

SAFETY ACT

**CONSOLIDATION OF OCCUPATIONAL HEALTH  
AND SAFETY REGULATIONS**

R-003-2016

In force March 29, 2016

*(Current to: June 19, 2016)*

**AS AMENDED BY:**

This consolidation is not an official statement of the law. It is an office consolidation prepared for convenience only. The authoritative text of regulations can be ascertained from the *Revised Regulations of the Northwest Territories, 1990* and the monthly publication of Part II of the *Northwest Territories Gazette* (for regulations made before April 1, 1999) and Part II of the *Nunavut Gazette* (for regulations made on or after April 1, 1999).

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Any registered regulations not yet published in the *Nunavut Gazette* can be obtained through the Registrar of Regulations at the address below.

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## 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> )

**OCCUPATIONAL HEALTH AND SAFETY REGULATIONS****INTERPRETATION****1.** In these regulations,

"accident causing serious bodily injury" means an accident at a work site that

- (a) causes or could reasonably be expected to cause the death of an individual, or
- (b) requires an individual to be admitted to a hospital as an in-patient for a period of 24 hours or more; (*accident causant des lésions corporelles graves*)

"air-purifying respirator" means a respirator that removes airborne contaminants from the air inhaled by a worker; (*appareil respiratoire à ventilation assistée*)

"approved" means

- (a) approved by an agency acceptable to the Chief Safety Officer for use under the conditions prescribed by the agency,
- (b) approved conditionally or otherwise by a certificate of the Chief Safety Officer, or
- (c) approved by the Chief Safety Officer in a code of practice approved and issued under subsection 18(3) of the Act; (*approuvé*)

"atmosphere-supplying respirator" means a respirator that delivers clean breathing air to a worker from a compressor or a cylinder, an SCBA, whether closed or open circuit, or a combination of SCBA and supplied air; (*appareil respiratoire à alimentation d'air*)

"borehole" means a mechanically drilled hole in the ground; (*trou de forage*)

"building shaft" means a continuous vertical space substantially enclosed on all sides that extends for two or more floors, such as an elevator shaft, a ventilation shaft, a stairwell or a service shaft; (*cage de bâtiment*)

"competent" means in respect of a function, task or duty, possessing the knowledge, experience and training to perform the function, task or duty; (*compétent*)

"conductor" includes a wire, cable or other metal component installed for the purpose of conveying electric current from one piece of equipment to another or to ground; (*conducteur*)

"confined space" means an enclosed or partially enclosed space, that is not designed or intended for continuous human occupancy, with a restricted means of entry or exit; (*espace restreint*)

"connecting linkage" means a lanyard, safety hook, cable or connector between a personal fall arrest system device and a D-ring on a worker's full-body harness;  
(*mécanisme de connexion*)

"construction" means the erection, alteration, renovation, repair, dismantlement, demolition, structural maintenance or painting of a structure, land clearing, earthmoving, grading, excavating, trenching, digging, boring, drilling, blasting and concreting;  
(*construction*)

"controlled product" means a product, material or substance specified by regulations made under paragraph 15(1)(a) of the *Hazardous Products Act* (Canada) to be included in any of the classes listed in Schedule II of that Act; (*produit contrôlé*)

"dangerous occurrence" means an occurrence that does not result in, but could have resulted in an accident causing serious bodily injury, such as

- (a) structural failure or collapse of
  - (i) a structure, scaffold, temporary falsework or concrete formwork, or
  - (ii) a tunnel, caisson, coffer dam, trench, excavated shaft or excavation,
- (b) failure of a crane or hoist or the overturning of a crane or powered mobile equipment,
- (c) accidental contact with an energized conductor,
- (d) bursting of a grinding wheel,
- (e) uncontrolled spill or escape of a toxic, corrosive or explosive substance,
- (f) premature or accidental detonation of explosives,
- (g) failure of an elevated or suspended platform, or
- (h) failure of an atmosphere-supplying respirator; (*événement dangereux*)

"dBA" means the sound pressure level in decibels measured on the A scale of a sound level meter; (*dBA*)

"designated signaller" means a worker designated under paragraph 138(1)(a) to give signals; (*signaleur désigné*)

"emergency medical technician" or "EMT" means an individual who

- (a) holds not less than a valid Level 2 qualification,
- (b) has completed an approved course of emergency medical technologist training,
- (c) possesses an approved amount of experience as an emergency medical technician, and
- (d) is licensed by an approved agency; (*technicien en soins médicaux d'urgence*)

"equipment" means any mechanical or non-mechanical article or device, such as a machine, tool, appliance, apparatus, implement, service or utility, other than personal property owned by a person unless that property is used in the carrying on of any work; (*équipement*)

"escape respirator" means an atmosphere-supplying respirator or an air-purifying respirator that is designed to be used by a worker only for escape purposes; (*appareil respiratoire d'évacuation*)

"excavated shaft" means a passage dug into the ground, the longest dimension of which exceeds 1.5 m and of which the acute angle between the axis of the longest dimension and the vertical is less than 45°; (*puits*)

"excavation" means any dug out area of ground other than a trench, tunnel or excavated shaft; (*excavation*)

"first aid" means immediate assistance given in case of injury until medical aid has been obtained; (*premiers soins*)

"first aid attendant" means a holder of a valid

- (a) first aid qualification,
- (b) licence or approval as an emergency medical technician, or
- (c) licence, certificate or other qualification that, in the opinion of the Chief Safety Officer, is equivalent or superior to a qualification referred to in paragraph (a), or a licence or approval referred to in paragraph (b); (*secouriste*)

"first aid qualification" means a qualification in first aid issued by an approved agency to an individual who has followed a course of instruction set out in

- (a) Schedule A for a Level 1 qualification, or
- (b) Schedule B for a Level 2 qualification; (*qualification en premiers soins*)

"forklift" means a self-propelled machine that has a power operated upright, angled or telescopic lifting device that can raise and lower a load for the purpose of transporting or stacking; (*chariot élévateur*)

"full-body harness" means a safety device that is capable of suspending a worker without causing the worker to bend at the waist, and consists of straps that pass over the worker's shoulders and around the worker's legs, an upper dorsal suspension assembly and integral hardware; (*harnais de sécurité complet*)

"hand tool" means hand-held equipment that depends on the energy of the worker for its direct effect and that does not have a pneumatic, hydraulic, electrical or chemical energy source for its operation; (*outil à main*)

"harmful" means known to cause harm or injury; (*nocif*) ou (*néfaste*)

"hazardous" means likely to cause harm or injury in certain circumstances; (*dangereux*)

"hazardous substance" means a hazardous product as defined in section 322 or another product, material or substance that is hazardous; (*substance dangereuse*)

"HEPA filter" means a high efficiency particulate aerosol filter that is not less than 99.97% efficient in collecting a 0.3 µm aerosol; (*filtre HEPA*)

"high hazard work" means a work activity described in Schedule C; (*travail très dangereux*)

"highway" means a highway as defined in section 1 of the *Motor Vehicles Act*; (*route*)

"hoist" means a machine that consists of a raising and lowering mechanism; (*monte-charge*)

"injury" includes any disease and any impairment of the physical or mental condition of an individual; (*blessure*)

"instruct" means, in respect of an instruction to a worker, to give information and direction to the worker with respect to a particular subject matter; (*version anglaise seulement*)

"isolated work site" means a work site

- (a) that is more than two hours' travel time from a hospital or medical facility under normal travel conditions using available means of surface transportation, or
- (b) for which transport by aircraft is the normal mode of transport; (*lieu de travail isolé*)

"Level 1 qualification" means a certificate that

- (a) is issued by an approved agency indicating the successful completion of a first aid training course and a cardiopulmonary resuscitation training course that meet the minimum requirements for course duration and content set out in Schedule A, and
- (b) qualifies the holder to perform the services set out in Schedule D; (*qualification de niveau 1*)

"Level 2 qualification" means a certificate that

- (a) is issued by an approved agency indicating the successful completion of a first aid training course and a cardiopulmonary training course that meet the minimum requirements for course duration and content set out in Schedule B, and
- (b) qualifies the holder to perform the services set out in Schedule E; (*qualification de niveau 2*)

"lifeline" means a length of rope or strap that is attached to a safe point of anchorage at one end of the rope or strap or, in the case of a horizontal lifeline, at both ends of the rope or strap, to provide support and a guide for a personal fall arrest system or a lowering device that provides a means of safely lowering a worker from a height; (*cordage de sécurité*)

"locked out" means, in respect of equipment or a system, to have

- (a) isolated all energy sources and dissipated residual energy from the equipment or system, and
- (b) secured the isolation and dissipation by a device that is operated by a key or other process; (*verrouillé*)

"maintained" means kept in an effective and safe functioning condition by regular examination, testing and servicing or repair; (*entretenu*)

"manufacturer's specifications" means

- (a) the written specifications, instructions or recommendations provided by the manufacturer of equipment or supplies that describe how the equipment or supplies are to be constructed, erected, installed, assembled, examined, inspected, started, operated, used, handled, stored, stopped, calibrated, adjusted, maintained, repaired or dismantled, or
- (b) an instruction, maintenance or operating manual provided by the manufacturer of equipment or supplies; (*indications techniques du fabricant*)

"medical professional" means an individual who is

- (a) a medical practitioner as defined in section 1 of the *Medical Profession Act*, or
- (b) a nurse practitioner, registered nurse or temporary certificate holder as defined in section 1 of the *Nursing Act*; (*professionnel de la santé*)

"personal fall arrest system" means personal protective equipment that provides a means of safely arresting the fall of a worker and that, subsequent to the arrest of the fall, by itself does not permit the further release or lowering of the worker; (*système antichute personnel*)

"personal protective equipment" means any clothing, device or other article that is intended to be worn or used by a worker to prevent injury or to facilitate rescue; (*équipement de protection individuelle*)

"personnel lifting unit" means a work platform, suspended by rigging from a hoist or crane as defined in section 205, that is used to position a worker at an elevated work site; (*unité de levage du personnel*)

"plant" includes a premises, site, land, water, structure, fixture or equipment used in the carrying on of an employment, business, calling or pursuit; (*établissement*)

"powered mobile equipment" means a self-propelled machine or combination of machines, such as a prime mover, that is designed to manipulate or move materials or to provide a work platform for a worker; (*matériel mobile motorisé*)

"professional engineer" means

- (a) a professional engineer as defined in subsection 1(1) of the *Engineers and Geoscientists Act*, or
- (b) an individual who has a substantially similar standing to a professional engineer under an enactment of a jurisdiction outside Nunavut; (*ingénieur*)

"qualified individual" means an individual who

- (a) possesses a recognized degree, certificate or professional standing, and
- (b) has demonstrated, by knowledge, training and experience, an ability to deal with problems related to a particular subject matter or work; (*personne compétente*)

"representative" means an occupational health and safety representative; (*représentant*)

"respiratory device" means a device such as an atmosphere-supplying respirator, an air-purifying respirator or an escape respirator that is designed to protect a wearer from inhaling a hazardous atmosphere; (*appareil respiratoire*)

"safeguard" means equipment other than personal protective equipment that is designed to protect the safety of a worker, such as a guard, shield, wire mesh, guardrail, gate, barrier, safety net, handrail or other similar equipment; (*dispositif de protection*)

"SCBA" means self-contained breathing apparatus; (*ARA*)

"standard atmospheric pressure" means atmospheric pressure of 101.325 kPa or 1 atm; (*pression atmosphérique standard*)

"supervisor" means an individual who is authorized by an employer to oversee or direct workers; (*superviseur*)



"train" means

- (a) to give information and explanation to a worker with respect to a particular subject matter, and
- (b) to require a practical demonstration that the worker has acquired knowledge or skill related to the subject matter; (*former*)

"trench" means an elongated dug out area of land with a depth that exceeds its width at the bottom; (*tranchée*)

"tunnel" means an underground passage that has an incline of not more than 45° from the horizontal; (*tunnel*)

"vehicle" means a machine in, on or by which an individual or thing could be transported. (*véhicule*)

## APPLICATION

2. These regulations do not apply to work in respect of
- (a) a mine, as defined in section 1 of the *Mine Health and Safety Act*; or
  - (b) the exploration, production and conservation of oil and gas resources.

## PART 1 PRELIMINARY MATTERS

### Giving Notice to Chief Safety Officer

3. (1) Where these regulations require a notice to be given to the Chief Safety Officer, the notice must be in a form approved by the Chief Safety Officer.

(2) Notice is deemed to have been given under subsection (1) when the notice is actually received by the Chief Safety Officer.

(3) In the case of a notice required by subsection 7(1) or (2), an employer shall give notice by telephoning a safety officer and, in addition, give notice in the manner set out in subsection (1).

### Generality of Duties Not Limited

4. (1) A specific duty imposed by these regulations does not limit the generality of any other duty imposed by the Act or other regulations made under the Act.

(2) A provision of these regulations that prohibits a worker from carrying out a specified action applies, with any necessary modification, to an employer.

(3) A provision of these regulations that requires an employer to ensure that a worker carries out or refrains from carrying out a specified action is deemed to require an employer to carry out or refrain from carrying out that action.

(4) Where a provision of these regulations imposes a duty or requirement on more than one person, the duty or requirement is meant to be imposed primarily on the person with the greatest degree of control over the matters that are the subject of the duty or requirement.

(5) Despite subsection (4) but subject to subsection (7), if the person with the greatest degree of control fails to comply with a provision described in subsection (4), the other persons are not relieved of the obligation to comply with the provision if it is possible for them to comply, and they shall comply with the provision.

