---	---	---	2	2.4
Formamide	20	37	30	55	---	---
Formic acid	5	9	10	18	---	---
Furfural - Skin	2	8	10	39	---	---
Furfuryl alcohol - Skin	5	20	10	40	---	---
Gasoline	300	900	500	1500	---	---
Germanium tetrahydride	0.2	0.63	0.6	1.9	---	---
Glutaraldehyde	---	---	---	---	0.2	0.82
Glycerin mist	---	10	---	20	---	---
Glycidol (2,3-Epoxy-1-propanol)	25	76	100	303	---	---
Glycol monoethyl ether (2-Ethoxyethanol) - Skin	50	184	100	369	---	---
Guthion ^R (Azinphos-methyl) - Skin	---	0.2	---	0.6	---	---
Hafnium	---	0.5	---	1.5	---	---
Heptachlor - Skin	---	0.5	---	2	---	---
Heptane (n-Heptane)	400	1640	500	2049	---	---
3-Heptanone (Ethyl butyl ketone)	50	234	75	350	---	---
Hexachlorobutadiene	0.02	0.21	0.06	0.64	---	---
Hexachlorocyclopentadiene	0.01	0.11	0.03	0.34	---	---
Hexachloroethane - Skin	1	10	3	29	---	---
Hexachloronaphthalene - Skin	---	0.02	---	0.06	---	---
Hexafluoroacetone	0.1	0.68	0.3	2	---	---
Hexane (n-Hexane)	100	352	125	440	---	---
2-Hexanone (Methyl n-butyl ketone) - Skin	5	20	10	40	---	---
Hexone (Methyl isobutyl ketone) - Skin	50	205	75	300	---	---
sec-Hexyl acetate	50	295	75	440	---	---
Hexylene glycol	---	---	---	---	25	120
Hydrazine - Skin	0.1	0.13	0.3	0.39	---	---
Hydrogenated terphenyls	0.5	5	1.5	15	---	---
Hydrogen bromide	3	9.9	6	20	---	---
Hydrogen chloride	---	---	---	---	5	7.5
Hydrogen cyanide - Skin	---	---	---	---	10	11
Hydrogen fluoride (as F)	3	2.5	6	4.9	---	---

Hydrogen peroxide	1	1.4	2	2.8	---	---
Hydrogen selenide (as Se)	0.05	0.17	0.15	0.5	---	---
Hydrogen sulphide	10	14	15	21	20	28
Hydroquinone	---	2	---	4	---	---
2-Hydroxypropyl acrylate - Skin	0.5	3	1.5	9	---	---
Indene	10	47	15	71	---	---
Indium & Compounds (as In)	---	0.1	---	0.3	---	---
Iodine	---	---	---	---	0.1	1
Iodoform	0.6	9.6	1	16	---	---
Iron oxide fume	---	5	---	10	---	---
Iron pentacarbonyl (as Fe)	0.01	0.08	0.03	0.24	---	---
Iron salts, soluble (as Fe)	---	1	---	2	---	---
Isoamyl acetate	100	533	125	665	---	---
Isoamyl alcohol	100	360	125	450	---	---
Isobutyl acetate	150	713	187	889	---	---
Isobutyl alcohol	50	152	75	227	---	---
Isophorone	---	---	---	---	5	28
Isophorone diisocyanate - Skin	0.01	0.09	0.03	0.27	---	---
Isopropoxyethanol	25	105	75	320	---	---
Isopropyl acetate	250	104	310	1295	---	---
Isopropyl alcohol - Skin	400	983	500	1228	---	---
Isopropylamine	5	12	10	24	---	---
N-Isopropylaniline - Skin	2	11	5	22	---	---
Isopropyl ether	250	1044	310	1316	---	---
Isopropyl glycidyl ether (IGE)	50	237	75	356	---	---
Ketene	0.5	0.86	1.5	2.6	---	---
Lead, inorg., fumes & dusts (as Pb)	---	0.15	---	0.45	---	---
Lead arsenate (as Pb)	---	0.15	---	0.45	---	---
Lead chromate (as Cr)	---	0.05	---	0.15	---	---
Lindane - Skin	---	0.5	---	1.5	---	---
Lithium hydride	---	0.025	---	0.075	---	---
L.P.G. (Liquified Petroleum Gas)	1000	1800	1250	2250	---	---
Magnesium oxide fume (as Mg)	---	10	---	20	---	---
Malathion - Skin	---	10	---	20	---	---
Maleic anhydride	0.25	1	0.75	3	---	---
Manganese & compounds (as Mn)	---	---	---	---	---	5
Manganese fume (as Mn)	---	1	---	3	---	---
Manganese cyclopentadienyl tricarbonyl (as Mn) - Skin	---	0.1	---	0.3	---	---
Manganese tetroxide	---	1	---	2	---	---
Mercury (Alkyl compounds) - Skin (as Hg)	---	0.01	---	0.03	---	---
Mercury (all forms except Alkyl) (as Hg)	---	0.05	---	0.15	---	---
Mesityl oxide	15	60	25	100	---	---
Methacrylic acid	20	70	30	105	---	---
Methanethiol (Methyl mercaptan)	0.5	1	1.5	2.9	---	---
Methomyl (Lannate ^R) - Skin	---	2.5	---	5	---	---
Methoxychlor	---	10	---	20	---	---
2-Methoxyethanol - Skin (Methyl Cellosolve ^R)	25	78	35	115	---	---
Methyl acetate	200	605	250	760	---	---
Methyl acetylene (Propyne)	1000	1638	1250	2048	---	---
Methyl acetylene-propadiene mixture (MAPP)	1000	1800	1250	2250	---	---
Methyl acrylate - Skin	10	35	20	70	---	---
Methyl acrylonitrile - Skin	1	2.7	2	5.5	---	---
Methylal (Dimethoxymethane)	1000	3112	1250	3891	---	---
Methyl alcohol (Methanol) - Skin	200	262	250	328	---	---
Methylamine	10	12	20	25	---	---

Methyl amyl alcohol (Methyl isobutyl carbinol) - Skin	25	105	40	167	---	---
Methyl isoamyl ketone	100	466	150	700	---	---
Methyl n-amyl ketone (2-Heptanone)	50	235	100	465	---	---
Methyl bromide - Skin	5	20	15	58	---	---
Methyl n-butyl ketone (2-Hexanone) - Skin	5	20	10	40	---	---
Methyl Cellosolve ^R (2-Methoxyethanol) - Skin	27	78	35	115	---	---
Methyl Cellosolve ^R acetate (Ethylene glycol monomethyl ether acetate) - Skin	25	121	35	170	---	---
Methyl chloride	50	102	100	205	---	---
Methyl chloroform (1,1,1-Trichloroethane)	350	1910	450	2455	---	---
Methyl 2-cyanoacrylate	2	9	4	18	---	---
Methylcyclohexane	400	1600	500	2000	---	---
Methylcyclohexanol	50	235	75	350	---	---
o-Methylcyclohexanone - Skin	50	230	75	345	---	---
Methylcyclopentadienyl manganese tricarbonyl (as Mn) - Skin	---	0.2	---	0.6	---	---
Methyl demeton - Skin	---	0.5	---	1.5	---	---
Methylene bisphenyl-isocyanate (MDI)	---	---	---	---	0.02	0.2
Methylene chloride (Dichloromethane)	100	347	500	1737	---	---
4,4'-Methylene bis (2-chloroaniline) - (MOCA) - Skin	0.02	0.22	0.06	0.66	---	---
Methylene bis (4-cyclohexyl-isocyanate)	---	---	---	---	0.01	0.1
4,4-Methylene dianiline - Skin	0.1	0.8	0.5	4	---	---
Methyl ethyl ketone (MEK) (2-Butanone)	200	590	300	885	---	---
Methyl ethyl ketone peroxide	---	---	---	---	0.2	1.4
Methyl formate	100	255	150	385	---	---
5-Methyl-3-heptanone (Ethyl amyl ketone)	25	131	38	196	---	---
Methyl hydrazine - Skin	---	---	---	---	0.2	0.38
Methyl iodide - Skin	2	12	5	29	---	---
Methyl isobutyl carbinol - Skin	25	105	40	167	---	---
Methyl isobutyl ketone (Hexone) - Skin	50	205	75	300	---	---
Methyl isocyanate - Skin	0.02	0.05	0.06	0.15	---	---
Methyl isopropyl ketone	200	705	250	881	---	---
Methyl mercaptan	0.5	1	1.5	2.9	---	---
Methyl methacrylate	100	410	125	510	---	---
Methyl parathion - Skin	---	0.2	---	0.6	---	---
Methyl propyl ketone (2-Pentanone)	200	704	250	879	---	---
Methyl silicate	1	6	5	31	---	---
alpha-Methyl styrene	50	243	100	486	---	---
Molybdenum (as Mo)						
Soluble compounds	---	5	---	10	---	---
Insoluble compounds	---	10	---	20	---	---
Monocrotophos (Azodrin ^R)	---	0.25	---	0.75	---	---
Monomethyl aniline - Skin	2	8.8	4	18	---	---
Morpholine - Skin	20	70	30	105	---	---
Naphthalene	10	52	15	79	---	---
Nickel carbonyl (as Ni)	0.05	0.34	0.15	1	---	---
Nickel metal	---	1	---	2	---	---
Nickel, soluble compounds (as Ni)	---	0.1	---	0.3	---	---
Nickel sulfide roasting, fume and dust (as Ni)	---	1	---	3	---	---
Nicotine - Skin	---	0.5	---	1.5	---	---
Nitric acid	2	5.2	4	10	---	---
Nitric oxide	25	31	35	43	---	---
p-Nitroaniline - Skin	1	5.6	2	11	---	---
Nitrobenzene - Skin	1	5	2	10	---	---
p-Nitrochlorobenzene - Skin	---	1	---	2	---	---
Nitroethane	100	307	150	460	---	---