(6) If the person with the greatest degree of control complies with a provision described in subsection (4), the other persons are relieved of the obligation to comply with the provision

- (a) only for the time in which the person with the greatest degree of control is in compliance with the provision;
- (b) only if simultaneous compliance by more than one person would result in unnecessary duplication of effort and expense; and
- (c) only if the health and safety of workers is not endangered by compliance by only one person.

(7) If the person with the greatest degree of control fails to comply with a provision described in subsection (4) but one of the other persons complies with the provision, the other persons, if any, to whom the provision applies, are relieved of the obligation to comply with the provision in the circumstances set out in paragraphs (6)(a) to (c), with any necessary modification.

(8) If a provision of these regulations imposes a duty or requirement on a person to ensure that another person carries out or refrains from carrying out a specified action, the person on whom the duty or requirement is placed has complied with the provision if that person establishes that he or she took all reasonably practicable steps to ensure that the other person carried out or refrained from carrying out the specified action.

#### Codes of Practice

**5.** The Chief Safety Officer may consult with industry and others prior to approving and issuing a code of practice under subsection 18(3) of the Act.

#### Certification by Professional Engineer

**6.** If a certification by a professional engineer is required by these regulations, the certification must be in writing and must bear the official stamp or seal of the engineer.

## PART 2 REPORTING

### New Operations

**7.** (1) An employer shall, as soon as is reasonably possible, give notice to the Chief Safety Officer of an intention to

- (a) begin work at a construction site or a manufacturing or processing plant where 20 or more workers are to work for six months or more;
- (b) dig an excavation, a trench or an excavated shaft
  - (i) more than 5 m deep, and
  - (ii) that a worker will be required or permitted to enter; or
- (c) dig a tunnel that a worker will be required or permitted to enter.

(2) Subject to subsection (3), an employer shall, not less than 30 days before high hazard work begins, give notice to the Chief Safety Officer of an intention to begin that work.

(3) If an employer cannot give the notice in the time required under subsection (2), the employer shall, as soon as is reasonably possible,

- (a) give notice to the Chief Safety Officer of an intention to begin that work; and
- (b) provide an explanation to the Chief Safety Officer why the notice was not given in the time required under subsection (2).

(4) A notice required by subsection (1) or (2) or paragraph (3)(a) must include

- (a) the name of the employer;
- (b) the mailing address of the employer;
- (c) the telephone number and facsimile number of the employer;
- (d) the location of the intended work site;
- (e) the nature of the activity to be undertaken at the intended work site;
- (f) the number of workers that are going to work at the intended work site; and
- (g) the estimated starting date and expected duration of the activity.

### Accidents Causing Serious Bodily Injury

**8.** (1) An employer shall, as soon as is reasonably possible, give notice to the Chief Safety Officer of an accident causing serious bodily injury.

(2) A notice given under subsection (1) must include

- (a) the name of each injured or deceased individual;
- (b) the name of the employer of each injured or deceased worker;

- (c) the date, time and location of the accident;
- (d) the circumstances of the accident;
- (e) the apparent injuries; and
- (f) the name, telephone number and facsimile number of the employer or an individual designated by the employer to be contacted for additional information.

(3) An employer shall provide a copy of the notice required by subsection (1), without names of the injured or deceased individuals, to the Committee or representative.

#### Dangerous Occurrences

**9.** (1) An employer shall, as soon as is reasonably possible, give notice to the Chief Safety Officer of a dangerous occurrence that takes place at a work site, whether or not a worker sustains injury.

(2) The notice given under subsection (1) must include

- (a) the name of each employer, principal contractor and owner at the work site;
- (b) the date, time and location of the dangerous occurrence;
- (c) the circumstances related to the dangerous occurrence; and
- (d) the name, telephone number and facsimile number of the employer or a person designated by the employer to be contacted for additional information.

(3) An employer shall provide a copy of the notice required by subsection (1), without the names of the workers involved, to the Committee or representative.

#### Medical Information

**10.** (1) Subject to subsection (2), a person who acquires information of a personal medical nature with respect to a worker shall not disclose that information unless the disclosure is

- (a) to the worker;
- (b) with the informed consent of the worker, to another person; or
- (c) otherwise required by law.

(2) A medical professional who attends or treats a worker who is suffering from or is believed to be suffering from a medical condition that is listed in Schedule F and is related to the worker's present or past work shall, as soon as is reasonably possible, inform the Chief Safety Officer of

- (a) the medical condition from which the worker is suffering or is believed to be suffering; and
- (b) the name and address of the most recent work site where exposure related to the medical condition is believed to have occurred.

## Annual Statistical Report

**11.** An employer shall provide to the Chief Safety Officer, or to a person or organization that the Chief Safety Officer may designate, a report setting out details of person hours worked and work-related injuries during the preceding year that occurred in Nunavut.

### PART 3 GENERAL DUTIES

#### General Duties of Employers

- 12.** An employer shall, in respect of a work site,
- (a) provide and maintain systems of work and working environments that ensure, as far as is reasonably possible, the health and safety of workers;
  - (b) arrange for the use, handling, storage and transport of articles and substances in a manner that protects the health and safety of workers;
  - (c) provide information, instruction, training and supervision that is necessary to protect the health and safety of workers; and
  - (d) provide and maintain a safe means of entrance to and exit from the work site.

#### General Duties of Workers

- 13.** A worker shall, in respect of a work site,
- (a) use safeguards, safety equipment and personal protective equipment required by these regulations; and
  - (b) follow safe work practices and procedures required by or developed under these regulations.

#### Young Persons

- 14.** (1) An employer shall ensure that an individual under 16 years of age is not required or permitted to work
- (a) on a construction site;
  - (b) in a production process at a pulp mill, saw mill or woodworking establishment;
  - (c) in a production process at a smelter, foundry, refinery or metal processing or fabricating operation;
  - (d) in a confined space;
  - (e) in a forestry or logging operation;
  - (f) as an operator of powered mobile equipment, a crane or a hoist;

- (g) where exposure to a chemical or biological substance is likely to endanger the health or safety of the individual; or
- (h) in power line construction or maintenance.

(2) An employer shall ensure that an individual under 18 years of age is not required or permitted to work

- (a) as an occupational worker as defined in section 339;
- (b) in an asbestos process as defined in section 364;
- (c) in a silica process as defined in section 380; or
- (d) in an activity requiring the use of an atmosphere-supplying respirator.

#### Duty of Principal Contractor to Inform

**15.** The principal contractor or, if there is no principal contractor, an employer, shall give notice in writing to each other employer and worker at a work site, setting out

- (a) the name of the individual who is supervising the work on behalf of the principal contractor or employer;
- (b) emergency facilities available for use by workers;
- (c) if a Committee is established under section 37, the existence of the Committee at the work site and the means to contact the Committee; and
- (d) if a representative is designated under section 39, the identity of the representative at the work site and the means to contact him or her.

#### Supervision of Work

**16.** (1) An employer shall ensure that, at a work site,

- (a) work is sufficiently and competently supervised;
- (b) supervisors have sufficient knowledge of the following:
  - (i) any occupational health and safety program applicable to workers supervised at the work site,
  - (ii) the safe handling, use, storage, production and disposal of hazardous substances,
  - (iii) the need for, and safe use of, personal protective equipment,
  - (iv) emergency procedures required by these regulations,
  - (v) any other matters that are necessary to ensure the health and safety of workers;
- (c) supervisors have completed an approved regulatory familiarization program; and
- (d) supervisors comply with the Act and these regulations.

(2) A supervisor shall ensure that workers comply with the Act and these regulations as they apply to the work site.

### Duty to Inform Workers

- 17.** An employer shall ensure that workers
- (a) are informed of the provisions of the Act and these regulations as they apply to the work site; and
  - (b) comply with the Act and these regulations.

### Training of Workers

- 18.** (1) An employer shall ensure that a worker is trained in matters necessary to protect the health and safety of workers at a work site when
- (a) the worker begins work at the work site; and
  - (b) the worker is moved from one work activity or work site to another that differs from the old work site with respect to hazards, equipment, facilities or procedures.

(2) The training required by subsection (1) must include

- (a) procedures to be taken in the event of a fire or other emergency;
- (b) the location of first aid facilities;
- (c) identification of prohibited or restricted areas;
- (d) precautions to be taken for the protection of workers from hazardous substances;
- (e) procedures, plans, policies and programs that apply to work at the work site; and
- (f) any other matters that are necessary to ensure the health and safety of workers at the work site.

(3) An employer shall ensure that time spent by a worker in the training required by subsection (1) is credited to the worker as time at work, and that he or she does not lose pay or benefits with respect to that time.

(4) An employer shall ensure that a worker is not required or permitted to work unless he or she

- (a) is a competent worker; or
- (b) is under close and competent supervision.

### Workers' Contacts with Safety Officers

- 19.** (1) During an inspection or inquiry by a safety officer at a work site, an employer shall allow any one of the following to accompany the safety officer:
- (a) a member of the Committee who, under paragraph 38(a) represents workers or, if such a member is not available, a worker designated by the Committee to represent workers;
  - (b) the representative or, if he or she is not available, a worker designated by the representative to represent workers;

- (c) if there is no Committee member or representative available, a worker designated by the trade union representing workers or if there is no trade union representing workers, a worker designated by a safety officer.

(2) An employer shall allow any worker to consult with a safety officer during an inspection or inquiry at a work site.

(3) An employer shall ensure that the time a worker consults with or accompanies a safety officer during an inspection or inquiry is credited as time at work, and that he or she does not lose pay or benefits.

### Biological Monitoring

**20.** (1) In this section, "biological monitoring" means measuring, through the assessment of biological specimens collected from a worker, the worker's total exposure to a hazardous substance present at a work site. (*contrôle biologique*)

(2) If a worker is the subject of biological monitoring, an employer shall ensure that

- (a) the worker is informed of the purposes and the results of the biological monitoring;
- (b) at the worker's request, the detailed results of the biological monitoring are made available to a medical professional, or individual of similar standing under an enactment of a jurisdiction outside Nunavut, who is specified by the worker; and
- (c) the aggregate results of the biological monitoring are given to the Committee or representative.

(3) The results of biological monitoring carried out under subsection (2) are deemed to be information of a personal medical nature under subsection 10(1).

### Occupational Health and Safety Program

**21.** (1) An employer shall provide an occupational health and safety program under this section if

- (a) there are 20 or more workers who work at the work site; or
- (b) the employer is so directed by the Chief Safety Officer.

- (2) An occupational health and safety program for a work site must include
- (a) a statement of the employer's policy with respect to the protection and maintenance of the health and safety of workers;
  - (b) an identification of hazards that could endanger workers at the work site, through a hazard recognition program;



- (c) measures, including procedures to respond to an emergency, that will be taken to reduce, eliminate and control the hazards identified under paragraph (b);
- (d) an identification of internal and external resources, including personnel and equipment, that could be required to respond to an emergency;
- (e) a statement of the responsibilities of the employer, the supervisors and the workers;
- (f) a schedule for the regular inspection of the work site and inspection of work processes and procedures;
- (g) a plan for the control of hazardous substances handled, used, stored, produced or disposed of at the work site and, if appropriate, the monitoring of the work environment;
- (h) a plan for training workers and supervisors in safe work practices and procedures, including procedures, plans, policies or programs that the employer is required to develop;
- (i) a procedure for the investigation of refusals to work under section 13 of the Act;
- (j) a strategy for worker participation in occupational health and safety activities, including audit inspections and investigations of refusals to work under section 13 of the Act; and
- (k) a procedure to review and, if necessary, revise the occupational health and safety program not less than once every three years or whenever there is a change of circumstances that could affect the health or safety of workers.

(3) An occupational health and safety program must be implemented and updated in consultation with

- (a) the Committee or representative; and
- (b) the workers.

(4) An occupational health and safety program required under this section must be in writing and made available to the workers.

#### Examination of Plant

**22.** (1) An employer shall arrange for the regular examination of a plant to ensure that, to the extent that is reasonably possible, the plant is capable of

- (a) withstanding the stress likely to be imposed on it; and
- (b) safely performing the functions for which the plant is used.

(2) An employer shall, as soon as is reasonably possible, correct an unsafe condition found in a plant and take reasonable steps, until the unsafe condition is corrected, to protect the health and safety of workers who could be endangered.

### Identifying Mark of Approved Equipment

**23.** (1) This section applies in respect of equipment and personal protective equipment that is required by these regulations to be approved by an agency.

(2) An employer or supplier shall ensure that the approval of equipment and personal protective equipment by an agency is evidenced by a seal, stamp, logo or similar identifying mark of the agency indicating such approval, affixed on

- (a) the equipment or personal protective equipment; or
- (b) the packaging accompanying the equipment or personal protective equipment.

### Maintenance and Repair of Equipment

**24.** (1) An employer shall ensure that equipment is maintained at intervals that are sufficient to ensure the safe functioning of the equipment.

(2) If a defect is found in equipment, an employer shall ensure that, as soon as is reasonably possible,

- (a) steps are taken, until the defect is corrected, to protect the health and safety of workers who could be endangered; and
- (b) the defect is corrected by a competent worker or the equipment is replaced.

(3) A worker who knows or has reason to believe that equipment under his or her control is in an unsafe condition shall, as soon as is reasonably possible,

- (a) report the condition of the equipment to the employer; and
- (b) repair the equipment, if the worker is authorized and competent to do so, or replace the equipment or remove the equipment from service.

### Boilers and Pressure Vessels

**25.** An employer shall ensure that boilers or pressure vessels used at a work site are properly constructed and maintained, even if there is no requirement to inspect or register them under the *Boilers and Pressure Vessels Act*.

### Prohibited Use of Compressed Air

**26.** An employer shall ensure that no compressed air is directed towards a worker for

- (a) the purpose of cleaning clothing or personal protective equipment; or
- (b) any other purpose, if the use of compressed air could cause dispersion into the air of contaminants that could be harmful to workers.

### Inspection of Work Sites

**27.** (1) An employer shall enable members of the Committee or a representative to inspect a work site at reasonable intervals determined by the Committee and employer or by the representative and employer.

(2) On written notice by the Committee or representative of an unsafe condition or a contravention of the Act or these regulations, the employer shall, as soon as is reasonably possible,

- (a) take steps, until the unsafe condition is corrected or the contravention is remedied, to protect the health and safety of workers who could be endangered;
- (b) take suitable action to correct the unsafe condition or remedy the contravention; and
- (c) inform the Committee or representative in writing
  - (i) of the steps and action the employer has taken or will take under paragraphs (a) and (b), or
  - (ii) if the employer has not taken steps and action under paragraphs (a) and (b), the reasons for not taking steps or action.

### Investigation of Certain Accidents

**28.** (1) Subject to section 29, an employer shall ensure that an accident causing serious bodily injury or a dangerous occurrence is investigated as soon as is reasonably possible

- (a) by the Committee and employer or by the representative and the employer; or
- (b) if no Committee or representative is available, by the employer.

(2) After the investigation of an accident causing serious bodily injury or a dangerous occurrence, an employer shall, in consultation with the Committee or representative or, if no Committee or representative is available, the workers, prepare a written report that includes

- (a) a description of the accident or occurrence;
- (b) graphics, photographs, video or other evidence that could assist in determining the causes of the accident or occurrence;
- (c) identification of unsafe conditions, acts, omissions or procedures that contributed to the accident or occurrence;
- (d) an explanation of the causes of the accident or occurrence;
- (e) a description of the immediate corrective action taken; and
- (f) a description of long-term actions that will be taken to prevent the happening of a similar accident or dangerous occurrence, or the reasons for not taking action.

### Preserving Scene of Accident Causing Death

**29.** (1) Unless expressly authorized by statute or by subsection (2), a person shall not, other than for the purpose of saving life or relieving human suffering, interfere with, destroy, carry away or alter the position of wreckage, equipment, articles, documents or other things at the scene of, or connected with, an accident causing a death until a safety officer has completed an investigation of the circumstances surrounding the accident.

(2) If an accident causing a death occurs and a safety officer is not able to complete an investigation of the circumstances surrounding the accident, the safety officer may, unless prohibited by statute, grant permission to move wreckage, equipment, articles, documents or other things at the scene or connected with the accident, to an extent that is necessary to allow work to proceed, if he or she is satisfied that

- (a) graphics, photographs, video or other evidence showing details at the scene of the accident are made or taken before granting permission; and
- (b) a member of the Committee or the representative, if available, has inspected the site of the accident and agreed that the things may be moved.

### Injuries Requiring Medical Treatment

**30.** An employer shall

- (a) report to the Committee or representative any lost-time injury at the work site that results in a worker receiving medical treatment; and
- (b) allow the Committee or representative or, if no Committee or representative is available, the workers, a reasonable opportunity to review the lost-time injury report during normal working hours and without loss of pay or benefits.

### Work if Visibility Restricted

**31.** If visibility in an area at a work site is restricted by smoke, steam or another substance to the extent that a worker is endangered, an employer shall not require or permit the worker to work in that area unless the employer provides the worker with an effective means of communication with another worker who is readily available to provide assistance in an emergency.

### Work on Ice Over Water

**32.** (1) This section does not apply to

- (a) highways built and maintained by the Department of Economic Development and Transportation; or
- (b) roads that are built and maintained to an approved standard.

(2) Before a worker is required or permitted to work or travel on ice that is over water or over other material into which a worker could sink more than 1 m, an employer shall have the ice tested to ensure that the ice will support the load that the work or travel will place on the ice.

(3) The requirement of subsection (2) may be waived by the Chief Safety Officer if an employer or worker satisfies the Chief Safety Officer that other measures have been taken to eliminate or reduce the risk to the worker should the ice fail to support the load.

#### Working Alone or at Isolated Work Site

**33.** (1) In this section, "work alone" means to work at a work site as the only worker at that work site, in circumstances where assistance is not readily available in the event of injury, ill health or emergency. (*travailler seul*)

(2) If a worker is required or permitted to work alone or at an isolated work site, an employer, in consultation with the Committee or representative or, if no Committee or representative is available, the worker and other workers, shall identify the hazards arising from the conditions and circumstances of that work.

(3) An employer shall take reasonable measures to eliminate or reduce the risks posed by the hazards identified under subsection (2), including the establishment of an effective communication system that consists of

- (a) radio communication;
- (b) phone or cellular phone communication; or
- (c) any other means that provides effective communication considering the risks involved.

#### Harassment

**34.** (1) In this section, "harassment" means, subject to subsections (2) and (3), a course of vexatious comment or conduct at a work site that

- (a) is known or ought reasonably to be known to be unwelcome; and
- (b) constitutes a threat at the work site to the health or safety of a worker. (*harcèlement*)

(2) To constitute harassment for the purposes of subsection (1), any one of the following must have occurred:

- (a) repeated conduct, comments, displays, actions or gestures; or
- (b) a single, serious occurrence of conduct, or a single, serious comment, display, action or gesture, that has a lasting, harmful effect on the worker's health or safety.

(3) For the purpose of subsection (1), harassment does not include reasonable action taken by an employer or supervisor relating to the management and direction of the workers or of the work site.

(4) An employer shall, in consultation with the Committee or representative, or, if no Committee or representative is available, the workers, develop and implement a written policy that includes

- (a) a definition of harassment that is consistent with subsections (1), (2) and (3);
- (b) a statement that each worker is entitled to work free of harassment;
- (c) a commitment that the employer will make every reasonable effort to ensure that workers are not subjected to harassment;
- (d) a commitment that the employer will take corrective action respecting any individual who subjects any worker to harassment;
- (e) an explanation of how harassment complaints may be brought to the attention of the employer;
- (f) a statement that the employer will not disclose the name of a complainant or an alleged harasser or the circumstances relating to the complaint to a person unless disclosure is
  - (i) necessary for the purposes of investigating the complaint or taking corrective action with respect to the complaint, or
  - (ii) required by law;
- (g) a description of the procedure that the employer will follow to inform a complainant and alleged harasser of the results of an investigation; and
- (h) a statement that the employer's harassment policy is not intended to discourage or prevent a complainant from exercising other legal rights.

(5) An employer shall make readily available to workers a copy of the policy required under subsection (4).

### Violence

**35.** (1) In this section, "violence" means attempted, threatened or actual conduct of an individual that causes or is likely to cause injury, such as a threatening statement or behaviour that gives a worker a reasonable belief that he or she is at risk of injury. (*violence*)

(2) For the purposes of this section, work sites where violence may reasonably be expected to occur include work sites that provide the following services or activities:

- (a) services provided by health care facilities as defined in section 463;
- (b) pharmaceutical dispensing services;
- (c) educational services;
- (d) police services;

- (e) corrections services;
- (f) other law enforcement services;
- (g) security services;
- (h) crisis intervention and counselling services;
- (i) financial services;
- (j) the sale of alcoholic beverages or the provision of premises for the consumption of alcoholic beverages;
- (k) taxi services;
- (l) transit services.

(3) An employer shall, at a work site where violence has occurred or could reasonably be expected to occur, after consultation with the Committee or representative or, if no Committee or representative is available, the workers, develop and implement a written policy to deal with potential violence.

- (4) The policy required by subsection (3) must be in writing and must include
- (a) a commitment that the employer will eliminate or reduce the risk of violence at the work site;
  - (b) the identification of the work site or work sites where violence has occurred or could reasonably be expected to occur;
  - (c) the identification of staff positions at the work site that were, or could reasonably be expected to be, exposed to violence;
  - (d) the procedure to be followed by the employer to inform workers of the nature and extent of risk from violence, including information in the employer's possession about the risk of violence from individuals who have a history of violent behaviour and whom workers are likely to encounter in the course of their work, unless the disclosure is prohibited by law;
  - (e) the actions the employer will take to eliminate or reduce the risk of violence, including the use of personal protective equipment, administrative arrangements and engineering controls;
  - (f) the procedure to be followed by a worker who is exposed to violence to report the incident to the employer;
  - (g) the procedure the employer will follow to document and investigate violence reported under paragraph (f);
  - (h) a recommendation that a worker who has been exposed to violence consult the worker's physician for treatment or referral for post-incident counselling;
  - (i) the employer's commitment to provide training programs for workers that include
    - (i) the means to recognize potentially violent situations,
    - (ii) procedures, work practices, administrative arrangements and engineering controls to eliminate or reduce the risk of violence to workers,

- (iii) the appropriate responses of workers to violence, including how to obtain assistance, and
- (iv) procedures for reporting violence.

(5) If a worker receives treatment or counselling referred to in paragraph (4)(h) or attends a training program referred to in paragraph (4)(i), the employer shall ensure that the time spent receiving treatment or counselling or attending training is credited to the worker as time at work, and that the worker does not lose pay or benefits with respect to that time.

(6) An employer shall make a copy of the policy required under subsection (3) readily available to workers.

(7) An employer shall ensure that the policy required under subsection (3) is reviewed and, if necessary, revised not less than once every three years or whenever there is a change of circumstances that could affect the health or safety of workers.

#### Late Night Premises

**36.** (1) In this section, "late night retail premises" means a work site that is open to the public between the hours of 11:00 p.m. and 6:00 a.m. for the purposes of making retail sales to consumers. (*établissement de vente au détail de nuit*)

- (2) An employer of workers at a late night retail premises shall
- (a) conduct a work site hazard assessment in accordance with an approved industry standard; and
  - (b) review and, if necessary, revise the work site hazard assessment not less than once every three years and whenever there is a change of circumstances that could affect the health or safety of workers.

(3) An employer of workers at a late night retail premises shall implement the following security measures:

- (a) the development of written safe cash handling procedures that minimize the amount of money that is readily accessible to workers in the establishment;
- (b) the use of video cameras that capture key areas in the work site including cash desks and outdoor gas pumps, if applicable;
- (c) the establishment of measures to ensure good visibility into and out of the premises;
- (d) the placement of signs to indicate
  - (i) the workers' limited access to cash and valuables, and
  - (ii) the use of video cameras on the premises.

(4) An employer of workers at a late night retail premises between the hours of 11:00 p.m. and 6:00 a.m. shall



- (a) implement a check-in system and a written check-in procedure for the workers; and
- (b) provide a personal emergency transmitter to be worn by the workers that signals for emergency response when activated.

#### PART 4 COMMITTEE AND REPRESENTATIVE

##### Establishment of Committee

- 37.** An employer shall establish a Committee
- (a) at a work site where 20 or more workers work or are likely to work for more than 90 days; or
  - (b) if so directed by the Chief Safety Officer.

##### Composition of Committee

- 38.** If an employer is required to establish a Committee, he or she shall ensure that it is composed of an equal number of
- (a) workers chosen by the workers at the work site, who are representative of and who shall represent the occupational health and safety concerns of the workers at the work site; and
  - (b) individuals chosen by the employer, or by each employer where workers of two or more employers work at the same work site, to represent the employer or employers.

##### Designation of Representative

- 39.** If fewer than 20 workers work at a work site and there is no Committee, each employer shall designate not less than one worker as the occupational health and safety representative for the workers.

##### Names Accessible

- 40.** An employer shall ensure that the name of each member of the Committee or of each representative is readily accessible to workers at the work site.

##### Quorum and Certain Votes

- 41.** (1) A quorum consists of one-half of the members of the Committee, if
- (a) representatives of both employers and workers are present; and
  - (b) not less than one-half of the members present represent workers.

(2) Any business of a Committee that is transacted, and any meeting of a Committee that is held where a quorum is not present is not a valid transaction or meeting.

(3) A decision of the Committee made under subsection 13(5) or (6) of the Act with respect to a refusal to work must be made by a unanimous vote of members of the Committee who are present.

(4) If a Committee is unable to make a decision under subsection (3), it shall, as soon as is reasonably possible, notify and refer the matter to a delegate of the Chief Safety Officer for investigation.

(5) The delegate of the Chief Safety Officer referred to in subsection (4) must be a safety officer.

#### Frequency of Meetings

- 42.** (1) Subject to subsection (2), a Committee shall
- (a) hold its first meeting within 14 days after being established;
  - (b) hold three subsequent meetings not less than once each month; and
  - (c) after the third subsequent meeting referred to in paragraph (b), hold regular meetings at intervals not exceeding three months.

(2) The Chief Safety Officer may require the Committee to meet more frequently than required under subsection (1) due to any of the following at a work site:

- (a) the existence of particular hazards or circumstances;
- (b) the complexity of the work carried out;
- (c) the number of workers.

#### Minutes

- 43.** A Committee shall
- (a) record minutes of each meeting and keep the minutes on file;
  - (b) send a copy of the minutes to the Chief Safety Officer, if required by the Chief Safety Officer; and
  - (c) post a copy of the minutes at a location that is readily accessible to workers at the work site.

#### Co-chairperson

- 44.** (1) At the first meeting of the Committee,
- (a) members of the Committee representing workers shall elect a worker co-chairperson from among their number; and
  - (b) each employer shall jointly appoint only one employer co-chairperson from the members of the Committee representing the employers.

(2) A worker co-chairperson shall keep the workers informed of the activities, concerns and recommendations of the Committee and of any information addressed to the Committee.

(3) An employer co-chairperson shall keep each employer informed of activities, concerns and recommendations of the Committee and of any information addressed to the Committee.

(4) An employer shall facilitate the performance of a worker co-chairperson's duties during normal work hours by

- (a) permitting meetings of workers; or
- (b) other means that are appropriate in the circumstances.