Nitrogen dioxide	3	6	5	9.4	---	---
Nitrogen trifluoride	10	29	15	44	---	---
Nitroglycerin - Skin	0.02	1.9	0.05	0.46	---	---
Nitromethane	100	250	150	375	---	---
1-Nitropropane	25	91	35	128	---	---
2-Nitropropane	---	---	---	---	25	91
Nitrotoluene - Skin	5	28	10	56	---	---
Nitrotrichloromethane (Chloropicrin)	0.1	0.67	0.3	2	---	---
Nonane	200	1049	250	1311	---	---
Octachloronaphthalene - Skin	---	0.1	---	0.3	---	---
Octane	300	1402	375	1752	---	---
Oil Mist, mineral	---	5	---	10	---	---
Osmium tetroxide (as Os)	0.0002	0.0021	0.0006	0.0063	---	---
Oxalic acid	---	1	---	2	---	---
Oxygen difluoride	0.05	0.11	0.15	0.33	---	---
Ozone	0.1	0.2	0.3	0.59	---	---
Paraffin wax fume	---	2	---	6	---	---
Paraquat - respirable sizes	---	0.1	---	0.3	---	---
Parathion - Skin	---	0.1	---	0.3	---	---
Particulate polycyclic aromatic hydrocarbons (PPAH) as benzene solubles	---	0.2	---	0.6	---	---
Pentaborane	0.005	0.013	0.015	0.039	---	---
Pentachloronaphthalene	---	0.5	---	2	---	---
Pentachlorophenol - Skin	---	0.5	---	1.5	---	---
Pentane	600	1771	750	2213	---	---
2-Pentanone (Methyl propyl ketone)	200	704	250	879	---	---
Perchloroethylene - Skin	100	678	150	1017	---	---
Perchloromethyl mercaptan	0.1	0.62	0.3	1.85	---	---
Perchloryl fluoride	3	13	6	25	---	---
Phenol - Skin	5	19	10	38	---	---
Phenothiazine - Skin	---	5	---	10	---	---
p-Phenylene diamine - Skin	---	0.1	---	0.3	---	---
Phenyl ether (vapor)	1	7	2	14	---	---
Phenyl ether-Diphenyl mixture (vapor)	0.5	4	2	16	---	---
Phenylethylene (Styrene)	50	213	100	426	---	---
Phenyl glycidyl ether (PGE)	10	60	15	90	---	---
Phenylhydrazine - Skin	5	22	10	44	---	---
Phenyl mercaptan	0.5	2.3	1.5	6.8	---	---
Phenylphosphine	---	---	---	---	0.05	0.23
Phorate (Thimet ^R) - Skin	---	0.05	---	0.2	---	---
Phosdrin (Mevinphos ^R) - Skin	0.01	0.092	0.03	0.27	---	---
Phosgene (Carbonyl chloride)	0.1	0.4	0.3	1.2	---	---
Phosphine	0.3	0.42	1	1.3	---	---
Phosphoric acid	---	1	---	3	---	---
Phosphorus (yellow)	---	0.1	---	0.3	---	---
Phosphorus pentachloride	0.1	1	0.3	3	---	---
Phosphorus pentasulfide	---	1	---	3	---	---
Phosphorus trichloride	0.5	2.8	1.5	8.4	---	---
Phthalic anhydride	1	6	4	24	---	---
m-Phthalodinitrile	---	5	---	10	---	---
Picloram (Tordon ^R)	---	10	---	20	---	---
Picric acid - Skin	---	0.1	---	0.3	---	---
Pival ^R (2-Pivalyl-1,3-indandione)	---	0.1	---	0.3	---	---
Platinum metal	---	1	---	2	---	---
Platinum (Soluble salts) (as Pt)	---	0.002	---	0.006	---	---
Potassium hydroxide	---	---	---	---	---	2
Propargyl alcohol - Skin	1	2.3	3	6.9	---	---
beta-Propiolactone	0.5	1.5	1	3	---	---
Propionic acid	10	30	15	45	---	---