### Special Meetings

**45.** Either co-chairperson may call a special meeting of the Committee to deal with urgent concerns, imminent dangers to health or safety, investigations of accidents causing serious bodily injury or dangerous occurrences, or refusals to work under section 13 of the Act.

### Meetings of Employers and Representatives

**46.** (1) If a representative is designated for a work site, each employer shall meet with the representative regularly to discuss health and safety matters.

(2) A representative may call a special meeting with an employer to deal with urgent concerns, imminent dangers to health and safety or investigations of accidents causing serious bodily injury or of dangerous occurrences.

### Opportunity for Necessary Activities

- 47.** (1) An employer shall ensure that
- (a) the Committee or representative is allowed to examine any log book, inspection report or other record that the employer is required to keep at the work site under the Act or these regulations;
  - (b) each member of the Committee or a representative has reasonable opportunity, during normal working hours and without loss of pay or benefits, to receive and investigate concerns, to inform workers of the provisions of the Act or regulations made under the Act, or to conduct other business necessary for the functioning of the Committee or representative;
  - (c) the members of the Committee have reasonable opportunity to hold a special meeting under section 45 at any time; and
  - (d) the representative has reasonable opportunity to hold a special meeting under subsection 46(2) at any time.

(2) An employer shall ensure that each member of the Committee or a representative who participates in a regular meeting held under subsection 42 or subsection 46(1) or in a special meeting held under section 45 or subsection 46(2), does not lose any pay or benefits as a result of that participation.

#### Meetings Called by Safety Officer

- 48.** A safety officer may meet with the Committee or with the representative for the purpose of
- (a) ensuring the proper functioning of the Committee or representative;
  - (b) providing information to the Committee or representative; or
  - (c) providing education concerning occupational health or safety to the Committee or representative.

#### Duty to Inspect Work Site

- 49.** An employer shall ensure that the Committee or representative
- (a) performs an inspection of the work site not less than once every three months; and
  - (b) submits a written report of each inspection to the employer.

#### Representation During Inspection or Investigation

**50.** If a safety officer inspects a work site or investigates an accident at a work site, he or she may require a Committee member or representative to be present at the inspection or investigation.

#### Training of Committee Members and Representative

- 51.** (1) If a Committee is established at a work site, the employer shall ensure that the co-chairpersons of the Committee receive training respecting the duties and functions of the Committee.
- (2) If a representative is designated at a work site, the employer shall ensure that the representative receives training respecting the duties and functions of the representative.
- (3) If a member of a Committee or a representative attends a training program, seminar or course of instruction on health and safety matters conducted or provided by the Commission or by an approved training agency, the employer shall credit the member or representative's attendance as time at work and ensure that he or she loses no pay or benefits as a result of that attendance.

### Replies by Employer

**52.** An employer shall, as soon as is reasonably possible after receiving a recommendation made by a Committee or representative, reply in writing to the Committee or representative with a response to the recommendation.

### Communication by Safety Officer

**53.** (1) In this section, "communication" includes any order, notice or report.  
(*communication*)

(2) An employer who receives a written communication from a safety officer shall make the communication readily available to workers for not less than 30 days after the date of receiving it.

(3) If a safety officer issues a written communication to an employer relating to the health and safety of workers, the employer shall ensure that a copy of the communication is sent to the Committee or representative.

## PART 5 FIRST AID

### Interpretation

**54.** In this Part,

"close" means, in relation to a work site, a work site no more than 30 minutes' travel time from a hospital or medical facility under normal travel conditions using available means of transportation; (*rapproché*)

"distant" means, in relation to a work site, a work site that is between 30 minutes' and two hours' travel time from a hospital or medical facility under normal travel conditions using available means of transportation; (*éloigné*)

"medical facility" means a medical clinic or office where a medical professional is readily available. (*installation médicale*)

### Application

**55.** This Part does not apply to

- (a) a hospital, medical clinic, medical professional's office, nursing home or other health care facility as defined in section 463, where a medical professional is readily available; or

- (b) a close work site at which the work performed is entirely of an administrative, professional or clerical nature that does not require substantial physical exertion or exposure to potentially hazardous conditions, work processes or substances.

#### Provision of First Aid

- 56.** Subject to section 57, an employer shall
- (a) provide the first aid attendants, supplies, equipment, facilities and transportation required by this Part to render prompt and appropriate first aid to workers at a work site;
  - (b) review the provisions of this Part in consultation with the Committee or representative or, if there is no Committee or representative available, the workers;
  - (c) if the provisions of this Part are not adequate to meet a specific hazard at a work site, provide additional first aid attendants, supplies, equipment and facilities that are appropriate for the hazard; and
  - (d) ensure that, where a worker could be entrapped or incapacitated in a situation that could be dangerous to an individual involved in the rescue operation,
    - (i) an effective written procedure for the rescue of the worker is developed, and
    - (ii) suitable first aid attendants and rescue equipment are provided.

#### Multiple Employers

- 57.** (1) If there are multiple employers at a work site,
- (a) the employers may agree in writing to provide collectively the first aid attendants, supplies, equipment, facilities and transportation for injured workers required by this Part; or
  - (b) a safety officer may require the employers to provide collectively the first aid attendants, supplies, equipment, facilities and transportation for injured workers required by this Part.

(2) If subsection (1) applies, the total number of workers of all employers at the work site is deemed to be the number of workers at the work site.

#### First Aid Attendants

- 58.** (1) An employer shall provide the first aid attendants and supplies as summarized in Schedule G for
- (a) the distance of the work site to the nearest medical facility; and
  - (b) the number of workers at the work site at any one time.

(2) An employer shall ensure that a first aid attendant required by these regulations has

- (a) a Level 1 qualification as set out in Schedule A; or
- (b) a Level 2 qualification as set out in Schedule B.

(3) If rescue personnel are required by these regulations to be provided at a work site, the employer shall ensure that not less than one first aid attendant with a Level 1 qualification is readily available during working hours, in addition to what is required under subsection (1).

(4) Despite any other provision of this Part, if an employer provides lodging for workers at or near a distant or isolated work site, the employer shall provide the first aid attendants, supplies, equipment and facilities set out in Schedules G, H, I and J based on the total number of workers at or near the work site, whether or not the workers are all working at any one time.

(5) An employer shall

- (a) allow a first aid attendant and any other worker that the first aid attendant needs for assistance, to provide prompt and adequate first aid to a worker who has been injured or taken ill; and
- (b) ensure that the first aid attendant and any other worker assisting the first aid attendant have adequate time, with no loss of pay or benefits, to provide first aid.

#### Certificates

**59.** (1) A certificate issued by an approved agency is not valid for the purposes of this Part, unless the certificate specifies a level of qualification and an expiry date.

(2) A certificate referred to in subsection (1) must indicate an expiry date that is not more than three years from its date of issue.

#### First Aid Station

**60.** (1) An employer shall, at each work site, provide and maintain a readily accessible first aid station that contains

- (a) a first aid box containing the supplies and equipment set out in Schedule H;
- (b) a suitable first aid manual; and
- (c) any other supplies and equipment required by these regulations.

(2) An employer shall ensure that

- (a) the location of a first aid station is clearly and conspicuously identified; and
- (b) at each first aid station, an appropriate emergency procedure is prominently displayed that includes

- (i) an emergency telephone number list and other instructions for reaching the nearest fire, police, ambulance, hospital or other appropriate service, and
- (ii) any written rescue procedure required by subparagraph 56(d)(i).

#### First Aid Room

**61.** If there are likely to be 100 or more workers working at a distant or isolated work site at any one time, an employer shall provide a first aid room that

- (a) is of adequate size, is clean and is provided with adequate lighting, ventilation and heating;
- (b) is equipped with
  - (i) a permanently installed sink, with hot and cold water,
  - (ii) the first aid supplies, documents and equipment required by this Part, and
  - (iii) a cot or bed with pillows;
- (c) is under the charge of a first aid attendant with the qualifications required by this Part, who is readily available to provide first aid; and
- (d) is used exclusively for the purposes of administering first aid.

#### First Aid Register

**62.** An employer shall ensure that

- (a) each first aid station and first aid room is provided with a first aid register;
- (b) the particulars of first aid treatments administered or cases referred to medical attention are recorded in the first aid register;
- (c) the first aid register is readily available for inspection by the Committee or representative; and
- (d) a first aid register that is no longer in use is retained for a period of not less than three years after the day on which the register ceased to be used.

#### Workers Being Transported

**63.** If workers are being transported by an employer from a distant or isolated work site to a first aid station, medical clinic, medical professional's office, hospital or other health care facility as defined in section 463, the employer shall provide a first aid box that contains the supplies and equipment set out in Schedule H and that is readily available to the workers being transported.



### First Aid Supplies and Equipment

- 64.** (1) An employer shall ensure that
- (a) first aid supplies and equipment are protected and kept in a clean and dry state; and
  - (b) no supplies, equipment or materials other than supplies and equipment for first aid are kept in the first aid box.
- (2) An employer shall, at a work site where a first aid attendant is required under section 58, provide additional supplies and equipment set out in
- (a) Schedule I, if the first aid attendant requires a Level 1 qualification; or
  - (b) Schedule J, if the first aid attendant requires a Level 2 qualification.
- (3) At a distant or isolated work site, an employer shall provide and make readily accessible to workers two blankets, a stretcher and splints for upper and lower limbs.

### Transportation of Injured Workers

- 65.** (1) An employer shall ensure that a means of transportation for injured workers to a medical facility or hospital is available.
- (2) The following meet the requirements of subsection (1):
- (a) an ambulance service that is within 30 minutes' travel time from the ambulance base to the work site under normal travel conditions;
  - (b) a suitable means of transportation, having regard to the distance to be travelled and the hazards to which workers are exposed, that affords protection against the weather and is equipped, if reasonably possible, with a means of communication that permits contact with the medical facility or hospital to which the injured worker is being transported and with the work site.
- (3) If a stretcher is required under subsection 64(3), an employer shall ensure that the means of transportation provided under paragraph (2)(b) is capable of accommodating and securing an occupied stretcher.
- (4) An employer shall provide a means of communication to summon the transportation required by subsection (1).
- (5) If a worker is seriously injured or, in the opinion of a first aid attendant needs to be accompanied during transportation, an employer shall ensure that the worker is accompanied by a first aid attendant during transportation.

## Asphyxiation and Poisoning

**66.** If a worker is at risk of asphyxiation or poisoning, the employer shall ensure that reasonable emergency arrangements are made, prior to commencement of the work, for the rescue of the worker and for the prompt provision of antidotes, supportive measures, first aid, medical attention and any other arrangements that are appropriate to eliminate or reduce the risk to the health and safety of the worker.

### Additional Provisions

**67.** A safety officer may require an employer to take additional measures beyond what is required in this Part for first aid and emergency arrangements at a work site to be adequate if, in the opinion of the safety officer, first aid and emergency arrangements at a work site are inadequate.

## PART 6 GENERAL HEALTH REQUIREMENTS

### Sanitation

**68.** (1) An employer shall, to the extent that is reasonably possible, ensure that a work site is sanitary and kept clean.

(2) If a worker may be exposed to refuse, spills or waste materials that could endanger the worker, an employer shall ensure that the refuse, spill or waste material is removed by a suitable method from the work site as soon as is reasonably possible.

### Ventilation and Air Supply

**69.** An employer shall

- (a) ensure the adequate ventilation of a work site; and
- (b) to the extent that is reasonably possible, render harmless, and prevent the accumulation of, any contaminants or impurities in the air by providing an adequate supply of clean and wholesome air and maintaining its circulation throughout the work site.

### Mechanical Ventilation

**70.** (1) An employer shall

- (a) provide a mechanical ventilation system at a work site that is sufficient and suitable to protect workers against inhalation of a contaminant and to prevent accumulation of the contaminant; and
- (b) ensure that the mechanical ventilation system is maintained and properly used, if any work, activity or process at the work site gives off

- (i) a dust, fume, gas, mist, aerosol, vapour or other airborne contaminant that is hazardous to workers, or
- (ii) substantial quantities of contaminants of any kind.

(2) An employer who provides a mechanical ventilation system at a work site, whether required by subsection (1) or not, shall ensure that the system provides sufficient fresh and tempered air to replace the air exhausted by ventilation.

(3) An employer shall, to the extent that is reasonably possible, ensure that a mechanical ventilation system required by subsection (1)

- (a) includes local exhaust ventilation that is installed and maintained at or near the point of origin of the contaminant so as to effectively prevent the contaminant from entering the air of the work site; and
- (b) is equipped with a device that will provide a warning to workers when the system is not working effectively.

(4) An employer shall ensure that contaminants removed by a mechanical ventilation system under this section are

- (a) exhausted clear of the work site; and
- (b) if reasonably possible, prevented from entering the work site.

(5) An employer shall ensure that effective provision is made for the immediate protection of workers in the event of failure of a mechanical ventilation system required by subsection (1).

(6) If an air cleaning system is used to clean recirculated air, an employer shall ensure that the air cleaning system is designed, installed and maintained to remove particulate and gaseous contaminants at a rate that is sufficient to protect the health and safety of workers.

#### Cleaning and Maintaining Ventilation Systems

**71.** (1) An employer shall ensure that

- (a) a mechanical ventilation system, including any humidifying equipment, is constructed and maintained to minimize the growth and dissemination of micro-organisms, insects and mites through the ventilation system; and
- (b) if reasonably possible, the components of a mechanical ventilation system are readily accessible for cleaning and inspection.

(2) An employer shall ensure that a competent individual inspects and maintains all parts of a mechanical ventilation system, cleans all louvres and replaces or adequately cleans all filters at intervals sufficient to ensure the effective operation of the system.