n-Propyl acetate	200	835	250	1040	---	---
Propyl alcohol - Skin	200	491	250	615	---	---
n-Propyl nitrate	25	107	40	172	---	---
Propylene dichloride (1,2-Dichloropropane)	75	345	115	510	---	---
Propylene glycol dinitrate (PGDN) - Skin	0.02	0.1	0.05	0.3	---	---
Propylene glycol monomethyl ether	100	360	150	540	---	---
Propylene imine - Skin	2	4.7	4	9.3	---	---
Propylene oxide	20	47	30	71	---	---
Propyne (Methylacetylene)	1000	1638	1250	2048	---	---
Pyrethrum	---	5	---	10	---	---
Pyridine	5	16	10	32	---	---
Quinone	0.1	0.42	0.3	1.3	---	---
RDX (Cyclonite) - Skin	---	1.5	---	3	---	---
Resorcinol	10	45	20	90	---	---
Rhodium, Metal Fume and dusts (as Rh)	---	0.1	---	0.3	---	---
Soluble salts (as Rh)	---	0.001	---	0.003	---	---
Ronnel	---	10	---	20	---	---
Rosin core solder pyrolysis products (as formaldehyde)	---	0.1	---	0.3	---	---
Rotenone (commercial)	---	5	---	10	---	---
Rubber solvent (naphtha)	400	1600	500	2000	---	---
Selenium compounds (as Se)	---	0.2	---	0.6	---	---
Selenium hexafluoride (as Se)	0.05	0.4	0.15	1.2	---	---
Sevin ^R (Carbaryl)	---	5	---	10	---	---
Silica	see TABLE 3					
Silicon tetrahydride (Silane)	0.5	0.65	1	1.3	---	---
Silver, metal	---	0.1	---	0.3	---	---
Silver, soluble compounds (as Ag)	---	0.01	---	0.03	---	---
Sodium azide	---	---	---	---	0.1	0.27
Sodium bisulfite	---	5	---	10	---	---
Sodium 2,4-dichloro-phenoxy ethyl sulfate	---	10	---	20	---	---
Sodium fluoroacetate (1080) - Skin	---	0.05	---	0.15	---	---
Sodium hydroxide	---	---	---	---	---	2
Sodium metabisulphite	---	5	---	10	---	---
Stibine	0.1	0.51	0.3	1.5	---	---
Stoddard solvent	100	575	125	720	---	---
Strychine	---	0.15	---	0.45	---	---
Styrene, monomer (Phenyl ethylene)	50	213	100	426	---	---
Subtilisins (Proteolytic enzymes as 100% pure crystalline enzyme)	---	---	---	---	---	0.00006
Sulphur dioxide	2	5	5	13	---	---
Sulphur hexafluoride	1000	5973	1250	7467	---	---
Sulphuric acid	---	1	---	3	---	---
Sulphur monochloride	1	5.5	3	17	---	---
Sulphur pentafluoride	0.025	0.26	0.075	0.78	---	---
Sulphur tetrafluoride	0.1	0.44	0.3	1.3	---	---
Sulphuryl fluoride	5	21	10	42	---	---
Systox (Demeton ^R) - Skin	0.01	0.11	0.03	0.32	---	---
2,4,5-T	---	10	---	20	---	---
Tantalum	---	5	---	10	---	---
TEDP - Skin	---	0.2	---	0.6	---	---
Tellurium and compounds (as Te)	---	0.1	---	0.3	---	---
Tellurium hexafluoride (as Te)	0.02	0.2	0.06	0.59	---	---
TEPP - Skin	0.004	0.047	0.01	0.12	---	---
Terphenyls	---	---	---	---	0.5	4.7
1,1,1,2-Tetrachloro-2, 2-difluoroethane	500	4170	625	5210	---	---
1,1,2,2-Tetrachloro-1, 2-difluoroethane	500	4170	625	5210	---	---
1,1,2,2-Tetrachloroethane - Skin	5	34	10	69	---	---