(3) An employer shall keep ventilation openings free of obstructions and sources of contamination.

- (4) An employer shall ensure that a record of all inspections, maintenance and cleaning of a mechanical ventilation system required by this section
- (a) is made by the competent individual who performs the work; and
  - (b) is readily available for examination by the Committee or representative or, if there is no Committee or representative available, the workers.

### Space

**72.** An employer shall ensure that a work site is not overcrowded to a degree that could endanger workers.

### Lighting

**73.** (1) While workers are present at a work site, an employer shall provide lighting that is sufficient to protect the health and safety of workers and suitable for the work to be done at the work site.

(2) An employer shall ensure that the illuminance of all parts of a work site where a worker could work is not less than 50 lux.

(3) If a failure of the regular lighting system at a work site could endanger the health or safety of workers, an employer shall provide appropriate emergency lighting of not less than 50 lux for the work site.

- (4) An employer shall ensure that
- (a) light fixtures, windows and skylights providing light for work are, if reasonably possible,
    - (i) kept clean, and
    - (ii) free from obstruction, other than for special treatment of light fixtures, windows or skylights to reduce heat or glare; and
  - (b) artificial light sources and reflective surfaces are positioned, screened or provided with a shade, if reasonably possible, to prevent glare or the formation of shadows that cause discomfort.

### Thermal Conditions

**74.** (1) Subject to subsection (3), at an indoor work site, an employer shall provide and maintain thermal conditions, including air temperature, radiant temperature, humidity and air movement, that

- (a) are appropriate to the nature of the work performed;
- (b) provide effective protection for the health and safety of workers; and
- (c) provide reasonable thermal comfort for workers.

(2) If the thermal environment at an indoor work site is likely to be a health or safety concern to workers, an employer shall provide and maintain an appropriate and suitably located instrument for measuring the thermal conditions.

(3) If it is not reasonably possible to control thermal conditions or if work is being performed outdoors, an employer shall provide and maintain measures for

- (a) the effective protection of the health and safety of workers; and
- (b) the reasonable thermal comfort of workers.

(4) If a worker is required or permitted to work in thermal conditions that are different from those associated with the worker's normal duties, an employer shall provide and require the worker to use suitable clothing or other personal protective equipment necessary to protect the health and safety of the worker.

#### Toilet Facilities

**75.** (1) An employer shall, to the extent that is reasonably possible, ensure that suitable and readily accessible toilet facilities for workers

- (a) are provided at a work site, maintained and kept clean;
- (b) are sufficient in number for the number of workers at the work site at any one time; and
- (c) have adequate provision for privacy, heat, light and ventilation.

(2) Subject to subsections (3) to (5), the minimum number of toilet facilities required under subsection (1) is set out in Schedule K.

(3) If toilet facilities are likely to be used by individuals other than workers, an employer shall provide additional toilets in a number that is proportionate to the number set out in Schedule K and, if use by those other individuals is substantial and frequent, the employer shall provide separate toilet facilities for those other individuals.

(4) If there are more than 10 workers and both male and female workers who work at a work site, an employer shall provide separate toilet facilities for workers of each sex in numbers that are proportionate to the numbers of male and female workers present.

(5) If more than 100 male workers work or are likely to work on a shift and the Chief Safety Officer is satisfied that sufficient urinal accommodations are provided, he or she may reduce the minimum number of toilet facilities set out in Schedule K.

(6) An employer shall ensure that each toilet facility required by this section

- (a) is used exclusively for the purposes for which the facility is designed;
- (b) is free from any obstacle or obstruction that could prevent the facility from being used;

- (c) is kept free from vermin;
- (d) is supplied with toilet tissue and with easily cleanable, covered receptacles for waste materials; and
- (e) other than in the case of a urinal, is equipped with an individual compartment and a door that can be locked from the inside.

### Personal Washing

- 76.** (1) An employer shall provide and maintain for the use of workers, suitable facilities for personal washing that
- (a) are located near each toilet at a work site;
  - (b) have a supply of clean hot and cold water or warm water, soap and clean towels or other suitable means of cleaning and drying;
  - (c) have an easily cleanable, covered receptacle for waste materials;
  - (d) are adequately heated, ventilated and lighted; and
  - (e) are kept in a clean and neat condition.
- (2) Water used in personal washing under subsection (1) must be potable.

### Clothing

**77.** (1) Subject to subsection (2), an employer shall provide at a work site and maintain for the use of workers clean, appropriately located and suitable accommodation for street clothing that is not worn at work and for clothing worn at work.

(2) If street clothing not worn at work is likely to become wet, dirty or contaminated from being kept in the same accommodation as clothing worn at work, the accommodation for street clothing must be separate from the accommodation provided for clothing worn at work.

(3) If a worker's work clothing or skin is likely to be contaminated by hazardous substances, an employer shall

- (a) provide protective clothing and head covers appropriate to the work and hazard;
- (b) provide a suitable changing area; and
- (c) ensure that protective clothing and head covers are handled and cleaned or disposed of in a manner that will prevent worker exposure to the hazardous substances.

### Change and Shower Facilities

- 78.** If a worker's skin is likely to be contaminated by harmful substances as part of a regular work process at a work site, an employer shall
- (a) if reasonably possible, provide and maintain suitable, adequate and clean change and shower facilities; and

- (b) allow sufficient time, during normal working hours without loss of pay or benefits, for the worker to use the change and shower facilities.

#### Eating Areas

**79.** (1) An employer shall provide a sufficient number of suitable areas that are kept clean, dry, thermally comfortable and reasonably quiet for workers to eat and drink during work breaks.

(2) If substances used at a work site are likely to soil or otherwise contaminate a worker's person, clothing or food, the employer shall provide an eating area that is separate from the work site and close to washing facilities.

#### Drinking Water

**80.** (1) An employer shall provide, at suitable points that are readily accessible to workers, an adequate supply of clean and safe drinking water.

(2) If the supply of drinking water at a work site is not piped, an employer shall

- (a) provide drinking water in suitable covered containers;
- (b) protect the drinking water from contamination; and
- (c) change the drinking water as often as necessary to ensure that it is clean and safe to drink.

(3) An employer shall provide an adequate supply of clean cups near each supply of drinking water unless the drinking water is supplied in an upward jet.

(4) If it is necessary to identify a supply of drinking water, an employer shall clearly indicate the supply of drinking water with a sign that says "Drinking Water" or by another visual means.

(5) If there is a supply of water at a work site that is unfit for drinking, an employer shall clearly indicate the supply of water with a permanently fixed, durable sign that says "Unfit for Drinking" or by another visual means.

#### Smoking

**81.** (1) Subject to any other enactment, an employer shall control the exposure of workers to environmental tobacco smoke at a work site.

(2) If a work site is an enclosed work site, the employer shall prohibit smoking at the enclosed work site.

(3) An employer may permit smoking outside an enclosed work site in a designated smoking area that is

- (a) not less than 3 m outside the radius of an entrance to or exit from the enclosed work site;
- (b) owned or under the control of the employer; and
- (c) clearly identified by signs or other effective means.

(4) An employer may permit smoking in a designated structure outside an enclosed work site, within a 3 m radius of an entrance to or exit from the enclosed work site, if smoke from the structure does not come into contact with workers entering or leaving the enclosed work site.

(5) If an individual resides at an enclosed work site, the employer may permit smoking within the enclosed work site in a designated smoking area, if the area

- (a) is used exclusively as a smoking area;
- (b) is structurally separated from other areas of the enclosed work site;
- (c) is constructed so that smoke does not enter other areas of the enclosed work site;
- (d) has, if necessary to prevent smoke from entering other areas of the enclosed work site, a separate, non-recirculating exhaust ventilation system that
  - (i) meets the requirements for a smoking lounge specified in ASHRAE Standard 62-2001, *Ventilation for Acceptable Indoor Air Quality*, as amended from time to time, and
  - (ii) discharges directly to the outdoors; and
- (e) is clearly identified by signs posted at the entrance to each designated smoking area that are clearly visible to individuals entering the area.

(6) An employer shall not require a worker to enter an enclosed work site where smoking occurs, unless

- (a) the worker must enter to respond to circumstances that could endanger life, health or property;
- (b) the worker must enter to investigate illegal activity; or
- (c) smoke is effectively removed from the enclosed work site before the worker enters it.

### Lifting and Handling Loads

**82.** (1) An employer shall ensure that, if reasonably possible, suitable equipment is provided and used for the handling of heavy or awkward loads.

(2) If the use of equipment under subsection (1) is not reasonably possible, an employer shall make reasonable efforts to adapt heavy or awkward loads to facilitate lifting, holding or transporting by workers or to otherwise minimize the manual handling required.



(3) An employer shall ensure that a worker does not engage in the manual lifting, holding or transporting of a load that, by reason of its weight, size or shape, or by any combination of these or by reason of the frequency, speed or manner in which the load is lifted, held or transported, is likely to be injurious to the worker.

(4) An employer shall ensure that a worker who engages in the lifting, holding or transporting of loads receives appropriate training in safe methods of lifting, holding and transporting of those loads.

#### Standing

**83.** (1) If a worker is required to stand for long periods in the course of his or her work, an employer shall provide adequate anti-fatigue mats, footrests or other suitable devices to give relief to the worker.

(2) If wet processes are used at a work site, an employer shall ensure that reasonable drainage is maintained and that false floors, platforms, mats or other dry standing places are provided, maintained and kept clean.

#### Sitting

**84.** If there is a reasonable opportunity for a worker to work while seated without substantially detracting from the work, an employer shall provide and maintain

- (a) a seat that is suitably designed, constructed, dimensioned and supported for the worker to do the work; and
- (b) if needed, a footrest that can readily and comfortably support the worker's feet.

#### Musculoskeletal Injuries

**85.** (1) In this section, "musculoskeletal injuries" means injuries or disorders of the muscles, tendons, ligaments, nerves, joints, bones or supporting vasculature that are caused or aggravated by any of the following:

- (a) repetitive movement;
- (b) forceful exertion;
- (c) vibration;
- (d) mechanical compression;
- (e) sustained or awkward posture;
- (f) limitation on motion or action;
- (g) other ergonomic stressors. (*blessures musculosquelettiques*)

(2) An employer shall regularly review the activities at the work site that could cause or aggravate musculoskeletal injuries, in consultation with the Committee or representative or, if there is no Committee or representative available, the workers.

(3) If an activity that could cause or aggravate musculoskeletal injuries is identified under subsection (2), an employer shall

- (a) inform each worker who could be at risk of the injuries of that risk and of the signs and common symptoms of those injuries; and
- (b) provide effective protection for each worker who could be at risk of the injuries, including
  - (i) providing equipment that is designed, constructed, positioned and maintained to reduce the harmful effects of the activity,
  - (ii) implementing appropriate work practices and procedures to reduce the harmful effects of the activity, or
  - (iii) implementing work schedules that incorporate rest and recovery periods, changes in workload or other arrangements for alternating work to reduce the harmful effects of the activity.

(4) An employer shall ensure that a worker who could be at risk of developing musculoskeletal injuries is instructed in the safe performance of his or her work, including the use of appropriate work practices and procedures, equipment and personal protective equipment.

- (5) If a worker has symptoms of musculoskeletal injuries, an employer shall
- (a) advise the worker to consult a medical professional; and
  - (b) promptly review the activities of the worker and of other workers doing similar tasks, to identify the cause of the symptoms and to take corrective measures to avoid further injuries.

#### Shift Work and Constant Effort and Exertion

**86.** If a worker works shifts or a worker's work demands constant and uninterrupted mental effort or constant and uninterrupted physical exertion, an employer, in consultation with the Committee or representative or, if there is no Committee or representative available, the workers, shall

- (a) assess the risks to the worker's health and safety caused by the worker's work; and
- (b) inform the worker of the nature and extent of the risks referred to in paragraph (a) and the ways to eliminate or reduce those risks.

#### Visually Demanding Tasks

**87.** (1) An employer shall identify any tasks that involve a hazardous visual demand on a worker, in consultation with the Committee or representative or, if there is no Committee or representative available, the workers.

- (2) An employer shall
- (a) take reasonable steps to reduce harmful visual demands on a worker;
  - (b) inform the worker of the risk of performing those tasks identified in subsection (1);
  - (c) advise the worker to consult a medical professional or an optometrist if any persistent vision impairment, disability or visual strain results from performing the tasks;
  - (d) permit the worker to attend the consultation referred to in paragraph (c) during normal working hours without loss of pay or benefits; and
  - (e) reimburse the worker for reasonable costs of the consultation referred to in paragraph (c), if a worker cannot recover the costs of the consultation.

#### Exposure Control Plan

**88.** (1) In this section,

"engineering controls" means physical controls or barriers that isolate or remove an infectious disease hazard such as

- (a) medical devices approved by Health Canada that have engineered sharps injury protections,
- (b) sharps disposal containers,
- (c) needleless systems and needles with engineered sharps injury protections as defined under subsection 471(1), and
- (d) other devices that isolate or remove sharps hazards; (*mesures d'ingénierie*)

"expose" means contact with an infectious material or organism from inhalation, ingestion, absorption or injection; (*exposer*)

"exposure control plan" means an exposure control plan developed and implemented under subsection (2); (*plan de contrôle de l'exposition*)

"infectious material or organism" means a material or organism that has been identified in an approved manner as an infectious disease hazard and that poses a significant risk to an exposed worker. (*matière ou organisme infectieux*)

(2) If workers are required or permitted to handle, use or produce or be exposed to an infectious material or organism at a work site, an employer shall develop and implement an exposure control plan to eliminate or minimize worker exposure, in consultation with the Committee or representative or, if there is no Committee or representative available, the workers.

- (3) An exposure control plan must
- (a) be in writing;
  - (b) identify any workers at the work site who could be exposed;
  - (c) identify categories of activities and procedures that could put workers at risk of exposure;
  - (d) describe the ways in which an infectious material or organism can enter the body of a worker and the hazards associated with that entry;
  - (e) describe the signs and symptoms of any disease that could arise for a worker exposed at the work site;
  - (f) describe infection control measures to be used, including
    - (i) vaccination,
    - (ii) engineering controls,
    - (iii) personal protective equipment,
    - (iv) safe work practices and procedures, and
    - (v) standard practices that incorporate universal precautions;
  - (g) identify the limitations of the infection control measures described in paragraph (f);
  - (h) set out procedures to be followed if
    - (i) a spill or leak of an infectious material or organism occurs,
    - (ii) a worker is exposed, or
    - (iii) a worker believes that he or she was exposed;
  - (i) set out the methods of cleaning, disinfecting or disposing of clothing, personal protective equipment or other equipment contaminated with an infectious material or organism that must be followed, and indicate who is responsible for carrying out those activities;
  - (j) describe the training to be provided to workers who could be exposed and the means by which this training is to be provided;
  - (k) require the investigation and documentation, in a manner that protects the confidentiality of the exposed worker, of any work-related exposure incident, including the route of exposure, and the circumstances in which the exposure occurred; and
  - (l) require the investigation of any occurrence of an occupationally transmitted infection or infectious disease including the identification of the route of exposure and measures to prevent further infection.

(4) An employer shall not require or permit a worker to undertake any tasks or procedures referred to in paragraph (3)(c) unless the worker is trained with respect to the exposure control plan and the use of control measures appropriate for the task or procedure undertaken.

(5) An employer shall review the adequacy of the exposure control plan and amend the plan

- (a) not less than once every two years or as necessary to reflect advances in infection control measures, including engineering controls; and
- (b) in consultation with the Committee or representative or, if there is no Committee or representative available, the workers.

(6) An employer shall make a copy of the exposure control plan readily available to each worker who could be exposed.

(7) An employer shall

- (a) inform workers, who are required or permitted to handle, use or produce an infectious material or organism or who could be exposed at a work site,
  - (i) of any vaccine recommended for workers with respect to that material or organism in the *Canadian Immunization Guide, Seventh Edition–2006*, published by the Public Health Agency of Canada, as amended from time to time, and recommended by
    - (A) the Chief Medical Health Officer or a health officer appointed under the *Public Health Act*, or
    - (B) a medical professional with expertise in immunization or the control of communicable diseases, and
  - (ii) of the risks associated with taking a vaccine referred to in subparagraph (i)
- (b) if a worker consents, arrange for the worker to receive any vaccination recommended under subparagraph (a)(i) during the worker's normal working hours and reimburse the worker for any costs associated with receiving the vaccination; and
- (c) if a worker cannot receive a vaccination referred to in subparagraph (a)(i) during the worker's normal working hours, credit the worker's attendance for the vaccination as time at work and ensure that the worker does not lose any pay or benefits.

(8) If a worker is exposed to blood or potentially infectious bodily fluids at a work site, an employer shall, if the worker consents, arrange for an immediate medical evaluation and intervention, during the worker's normal working hours, by a qualified individual in an approved manner and for confidential post-exposure counselling.

(9) If a worker cannot receive a medical evaluation, medical intervention or post-exposure counselling during the worker's normal working hours, an employer shall credit the worker's attendance for evaluation, intervention or counselling as time at work and shall ensure that the worker does not lose any pay or benefits.

(10) Nothing in these regulations prohibits an employer from purchasing supplies in bulk together with another employer, but each employer is responsible for ensuring his or her compliance with these regulations.

## PART 7 PERSONAL PROTECTIVE EQUIPMENT

### Suitable and Adequate Equipment

**89.** (1) If it is not reasonably possible to protect the health and safety of a worker by design of a plant and work processes, suitable work practices or administrative controls, an employer shall ensure that the worker wears or uses suitable and adequate personal protective equipment.

(2) If personal protective equipment will not effectively protect a worker, an employer shall, if reasonably possible, provide alternative work arrangements for the worker.

### General Responsibilities

**90.** (1) An employer who is required by these regulations to provide personal protective equipment to a worker shall

- (a) provide approved personal protective equipment for use by the worker at no cost to the worker;
- (b) ensure that the personal protective equipment is used by the worker;
- (c) ensure that the personal protective equipment is at the work site before work begins;
- (d) ensure that the personal protective equipment is stored in a clean, secure location that is readily accessible to the worker;
- (e) ensure that the worker is
  - (i) aware of the location of the personal protective equipment, and
  - (ii) trained in its use;
- (f) inform the worker of the reasons why the personal protective equipment is required to be used and of the limitations of its protection; and
- (g) ensure that personal protective equipment provided to the worker is
  - (i) suitable and adequate and a proper fit for the worker,
  - (ii) maintained and kept in a sanitary condition, and
  - (iii) removed from use or service when damaged.

(2) If an employer requires a worker to clean and maintain personal protective equipment, the employer shall ensure that the worker has adequate time to do so during normal working hours without loss of pay or benefits.

(3) If reasonably possible, an employer shall make appropriate adjustments to the work procedures and the rate of work to eliminate or reduce any danger or discomfort to the worker that could arise from the worker's use of personal protective equipment.

(4) A worker who is provided with personal protective equipment by an employer shall

- (a) use the personal protective equipment; and
- (b) take reasonable steps to prevent damage to the personal protective equipment.

(5) If personal protective equipment provided to a worker becomes defective or otherwise fails to provide the protection it is intended for, the worker shall

- (a) return the personal protective equipment to the employer; and
- (b) inform the employer of the defect or other reason why the personal protective equipment does not provide the protection that it was intended to provide.

(6) An employer shall immediately repair or replace any personal protective equipment returned to the employer under paragraph (5)(a).

#### Respiratory Protective Devices

**91.** (1) If a worker is likely to be exposed to dust, fumes, gas, mist, aerosol, vapour or other airborne contaminant that could be present in an amount that is harmful to the worker, an employer shall

- (a) provide an approved respiratory protective device, for use by the worker, that
  - (i) gives suitable and adequate protection to the worker from one or more airborne contaminants,
  - (ii) is the proper size for the worker's face,
  - (iii) makes an effective seal to the facial skin of the worker, if a tight fit is essential to the proper functioning of the respiratory protective device, and
  - (iv) has been fit-tested by a competent individual in an approved manner, where a tight fit is essential to ensure the worker is not exposed to one or more airborne contaminants that could be harmful to the worker;
- (b) ensure that the respiratory protective device is regularly cleaned and maintained in an approved manner; and
- (c) ensure that the respiratory protective device is kept, when not in use, in a convenient and sanitary location in which the device is not exposed to extremes of temperature or to any contaminant that could hinder the operation of the device.

(2) If a respiratory protective device is provided to a worker under subsection (1), the employer shall ensure that the worker is

- (a) trained by a competent individual in the proper testing, maintenance, use and cleaning of the respiratory protective device and in its limitations;
- (b) able to demonstrate that he or she
  - (i) understands the training provided under paragraph (a),
  - (ii) can test, maintain and clean the respiratory protective device, and
  - (iii) can use the respiratory protective device safely;
- (c) required to and tests the respiratory protective device before each use;
- (d) assessed according to an approved standard as being capable of wearing a respiratory protective device; and
- (e) adequately informed of the reasons for the assessment required by paragraph (d).

(3) An employer shall ensure that the training required by paragraph (2)(a) includes practical experience by the worker in an uncontaminated environment.

(4) If a respiratory protective device is used only for emergency purposes, an employer shall ensure that a worker who could be required to use the respiratory protective device is given semi-annual refresher training in its safe use.

(5) An employer shall ensure that the following records are kept as long as the worker works for the employer and made readily available for inspection and examination by the Committee or representative, as the case may be:

- (a) records respecting fit-testing for each worker completed under subparagraph (1)(a)(iv);
- (b) records of the results of assessments for each worker completed under paragraph (2)(d);
- (c) records respecting training completed by each worker under subsection (2) and the practical experience referred to in subsection (3).

(6) An employer shall ensure that records respecting the maintenance of atmosphere-supplying respirators used by a worker are kept and made readily available for inspection and examination by the Committee or representative, as long as that worker works for the employer.

(7) A worker may, at any time, inspect and examine any records kept under subsection (5) or (6) respecting the worker.



### Inspection of Respiratory Protective Devices

- 92.** An employer shall ensure that
- (a) any respiratory protective device for emergency use is thoroughly inspected by a competent individual not less than once every month and after each use;
  - (b) the date of each inspection made under paragraph (a) and the name of the individual who made the inspection are recorded and conspicuously displayed at the location where the respiratory protective device is stored; and
  - (c) any defects identified during the inspection carried out under paragraph (a) are corrected immediately by a competent individual or the respiratory protective device is taken out of service.

### Working in Dangerous Atmospheres

**93.** (1) In this section, "immediately dangerous to life or health" means a condition in which a hazardous atmosphere exists to such an extent that a worker who is not using an approved respiratory protective device will suffer escape-impairing or irreversible health effects. (*présentant un danger immédiat pour la vie ou la santé*)

(2) If a worker is required or permitted to enter an atmosphere that is immediately dangerous to life or health, an employer shall ensure that the worker is provided with and uses an approved atmosphere-supplying respirator that is

- (a) an open circuit SCBA that
  - (i) operates in a pressure demand or other positive pressure mode,
  - (ii) has a minimum rated capacity of 30 minutes,
  - (iii) is sufficiently charged to enable the worker to perform the work safely, and
  - (iv) is equipped with a low pressure warning device or an escape respirator;
- (b) an airline respirator equipped with a full face-piece that
  - (i) operates in a pressure demand or other positive pressure mode, and
  - (ii) has an auxiliary supply of air sufficient to allow the worker to escape in case of failure of the primary air supply equipment; or
- (c) a closed circuit SCBA.

(3) If a worker is required or permitted to enter an atmosphere that is immediately dangerous to life or health, an employer shall ensure that

- (a) a second worker, suitably equipped and trained, is present and in communication with the worker at all times; and

- (b) suitably equipped personnel who are trained in rescue procedures and are fully informed of the hazards are readily available to rescue the endangered worker immediately if the worker's atmosphere-supplying respirator fails or the worker becomes incapacitated for any other reason.

(4) An employer shall ensure that compressed air in an atmosphere-supplying respirator used by a worker in an atmosphere that is immediately dangerous to life or health meets approved purity requirements.

#### Head Protection

- 94.** (1) If there is a risk of injury to the head of a worker, an employer shall
- (a) ensure that the worker is provided with approved industrial head protection; and
  - (b) require a worker to use it.

(2) If a worker may contact an exposed energized conductor, an employer shall provide, and require the worker to use, approved industrial head protection that is of adequate dielectric strength to protect the worker.

(3) If a worker is required by these regulations to use industrial head protection, an employer shall provide the worker with

- (a) a suitable liner if it is necessary to protect the worker from cold conditions; and
- (b) a retention system to secure the industrial head protection firmly to the worker's head if the worker is likely to work in conditions that could cause the head protection to dislodge.

(4) If visibility of a worker is necessary to protect the health and safety of the worker, an employer shall ensure that any industrial head protection provided to a worker under these regulations is fluorescent orange or some other high visibility colour.

(5) An employer shall not require or permit a worker to use any industrial head protection that

- (a) is damaged or structurally modified;
- (b) has been subjected to severe impact; or
- (c) has been painted or cleaned with solvents.

#### Workers Using All-terrain Vehicles

- 95.** (1) In this section,

"all-terrain vehicle" means an all-terrain vehicle as defined in subsection 1(1) of the *All-terrain Vehicles Act*; (*véhicule tout-terrain*)

"towed conveyance" means any sled, cutter, qamutiq, trailer, toboggan or carrier that could be towed by an all-terrain vehicle. (*moyen de transport remorqué*)

(2) An employer shall ensure that a worker who is required or permitted to travel in or on an all-terrain vehicle or a towed conveyance is provided with and required to use

- (a) approved head protection; and
- (b) approved eye or face protectors, if the all-terrain vehicle or towed conveyance does not have an enclosed cab.

(3) Paragraph (2)(a) does not apply if

- (a) the all-terrain vehicle is equipped with roll-over protective structures and enclosed by a cab that is an integral part of the vehicle; and
- (b) the worker is provided with a seat belt secured to the vehicle and is required to use it.

(4) If a worker is required by these regulations to use head protection while working in cold conditions, the head protection must be equipped with a suitable liner and a cold weather face guard.

#### Workers Using Bicycles

**96.** An employer shall ensure that a worker who is required or permitted to travel on a bicycle is provided with and required to use approved head protection.

#### Eye and Face Protection

**97.** (1) If there is a risk of irritation or injury to the face or eyes of a worker from flying objects or particles, splashing liquids, molten metal or ultraviolet, visible or infrared radiation, an employer shall provide and require the worker to use an approved industrial eye protector or approved face protector to eliminate or reduce the risk.

(2) An employer shall take all reasonable steps to ensure that a worker does not perform electric arc welding if another worker could be exposed to radiation from the arc, unless the other worker is using an approved industrial eye protector or is protected from the radiation by an approved screen.

(3) A worker shall not perform electric arc welding if another worker could be exposed to radiation from the arc, unless the other worker is using an approved industrial eye protector or is protected from the radiation by an approved screen.

(4) A worker who is required by these regulations to use an industrial eye protector or face protector shall not wear contact lenses.

### Skin Protection

**98.** (1) If there is a risk of injury to the skin of a worker from sparks, molten metal or radiation, an employer shall provide, and require the worker to use, approved protective clothing or covers or any other safeguard that provides equivalent protection for the worker.