Tetrachloroethylene (Perchloroethylene)	100	678	150	1017	---	---
Tetrachloromethane (Carbon tetrachloride)						
- Skin	5	32	20	126	---	---
Tetrachloronaphthalene	---	2	---	4	---	---
Tetraethyl lead (as Pb) - Skin	---	0.1	---	0.3	---	---
Tetrahydrofuran	200	590	250	735	---	---
Tetramethyl lead (as Pb) - Skin	---	0.15	---	0.5	---	---
Tetramethyl succinonitrile - Skin	0.5	2.8	2	11	---	---
Tetranitromethane	1	8	3	24	---	---
Tetrasodium pyrophosphate	---	5	---	10	---	---
Tetryl (2,4,6-Trinitrophenylmethylnitramine)						
- Skin	---	1.5	---	3.0	---	---
Thallium, soluble compounds (as Tl) - Skin	---	0.1	---	0.3	---	---
4,4'-Thiobis (6-tert-butyl-m cresol)	---	10	---	20	---	---
Thioglycolic acid	1	3.8	3	11	---	---
Thiram ^R	---	5	---	10	---	---
Tin, inorganic compounds, except SnH and SnO (as Sn)	---	2	---	4	---	---
Tin, organic ⁴ compounds ² (as Sn) - Skin	---	0.1	---	0.2	---	---
Toluene (Toluol) - Skin	100	375	150	560	---	---
Toluene-2,4-diisocyanate	---	---	---	---	0.02	0.14
o-Toluidine	5	22	10	44	---	---
Toxaphene (Chlorinated camphene) - Skin	---	0.5	---	1	---	---
Tributyl phosphate	0.2	2.2	0.4	4.4	---	---
Trichloroacetic acid	1	5	2	10	---	---
1,2,4-Trichlorobenzene	5	40	10	80	---	---
1,1,1-Trichloroethane (Methyl chloroform)	350	1910	450	2455	---	---
1,1,2-Trichloroethane - Skin	10	45	20	90	---	---
Trichloroethylene	100	537	150	806	---	---
Trichlorofluoromethane	1000	5619	1250	7024	---	---
Trichloromethane (Chloroform)	10	49	50	225	---	---
Trichloronaphthalene	---	5	---	10	---	---
Trichloronitromethane (Chloropicrin)	0.1	0.67	0.3	2	---	---
1,2,3-Trichloropropane	50	302	75	452	---	---
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	7664	1250	9580	---	---
Tricyclohexyltin hydroxide (Plictran ^R)	---	5	---	10	---	---
Triethylamine	25	104	40	166	---	---
Trifluoromonobromomethane	1000	6000	1200	7308	---	---
Trimellitic anhydride (TMA)	---	0.05	---	0.15	---	---
Trimethyl benzene	25	123	35	172	---	---
Trimethyl phosphite	0.5	2.5	1.5	7.6	---	---
2,4,6-Trinitrophenol (Picric acid) - Skin	---	0.1	---	0.3	---	---
2,4,6-Trinitrophenyl methylnitramine (Tetryl) - Skin	---	1.5	---	3.0	---	---
2,4,6-Trinitrotoluene (TNT) - Skin	---	---	---	---	---	0.5
Triorthocresyl phosphate	---	0.1	---	0.3	---	---
Triphenyl amine	---	5	---	10	---	---
Triphenyl phosphate	---	3	---	6	---	---
Tungsten & Compounds, (as W)						
Soluble	---	1	---	3	---	---
Insoluble	---	5	---	10	---	---
Turpentine	100	560	150	840	---	---
Uranium (natural) soluble & insoluble compounds (as U)	---	0.2	---	0.6	---	---
Valeraldehyde	50	175	75	265	---	---
Vanadium (V ₂ O ₅) (as V)						
Dust	---	0.5	---	1.5	---	---
Fume	---	---	---	---	---	0.05
Vinyl acetate	10	35	20	70	---	---

Vinyl benzene (Styrene)	50	213	100	426	---	---
Vinyl bromide	5	22	10	44	---	---
Vinyl chloride (Chloroethylene)	2	5.2	10	26	---	---
Vinyl cyanide (Acrylonitrile) - Skin	2	4.3	4	8.6	---	---
Vinyl cyclohexene dioxide	10	57	15	86	---	---
Vinylidene chloride	10	36	20	72	---	---
Vinyl toluene	50	242	100	483	---	---
VM & P Naphtha	300	1350	400	1800	---	---
Warfarin	---	0.1	---	0.3	---	---
Welding fumes (total particulate)	---	5	---	10	---	---
Wood dust, allergenic	---	2.5	---	5	---	---
Wood dust, nonallergenic	---	5	---	10	---	---
Xylene (o-,m-,p-isomers) - Skin	100	434	150	652	---	---
m-Xylene alpha, alpha'-diamine	---	---	---	---	---	0.1
Xylidine - Skin	5	25	10	50	---	---
Yttrium	---	1	---	3	---	---
Zinc chloride fume	---	1	---	2	---	---
Zinc chromate (as Cr)	---	0.05	---	0.15	---	---
Zinc oxide fume	---	5	---	10	---	---
Zirconium compounds (as Zr)	---	5	---	10	---	---

TABLE 3

	<u>8-Hour Occupational Exposure Limit</u>	
	Respirable Mass	Total Mass
	mg/m ³	mg/m ³
Silica (SiO ₂)		
Amorphous	2	5
Cristobalite	0.05	0.15
Fused Silica	0.1	0.3
Quartz	0.1	0.3
Silica Flour	0.05	0.15
Tridymite	0.05	0.15
Tripoli	0.1	0.3
Aluminum oxide (Al ₂ O ₃)	5	10
Asbestos	see footnote 1	
Calcium carbonate	5	10
Calcium silicate	5	10
Cellulose (paper fibre)	5	10
Emery	5	10
Fibrous Glass	see footnote 2	
Graphite (synthetic)	5	10
Gypsum	5	10
Kaolin	5	10
Limestone	5	10
Marble	5	10
Magnesite	5	10
Mica	3	6
Mineral Wool Fibre	see footnote 2	
Nuisance Particulate	5	10
Pentaerythritol	5	10
Perlite	5	10
Plaster of Paris	5	10
Portland Cement	5	10
Rouge	5	10
Silicon	5	10
Silicon carbide	5	10
Soapstone	3	6
Starch	5	10
Sucrose	5	10
Talc (fibrous)	see footnote 3	
Talc (nonasbestiform)	3	6
Tin oxide	5	10
Titanium dioxide	5	10
Zinc stearate	5	10
Zinc oxide dust	5	10

1. asbestos
 - (a) for asbestos fibre, except crocidolite, amosite and tremolite, the 8-hour Occupational Exposure Limit is two fibres greater than 5 micrometers in length per cm^3 of air; the 15-minute Occupational Exposure Limit is 10 fibres greater than 5 micrometers in length per cm^3 of air;
 - (b) for crocidolite fibre, the 8-hour Occupational Exposure Limit is 0.2 fibres greater than 5 micrometers in length per cm^3 of air; the 15-minute Occupational Exposure Limit is one fibre greater than 5 micrometers in length per cm^3 of air;
 - (c) for amosite and tremolite fibre, the 8-hour Occupational Exposure Limit is 0.5 fibres greater than 5 micrometers in length per cm^3 of air; the 15-minute Occupational Exposure Limit is 2.5 fibres greater than 5 micrometers in length per cm^3 of air;
2. fibrous glass or mineral wool fibre
 - (a) for fibrous glass or mineral wool fibre, the 8-hour Occupational Exposure Limit is three fibres per cm^3 of air;
 - (b) fibres included in this count are those having a diameter equal to or less than 3.5 micrometers and a length equal to or greater than 10 micrometers;
 - (c) the 8-hour Occupational Exposure Limit is 5 mg/m^3 (total mass);
3. talc (fibrous)
 - (a) for fibrous talc, the 8-hour Occupational Exposure Limit is two fibres greater than 5 micrometers in length per cm^3 of air;
 - (b) the 15-minute Occupational Exposure Limit is 10 fibres greater than 5 micrometers in length per cm^3 of air.

SCHEDULE B

(Sections 181 and 182)

<u>Load number</u>	<u>Cartridge case colour</u>	<u>Load colour</u>	<u>Nominal velocity ballistic slug (m (ft.) per second)</u>	
1	Brass	Grey	91.44	(300)
2	Brass	Brown	118.87	(390)
3	Brass	Green	146.3	(480)
4	Brass	Yellow	173.74	(570)
5	Brass	Red	201.17	(660)
6	Brass	Purple	228.6	(750)
7	Nickel	Grey	256.03	(840)
8	Nickel	Brown	283.46	(930)
9	Nickel	Green	310.9	(1,020)
10	Nickel	Yellow	338.33	(1,110)
11	Nickel	Red	365.76	(1,200)
12	Nickel	Purple	393.19	(1,290)

- Notes:
1. The nominal velocity applies to a 9.53 mm (0.375 in.) diameter, 22.69 g (350 gr.) ballistic slug and has no reference to actual fastener velocity developed in a specific size or type of tool.
 2. Maximum permissible deviation from the nominal velocity is +12.19 m (+40 ft.) per second.

SCHEDULE C

(Section 185)

<u>Type of tool</u>	<u>Type of fastener</u>	Minimum distance from edge (cm (in.))	Minimum distance from a previously driven failed fastener (cm (in.))	Minimum concrete thickness (cm (in.))
High-velocity	Regular	15.24 (6)	15.24 (6)	10.16 (4)
High-velocity	Light duty	7.62 (3)	7.62 (3)	6.35 (2.5)
Low-velocity	Regular	5.08 (2)	15.24 (6)	10.16 (4)
Low-velocity	Light duty	5.08 (2)	7.62 (3)	6.35 (2.5)

SCHEDULE D

(Section 186)

<u>Type of tool</u>	<u>Type of fastener</u>	Minimum distance from a weld <u>(cm (in.))</u>	Minimum steel thickness <u>(mm (in.))</u>
High-velocity	Regular	5.08 (2)	9.525 (0.375)
High-velocity	Light duty	5.08 (2)	4.763 (0.1875)
Low-velocity	Regular	5.08 (2)	9.525 (0.375)
Low-velocity	Light duty	5.08 (2)	4.763 (0.1875)

SCHEDULE E

(Section 407)