(2) If there is a risk of injury to the skin of a worker from fire or explosion, an employer shall provide the worker with, and require the worker to use, fire resistant clothing that

- (a) meets an approved industry standard; and
- (b) is appropriate to the risk.

(3) If there is a risk of injury to the skin of an electrical worker from arc flash, an employer shall provide the electrical worker with, and require the electrical worker to use, approved arc flash protection.

### Lower Body Protection

**99.** If a worker is at risk of a cut, puncture, irritation or abrasion to his or her lower body, an employer shall require the worker to use safety pants or chaps that are suitable for the work being performed.

### Footwear

**100.** (1) An employer shall require that

- (a) a worker uses footwear suitable to minimize any risks associated with the work site and the worker's work; and
- (b) a worker who could be at risk from a heavy or falling object or who could tread on a sharp object uses approved protective footwear.

(2) An employer shall provide to a worker

- (a) outer foot guards if there is substantial risk of a crushing injury to the foot of the worker; and
- (b) approved protective footwear if the feet of the worker could be endangered by hot, corrosive or toxic substances.

### Hand and Arm Protection

**101.** (1) An employer shall provide, and require a worker to use, suitable and properly fitted hand or arm protection to protect the worker from injury to the hand or arm, including

- (a) injury arising from exposure to chemical or biological substances;

- (b) injury arising from exposure to work processes that result in extreme temperatures;
- (c) injury arising from prolonged exposure to water; and
- (d) puncture, abrasion or irritation of the skin.

(2) If a worker could contact an exposed energized high voltage conductor, an employer shall provide, and require the worker to use, approved rubber insulating gloves and mitts and approved rubber insulating sleeves.

### Exposure to Hazardous Substances

**102.** If a worker is routinely exposed to a hazardous substance, an employer shall provide, and require the worker to use, protective clothing, gloves and eye wear or face shields that are adequate to prevent exposure of the worker's skin and mucous membranes to the hazardous substance.

### Lifelines

**103.** (1) Unless otherwise specifically provided, an employer shall ensure that a lifeline is

- (a) suitable for the conditions in which the lifeline is to be used, having regard to the physical factors of the lifeline including strength, abrasion resistance, extensibility and chemical stability;
- (b) made of wire rope or synthetic material;
- (c) free of imperfections, knots and splices, other than end terminations;
- (d) protected by padding where the lifeline passes over sharp edges;
- (e) protected from heat, flame or abrasive or corrosive materials during use;
- (f) fastened to a secure anchor point that
  - (i) has a breaking strength of not less than 22.2 kN, and
  - (ii) is not used to suspend any platform or other load; and
- (g) maintained according to the manufacturer's specifications.

(2) An employer shall ensure that a vertical lifeline required by these regulations has a minimum diameter of

- (a) 12 mm if the lifeline is made of nylon;
- (b) 15 mm if the lifeline is made of polypropylene; or
- (c) 8 mm if the lifeline is made of wire rope.

(3) An employer shall ensure that if a vertical lifeline is used,

- (a) the lower end extends to the ground or to a safe landing; and
- (b) the lifeline is protected at the lower end to ensure that the line cannot be fouled by any equipment.

- (4) An employer shall ensure that a horizontal lifeline is
- (a) either
    - (i) designed and certified by a professional engineer, or
    - (ii) manufactured to an approved standard; and
  - (b) installed and used in accordance with the design or standard referred to in paragraph (a) or the manufacturer's specifications.

#### Personal Fall Arrest System

**104.** (1) An employer shall ensure that a personal fall arrest system and connecting linkage required by these regulations are each approved and maintained.

(2) An employer shall ensure that a personal fall arrest system required by these regulations

- (a) prevents a worker from falling more than 1.2 m without a shock absorber;
- (b) if a shock absorber is used, prevents a worker from falling more than 2 m or the limit specified by the manufacturer's specifications, whichever is less;
- (c) applies a peak fall arrest force not exceeding 8 kN to a worker; and
- (d) is fastened to a lifeline or to a secure anchor point that has a breaking strength of not less than 22.2 kN.

#### Full Body Harness

**105.** If a full body harness is required by these regulations, an employer shall ensure that

- (a) the full body harness and connecting linkage are each approved and maintained;
- (b) the full body harness is properly fitted to the worker;
- (c) the worker is trained in the safe use of the full body harness;
- (d) all metal parts of the full body harness and connecting linkage are of drop-forged steel 22 kN proof tested;
- (e) a protective thimble is used to protect ropes or straps from chafing whenever a rope or strap is connected to an eye or a D-ring used in the full body harness or connecting linkage; and
- (f) the connecting linkage is attached to a personal fall arrest system, lifeline or secure anchor point to prevent the worker from falling more than 1.2 m.

#### Snap Hooks on Personal Fall Arrest System

**106.** If a snap hook is used as an integral component of a personal fall arrest system, connecting linkage, full body harness or lifeline, an employer shall ensure that the snap hook is self-locking and is approved and maintained.

### Lanyards

- 107.** An employer shall ensure that a lanyard is
- (a) as short as work conditions permit;
  - (b) constructed of
    - (i) nylon, polyester or polypropylene rope or webbing, or
    - (ii) wire rope that is equipped with an approved shock absorbing device;
  - (c) equipped with suitable snap hooks; and
  - (d) approved and maintained.

### Workers' Responsibilities

- 108.** (1) Before using a lifeline or lanyard, a worker shall ensure that the lifeline or lanyard is
- (a) free of imperfections, knots and splices, other than end terminations;
  - (b) protected by padding where the lifeline or lanyard passes over sharp edges; and
  - (c) protected from heat, flame or abrasive or corrosive materials during use.
- (2) Before using a vertical lifeline, a worker shall ensure that
- (a) the lower end extends to the ground or to a safe landing; and
  - (b) the lifeline is protected at the lower end to ensure that the line cannot be fouled by any equipment.
- (3) Before using a full body harness, a worker shall ensure that the full body harness is
- (a) properly adjusted to fit the worker securely; and
  - (b) attached by means of a connecting linkage to a personal fall arrest system, lifeline or fixed anchor.
- (4) A worker who uses a full body harness and connecting linkage shall ensure that the connecting linkage is attached to a personal fall arrest system, lifeline or fixed anchor.

### Inspections

- 109.** (1) If these regulations require the use of a connecting linkage, personal fall arrest system, full body harness or lifeline, an employer shall ensure that a competent individual
- (a) inspects it in accordance with the manufacturer's recommendations;
  - (b) inspects it after it has been used to arrest a fall; and
  - (c) determines whether it is safe for continued use.

(2) An employer shall ensure that a worker inspects a connecting linkage, personal fall arrest system, full body harness or lifeline before each use and that if it has a defect or is in a condition that could endanger a worker,

- (a) steps are taken, without delay, to protect the health and safety of any worker who could be endangered until the defect is repaired or the condition is corrected; and
- (b) as soon as is reasonably possible, the defect is repaired or the condition is corrected.

### Protection Against Drowning

**110.** (1) In this section,

"buoyant apparatus" means a device that is capable of supporting, in water, the weight of a worker and that is constructed to

- (a) remain stable when floating on either side,
- (b) have no projections that would prevent the buoyant apparatus from sliding easily over the side of a boat or ship, and
- (c) require no adjustment before use; (*engin flottant*)

"life jacket" means an approved device that is capable of keeping a worker's head above water in a face up position without effort by the worker; (*gilet de sauvetage*)

"personal flotation device" means an approved device that is capable of keeping a worker's head above water without effort by the worker, and is designed to protect a worker against hypothermia. (*vêtement de flottaison individuel*)

(2) If a worker is required or permitted to work at a place from which the worker could fall and drown, and the worker is not protected by a guardrail, an employer shall

- (a) provide the worker with a life jacket and ensure that the worker uses it, and ensure that the rescue equipment and personnel described in subsection (3) are readily available;
- (b) provide the worker with a full-body harness and lifeline and ensure that the worker uses them; or
- (c) ensure that a net is installed that is capable of safely catching the worker if the worker falls.

(3) The rescue equipment and personnel required by paragraph (2)(a) must consist of

- (a) a suitable boat equipped with a boat hook;
- (b) a buoyant apparatus attached to a nylon rope that is not less than 9 mm in diameter and not less than 15 m long; and
- (c) a sufficient number of suitably equipped and trained workers to implement rescue procedures.



(4) An employer shall ensure that a life jacket or personal flotation device is provided for each worker who is transported by boat or works from a boat, and that each worker uses the life jacket or personal flotation device when the worker is in the boat.

PART 8  
NOISE CONTROL AND HEARING  
CONSERVATION

Interpretation

**111.** In this Part, "dBA  $L_{ex}$ " means the level of a worker's total exposure to noise in dBA, averaged over an entire workday and adjusted to an equivalent eight-hour exposure. (dBA  $L_{ex}$ )

General Duty

**112.** (1) An employer shall ensure that, if reasonably possible, measures are taken to reduce noise levels in areas where workers may be required or permitted to work.

(2) The means to reduce noise levels under subsection (1) may include any of the following:

- (a) eliminating or modifying the noise source;
- (b) substituting quieter equipment or processes;
- (c) enclosing the noise source;
- (d) installing acoustical barriers or sound absorbing materials.

Noise Reduction Through Design and Construction of Buildings

**113.** An employer shall ensure that

- (a) new work sites are designed and constructed so as to achieve the lowest noise level that is reasonably possible;
- (b) any alteration, renovation or repair to an existing work site is made so as to achieve the lowest noise level that is reasonably possible;

and

- (c) new equipment to be used at a work site is designed and constructed so as to achieve the lowest noise level that is reasonably possible.

Measurement of Noise Levels

**114.** (1) In an area where a worker is required or permitted to work and the noise level could frequently exceed 80 dBA, an employer shall ensure that

- (a) the noise level is measured in accordance with an approved method;

- (b) in consultation with the Committee or representative, a competent individual evaluates the sources of the noise and recommends corrective action; and
- (c) a record is kept of the measurements, evaluation and recommendations made.

(2) An employer shall measure the noise level in accordance with subsection (1) when any of the following could result in a significant change in noise levels or noise exposure:

- (a) altering, renovating or repairing the work site;
- (b) introducing new equipment to the work site; or
- (c) modifying a process at the work site.

(3) An employer shall keep a record of the results of any noise level measurements conducted at the work site as long as the employer operates in Nunavut.

(4) On request, an employer shall make available to a worker the results of any measurements conducted under this section in respect of that worker.

(5) An employer shall ensure that an area where the measurements taken under subsection (1) show noise levels that exceed 80 dBA, is clearly marked by a sign indicating the range of noise levels.

#### Daily Exposure Between 80 dBA $L_{ex}$ and 85 dBA $L_{ex}$

**115.** If a worker is exposed at a work site to noise that is between 80 dBA  $L_{ex}$  and 85 dBA  $L_{ex}$ , an employer shall

- (a) inform the worker of the hazards of noise exposure;
- (b) on the request of the worker, make available to the worker approved hearing protectors; and
- (c) train the worker in the selection, use and maintenance of the hearing protectors.

#### Daily Exposure Exceeding 85 dBA $L_{ex}$

**116.** (1) If a worker is exposed at a work site to noise that exceeds 85 dBA  $L_{ex}$ , an employer shall

- (a) establish and maintain an occupational health and safety program under section 21;
- (b) inform the worker of the hazards of occupational noise exposure;
- (c) take all reasonably possible steps to reduce noise levels in areas where the worker could be required or permitted to work;
- (d) minimize the worker's noise exposure to the extent that is reasonably possible; and
- (e) keep a record of the steps taken under paragraphs (c) and (d).

(2) If, in the opinion of an employer, it is not reasonably possible to reduce noise levels or minimize a worker's occupational noise exposure to less than 85 dBA  $L_{ex}$ , the employer shall provide written reasons for that opinion to the Committee or representative.

(3) If it is not reasonably possible to reduce a worker's occupational noise exposure below 85 dBA  $L_{ex}$  or the noise level below 90 dBA in any area where a worker could be required or permitted to work, an employer shall

- (a) provide an approved hearing protector to the worker;
- (b) train the worker in the use and maintenance of the hearing protector; and
- (c) arrange for the worker to have, not less than once every 24 months during the worker's normal working hours, an audiometric test and appropriate counselling based on the test results under the direction of a medical professional or qualified audiologist.

(4) If a worker cannot attend an audiometric test referred to in paragraph (3)(c) during the worker's normal working hours, an employer shall credit the worker's attendance at the test as time at work and ensure that the worker does not lose any pay or benefits.

(5) If a worker cannot recover his or her costs of an audiometric test referred to in paragraph (3)(c), an employer shall reimburse the worker for the costs of the test that, in the opinion of the Chief Safety Officer, are reasonable.

#### Hearing Conservation Plan

**117.** (1) If 20 or more workers' occupational noise exposure exceeds or is believed to exceed 85 dBA  $L_{ex}$ , an employer shall, in consultation with the Committee or representative,

- (a) develop a hearing conservation plan; and
- (b) review and, as necessary, revise the hearing conservation plan not less than once every three years.

(2) An employer shall implement a hearing conservation plan developed under subsection (1).

- (3) A hearing conservation plan must be in writing and must include
- (a) the methods and procedures to be used in assessing the occupational noise exposure of workers;
  - (b) the methods of noise control to be used, including engineering controls and administrative arrangements;
  - (c) the selection, use and maintenance of hearing protectors;
  - (d) a plan to train workers in the hazards of excessive exposure to noise and the correct use of control measures and hearing protectors;

- (e) the maintenance of exposure records;
- (f) the requirements for audiometric tests; and
- (g) a schedule for reviewing the hearing conservation plan and procedures for conducting the review.