TRENCH SHORING, STRINGERS AND BRACING

	UPRIGHTS			STRINGERS		CROSS-BRACES			
	Trench Depth (m (ft.))	Minimum Dimensions (mm (in.))	Maximum horizontal spacing (m (ft.))	Minimum Dimensions (mm (in.))	Maximum Vertical Spacing (m (ft.))	Minimum dimensions (mm (in.)) Width of Trench		Maximum Spacing (m (ft.))	
						less than 1.8 m (6 ft.)	1.8 m to 3.7 m (6 ft. to 12 ft.)	Vertical	Horizontal
Hard Compact Soil	1.5 to 3.0 (5 to 10)	38 x 235 (2 x 10)	2.0 (6.5)	89 x 140 (4 x 6)	1.2 (4)	89 x 89 (4 x 4)	140 x 140 (6 x 6)	1.2 (4)	1.8 (6)
	more than 3.0 to 4.5 (10 to 15)	38 x 235 (2 x 10)	1.2 (4)	89 x 140 (4 x 6)	1.2 (4)	89 x 140 (4 x 6)	140 x 140 (6 x 6)	1.2 (4)	1.8 (6)
	more than 4.5 to 6.0 (15 to 20)	38 x 235 (2 x 10)	abutting	140 x 140 (6 x 6)	1.2 (4)	140 x 184 (6 x 8)	140 x 184 (6 x 8)	1.2 (4)	1.8 (6)
Soils likely to crack or crumble	1.5 to 3.0 (5 to 10)	38 x 235 (2 x 10)	1.2 (4)	89 x 140 (4 x 6)	1.2 (4)	89 x 140 (4 x 6)	140 x 140 (6 x 6)	1.2 (4)	1.8 (6)
	more than 3.0 to 4.5 (10 to 15)	38 x 235 (2 x 10)	0.9 (3)	140 x 140 (6 x 6)	1.2 (4)	140 x 140 (6 x 6)	140 x 184 (6 x 8)	1.2 (4)	1.8 (6)
	more than 4.5 to 6.0 (15 to 20)	38 x 235 (2 x 10)	abutting	140 x 184 (6 x 8)	1.2 (4)	140 x 184 (6 x 8)	140 x 184 (6 x 8)	1.2 (4)	1.8 (6)

	UPRIGHTS			STRINGERS		CROSS-BRACES			
	Trench Depth (m (ft.))	Minimum Dimensions (mm (in.))	Maximum horizontal spacing (m (ft.))	Minimum Dimensions (mm (in.))	Maximum Vertical Spacing (m (ft.))	Minimum dimensions (mm (in.)) Width of Trench		Maximum Spacing (m (ft.))	
						less than 1.8 m (6 ft.)	1.8 m to 3.7 m (6 ft. to 12 ft.)	Vertical	Horizontal
Soft, sandy or loose soils	1.5 to 3.0 (5 to 10)	38 x 235 (2 x 10)	abutting	140 x 140 (6 x 6)	1.2 (4)	140 x 140 (6 x 6)	140 x 184 (6 x 8)	1.2 (4)	1.8 (6)
	more than 3.0 to 4.5 (10 to 15)	38 x 235 (2 x 10)	abutting	140 x 184 (6 x 8)	1.2 (4)	140 x 184 (6 x 8)	184 x 184 (8 x 8)	1.2 (4)	1.8 (6)
	more than 4.5 to 6.0 (15 to 20)	38 x 235 (2 x 10)	abutting	184 x 184 (8 x 8)	1.2 (4)	140 x 184 (6 x 8)	184 x 235 (8 x 10)	1.2 (4)	1.8 (6)
Soils subject to hydro- static pressure	1.2 to 3.0 (4 to 10)	63 x 140 (3 x 6)	Tongue & Groove	140 x 184 (6 x 8)	1.2 (4)	140 x 140 (6 x 6)	140 x 140 (6 x 6)	1.2 (4)	1.8 (6)
	more than 3.0 to 4.5 (10 to 15)	63 x 140 (3 x 6)	Tongue & Groove	184 x 235 (8 x 10)	1.2 (4)	140 x 140 (6 x 6)	140 x 140 (6 x 6)	1.2 (4)	1.8 (6)

SCHEDULE F

(Section 69)

1. An N.W.T. No. 1 first aid kit shall contain
 - (a) a current edition of the "First Aid Safety Oriented" manual published by the St. John Ambulance Society;
 - (b) a first aid treatment record book;
 - (c) five pairs of disposable surgical latex gloves;
 - (d) two CPR pocket valve masks;
 - (e) the following bandages and dressings, each item of which is individually wrapped:
 - (i) 100 fabric adhesive bandages, assorted sizes,
 - (ii) six sterile pads, 7.6 cm square,
 - (iii) one sterile bandage compress, 10.2 cm square,
 - (iv) one sterile gauze bandage, 91.4 cm square,
 - (v) one 7.5 cm by 15 cm elastic pressure bandage (absorbent gauze pad sewn onto elastic crepe bandage),
 - (vi) two sterile gauze eye pads, with tape,
 - (vii) two roller bandages, 5.1 cm by 5.5 m,
 - (viii) one roll of adhesive tape, 2.5 cm by 2.3 m,
 - (ix) two triangular bandages,
 - (x) four roller bandages, 5.1 cm by 5.5 m,
 - (xi) one elastic crepe bandage, 7.6 cm long;
 - (f) 12 large safety pins;
 - (g) one box of six antiseptic towelettes;
 - (h) one pair of stainless steel tweezers (splinter forceps); and
 - (i) one pair of stainless steel scissors (10.2 cm) with blunt bandage tip.

2. An N.W.T. No. 2 first aid kit shall contain
 - (a) a current edition of the "First Aid Safety Oriented" manual published by the St. John Ambulance Society;
 - (b) a first aid treatment record book;
 - (c) five pairs of disposable surgical latex gloves;
 - (d) two CPR pocket valve masks;
 - (e) the following bandages and dressings, each item of which is individually wrapped:
 - (i) 200 fabric adhesive bandages, assorted sizes,
 - (ii) six sterile pads, 7.6 cm square,
 - (iii) 12 sterile pads, 5.08 cm square,
 - (iv) one sterile bandage compress, 10.2 cm square,
 - (v) five bandage compresses, 15.24 cm square,
 - (vi) four bandage compresses, 20.32 cm square,
 - (vii) five sterile gauze bandages, 91.4 cm square,
 - (viii) one package of 12 sterile medicated burn dressings,
 - (ix) one 7.5 cm by 15 cm elastic pressure bandage (absorbent gauze pad sewn onto elastic crepe bandage),
 - (x) six sterile gauze eye pads, with tape,
 - (xi) 10 roller bandages, 5.1 cm by 5.5 m,
 - (xii) one package of roller bandages, 2.54 cm width,
 - (xiii) one roll of adhesive tape, 2.5 cm by 2.3 m,
 - (xiv) three triangular bandages,
 - (xv) three elastic crepe bandages, 7.6 cm long;
 - (f) 12 large safety pins;
 - (g) two boxes of six antiseptic towelettes;
 - (h) one plastic eye shield;
 - (i) one pair of stainless steel tweezers (splinter forceps);
 - (j) one pair of stainless steel scissors (10.2 cm) with blunt bandage tip;
 - (k) one package of flexible metallic x-ray transparent splints; and
 - (l) one nail brush.

3. An N.W.T. No. 3 first aid kit shall contain

- (a) a current edition of the "First Aid Safety Oriented" manual published by the St. John Ambulance Society;
- (b) a first aid treatment record book;
- (c) three chemical cold packs;
- (d) five pairs of disposable surgical latex gloves;
- (e) one CPR pocket valve mask;
- (f) the following bandages and dressings, each item of which is individually wrapped:
 - (i) 200 fabric adhesive bandages, assorted sizes,
 - (ii) five envelopes of skin closures, 0.6 cm by 7.5 cm,
 - (iii) six sterile pads, 7.6 cm square,
 - (iv) 12 sterile pads, 5.08 cm square,
 - (v) six bandage compresses, 5.08 cm square,
 - (vi) 48 gauze pads, 7.62 cm square,
 - (vii) six sterile bandage compresses, 7.6 cm square,
 - (viii) six sterile bandage compresses, 10.2 cm square,
 - (ix) six abdominal pads, 30.48 cm square,
 - (x) five sterile gauze bandages, 91.4 cm square,
 - (xi) six sterile gauze eye pads, with tape,
 - (xii) one 7.5 cm by 15 cm elastic pressure bandage (absorbent gauze pad sewn onto elastic crepe bandage),
 - (xiii) two roller bandages, 5.1 cm by 5.5 m,
 - (xiv) two rolls of adhesive tape, 2.5 cm by 2.3 m,
 - (xv) 12 triangular bandages,
 - (xvi) one package of roller bandages, 2.54 cm wide,
 - (xvii) eight roller bandages, 5.1 cm by 5.5 m,
 - (xviii) six elastic crepe bandages, 7.6 cm long,
 - (xix) two Esmarch bandages, 7.62 cm wide;
- (g) 12 large safety pins;
- (h) two boxes of six antiseptic towelettes;
- (i) one 50 ml container of antiseptic soap;
- (j) one 50 ml container of eye wash solution;
- (k) one glass eye dropper;
- (l) one glass footed eye bath cup;
- (m) two plastic eye shields;
- (n) 12 tongue depressors;
- (o) one box of 20 ammonia inhalant capsules;
- (p) one pair of stainless steel tweezers;
- (q) one pair of stainless steel thin nose sliver forceps;
- (r) one pair of stainless steel scissors (10.2 cm) with blunt bandage tip;
- (s) two packages of flexible metallic x-ray transparent splints;
- (t) one nail brush;
- (u) one small stainless steel kidney basin; and
- (v) a burn trauma kit consisting of the following:
 - (i) two 60 cm by 135 cm sterile body burn dressings,
 - (ii) three 60 cm by 78 cm sterile leg burn dressings,
 - (iii) four 45 cm by 60 cm sterile arm burn dressings,
 - (iv) one collapsible stretcher,
 - (v) three blankets,
 - (vi) one set of wood splints, packaged separately.

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