(4) An employer shall make a copy of the hearing conservation plan readily available to workers.

## PART 9 SAFEGUARDS, STORAGE, WARNING SIGNS AND SIGNALS

### Interpretation

**118.** In this Part,

"anchor point" or "anchor plate" means a secure connecting point capable of safely withstanding the impact forces applied by a fall protection system; (*point d'ancrage* or *plaque d'ancrage*)

"fall protection system" means

- (a) a control zone that meets the requirements of and is used in accordance with section 121,
- (b) a personal fall arrest system,
- (c) a safety net, or
- (d) a travel restraint system; (*dispositif de protection contre les chutes*)

"similar barrier" means a barrier that the employer can demonstrate provides a level of protection that is not less than equivalent to a guardrail; (*barrière similaire*)

"travel restraint system" means a system that prevents a worker from travelling to the edge of a structure or to a position from which the worker could fall. (*système de limitation du déplacement*)

### Protection Against Falling

**119.** (1) An employer shall ensure that workers use a fall protection system at a work site if

- (a) a worker could fall 3 m or more; or
- (b) there is a risk of injury if a worker falls less than 3 m.

(2) An employer shall ensure that workers at a permanent work site are protected from falling by a guardrail or similar barrier if a worker could fall a vertical distance of between 1.2 m and 3 m.

(3) Despite subsection (2), if the use of a guardrail or similar barrier is not reasonably possible, an employer shall ensure that the worker uses a travel restraint system.

(4) Despite subsection (3), if the use of a travel restraint system by a worker is not reasonably possible, an employer shall ensure that the worker is protected from falling by the use of a safety net, control zone or other equally effective safeguards.

- (5) Subsection (1) does not apply to competent workers who are engaged in
- (a) installing or attaching a fall protection system to the anchor point;
  - (b) removing or disassembling the associated parts of a fall protection system when it is no longer required; or
  - (c) activities within the normal course of business on a permanent loading dock that does not exceed 1.2 m in height.

#### Fall Protection Plan

- 120.** (1) An employer shall develop a written fall protection plan if
- (a) a worker could fall 3 m or more; and
  - (b) workers are not protected by a guardrail or similar barrier.
- (2) The fall protection plan must describe
- (a) the fall hazards at the work site;
  - (b) the fall protection system to be used at the work site;
  - (c) the procedures used to assemble, maintain, inspect, use and disassemble the fall protection system; and
  - (d) the rescue procedures to be used if a worker falls or is left suspended by a personal fall arrest system or safety net, and needs to be rescued.
- (3) If a risk of falling exists at a work site, the employer shall make the fall protection plan readily available to workers before work begins.
- (4) An employer shall ensure that a worker is trained in the fall protection plan and the safe use of the fall protection system before requiring or permitting the worker to work at a work site where a fall protection system is used.

#### Control Zone

- 121.** (1) If a worker could fall from a level surface at a work site, the employer shall ensure that the worker is protected from falling by the use of a control zone that is not less than 2 m wide when measured from the unguarded edge.
- (2) A worker who crosses but who does not otherwise work in a control zone
- (a) is not required to use a fall protection system, other than the control zone itself, to enter or leave the work site; and

- (b) shall follow the most direct route to get to or from the unguarded edge.

(3) If a worker works more than 2 m from an unguarded edge, an employer shall ensure that a control zone is clearly marked with an effective raised warning line or other equally effective method.

- (4) An employer shall ensure that a worker working in a control zone uses
  - (a) a travel restraint system; or
  - (b) another equally effective system as a travel restraint system that prevents the worker from getting to the unguarded edge.

#### Anchor Points and Anchor Plates

**122.** (1) If a worker uses a personal fall arrest system or a travel restraint system, an employer shall ensure that an anchor point or anchor plate meeting the requirements of this section is used as part of that system.

(2) An employer shall ensure that a temporary anchor point used in a travel restraint system

- (a) has an ultimate load capacity of not less than 3.5 kN per worker attached in any direction that a load could be applied;
- (b) is installed and used according to the manufacturer's specifications;
- (c) is permanently marked as being for travel restraint only; and
- (d) is removed from use on the earlier of
  - (i) the date the work project for which it is intended is completed, and
  - (ii) the time specified by the manufacturer.

(3) An employer shall ensure that a permanent anchor point used in a travel restraint system

- (a) has an ultimate load capacity of not less than 22.5 kN per worker attached in any direction that a load could be applied;
- (b) is installed and used according to the manufacturer's specifications; and
- (c) is permanently marked as being for travel restraint only.

(4) If a personal fall arrest system is installed on or after one year after the date this section comes into force, an employer or supplier shall ensure that anchor points to which the personal fall arrest system is attached have an ultimate load capacity of not less than 8.75 kN per worker attached in any direction that a load could be applied.

(5) An employer or supplier shall ensure that the following types of equipment that are components of fall protection systems, and their installation, conform to the manufacturer's specifications or are certified by a professional engineer:

- (a) permanent anchor points;

- (b) anchors with multiple attachment points;
- (c) permanent horizontal lifeline system;
- (d) support structures for safety nets.

#### Elevated Conveyors

**123.** If an elevated conveyor crosses over an area where a worker could pass or work, an employer shall ensure that suitable precautions are taken to prevent materials on the conveyor from falling on the worker.

#### Wire Mesh

- 124.** If wire mesh is required by these regulations, the wire mesh must
- (a) be made from wire that is not less than 1.6 mm in diameter; and
  - (b) have mesh dimensions not exceeding 40 mm by 40 mm.

#### Protection Against Falling Objects

**125.** (1) Subject to section 126, if a worker is required or permitted to work in an area where the worker could be in danger from a falling object, an employer shall ensure that the worker is adequately protected by the installation of an overhead barrier.

(2) An employer shall ensure that an area where a worker could be struck by a falling object is clearly marked by barriers, notices, warning lights or other warning devices.

#### Protection from Objects Falling from Scaffolds

**126.** (1) If a suspended scaffold, suspended powered scaffold or load-carrying unit is suspended from or attached to a structure, an employer shall ensure that wire mesh, or other material equally effective in preventing objects from falling from the working surface, is installed from the working surface to a height of not less than 900 mm on all sides other than the side adjacent to the structure.

(2) An employer shall ensure that wire mesh is installed from the working surface of a platform to a height of 2 m on all sides of each of the following:

- (a) a tower crane as defined in section 205;
- (b) a building shaft hoist;
- (c) a hoist cage in an excavated shaft.

(3) If it is necessary to hoist or lower materials of such a nature that the sides of a cantilever hoist platform or skip cannot be equipped as required under subsection (1), an employer shall provide an equally effective means for the protection of workers against falling materials.

(4) If it is necessary for a worker to pass through a safeguard required by this section, an employer shall

- (a) install a gate that is effective in preventing objects falling from the working surface; and
- (b) ensure that the gate is kept closed other than when in use.

#### Handrails

**127.** (1) An employer shall ensure that a stairway with five or more treads

- (a) is equipped with a handrail that
  - (i) extends the entire length of the stairway,
  - (ii) is adequately secured to the structure,
  - (iii) is installed on the stairway at a height of
    - (A) between 760 mm and 860 mm above the stair tread, measured vertically from the nose of the tread, in the case of a stairway installed before the coming into force of this section, and
    - (B) between 800 mm and 920 mm above the front edge of the treads, in the case of a stairway installed on or after the coming into force of this section, and
  - (iv) is strong enough to support a worker who falls on the stairway; and
- (b) on an open side, is equipped with both a handrail and an intermediate rail or equivalent safeguard.

(2) If a handrail is required for a temporary stairway under subsection (1), an employer shall ensure that the handrail

- (a) is constructed of construction grade lumber not less than 38 mm by 89 mm or material of equivalent strength; and
- (b) is supported by posts that are not less than 3 m apart.

#### Guardrails

**128.** (1) Subject to subsections (2) to (4), if the installation of a guardrail is required by these regulations, an employer shall ensure that the guardrail

- (a) has a horizontal top member between 920 mm and 1070 mm above the working surface;
- (b) has a horizontal intermediate member that is spaced midway between the horizontal top member and the working surface;
- (c) is supported for the entire length of the guardrail by vertical members that are, if reasonably possible, not less than 2.4 m apart;
- (d) is capable of supporting a worker who could fall against the guardrail; and
- (e) is constructed of construction grade lumber not less than 38 mm by 89 mm, or material of equivalent strength.



(2) A horizontal intermediate member is not required in the case of a temporary guardrail that is manufactured with a substantial barrier that completely fills the area enclosed by the horizontal top member, and horizontal bottom member and vertical members.

(3) A wire rope guardrail may be used at the external perimeter of a building under construction.

(4) If a wire rope guardrail is used under subsection (3), an employer shall ensure that

- (a) the guardrail consists of a horizontal top member and a horizontal intermediate member made of wire rope not less than 9.5 mm in diameter, with vertical separators not less than 50 mm wide that are spaced at intervals that are not less than 2.4 m apart;
- (b) the horizontal top member and horizontal intermediate member are positioned above the working surface in accordance with paragraphs (1)(a) and (b);
- (c) the guardrail is kept taut by means of a turnbuckle or other appropriate device; and
- (d) the guardrail is arranged so that a worker coming into contact with the ropes cannot fall through the ropes.

(5) An employer shall ensure that a worker does not hang equipment on a guardrail.

#### Toeboards

**129.** (1) In this section, "toeboard" means a low vertical guard that is

- (a) located at the outer edge of a platform, scaffold, floor, stair, walkway, pit or other height; and
- (b) designed to prevent materials or equipment from falling over the edge. (*plinthe*)

(2) An employer shall provide toeboards at the edge of

- (a) a permanent floor, platform, mezzanine, walkway, ramp, runway or other surface from which it is possible for materials to fall more than 1.2 m;
- (b) a temporary scaffold or work platform from which it is possible for materials to fall more than 3 m; and
- (c) a pit for a flywheel or pulley.

(3) Subsection (2) does not apply to a loading or unloading area if the employer has taken other precautions to ensure that materials will not fall from the floor or other horizontal surface.

(4) If a toeboard is required by these regulations, an employer shall ensure that the toeboard extends from the floor or other horizontal surface to a height of not less than

- (a) 125 mm from the floor or surface; or
- (b) 100 mm from the floor or surface, in the case of a toeboard that was installed before the day these regulations come into force.

### Openings

**130.** (1) An employer shall ensure that an opening or hole in a floor, roof or other work surface into which a worker could step or fall is

- (a) covered with a securely installed covering that is capable of supporting a distributed load of 360 kg/m<sup>2</sup> and is provided with a warning sign or permanent marking clearly indicating the nature of the hazard; or
- (b) provided with a guardrail and a toeboard as defined in subsection 129(1).

(2) If the covering or guardrail and toeboard referred to in subsection (1) or a part of the guardrail or toeboard is removed, an employer shall immediately provide an effective alternative means of protection.

### Building Shafts

**131.** (1) An employer shall ensure that a work platform that is an integral part of a slip form used in a building shaft is designed by a professional engineer to withstand the maximum foreseeable load and is constructed, erected and used in accordance with that design.

(2) If a platform referred to in subsection (1) is moved, the employer shall

- (a) ensure that it is examined by a competent individual; and
- (b) keep a record of the examination.

(3) An employer shall not require or permit a worker to work on a platform referred to in subsection (1) that has been moved before the platform has been examined in accordance with subsection (2), unless the worker is using a personal fall arrest system, a full-body harness and a lifeline or lanyard that meet the requirements of Part 7.

(4) If no work platform is installed at the level of a doorway or opening in a building shaft, an employer shall ensure that the doorway or opening is covered by a solid barrier extending from the bottom of the doorway or opening to a height of not less than 2 m and is capable of preventing a worker, equipment or loose material from falling down the shaft.

(5) An employer shall ensure that not less than one warning sign indicating the presence of an open building shaft is placed on a barrier erected under subsection (4).

### Safety Nets

- 132.** If a safety net is required by these regulations, an employer shall ensure that it
- (a) is manufactured from rope not less than
    - (i) 8 mm in diameter, and
    - (ii) equivalent in breaking strength to number one grade pure manila rope 9 mm in diameter;
  - (b) has a mesh size not exceeding 150 mm by 150 mm;
  - (c) has safety hooks or shackles of drop-forged steel that is 22.2 kN proof tested;
  - (d) has joints between the net panels that are equal in strength to the net;
  - (e) extends not less than 2.4 m beyond, and is not more than 6 m below, the work area; and
  - (f) is installed and maintained so that, at the maximum deflection of the net when arresting the fall of a worker, the net does not make contact with another surface.

### Storage Tanks

**133.** (1) If a worker is regularly required or permitted to walk or work on top of a storage tank, an employer shall ensure that the storage tank is fitted with a permanent walkway with guardrails.

(2) If a worker is required or permitted to walk or work on top of a storage tank, an employer shall ensure that any opening in the tank into which a worker could fall is guarded by a grid or other suitable means to prevent the worker from falling into the tank.

### Mounting of Tires

**134.** (1) If a worker is required or permitted to mount a tire and the maximum inflation pressure is not clearly indicated on the tire wall, an employer shall provide the worker with written instructions specifying the maximum inflation pressures for the various sizes and types of tires normally encountered and ensure that the worker follows the instructions.

(2) If a tire is to be mounted, an employer shall ensure that the tire and the rim assembly on which the tire is to be mounted are designed and constructed to be compatible with each other.

(3) If a worker is required or permitted to mount the tire on a split rim assembly or a locking ring assembly, an employer shall

- (a) provide the worker with
  - (i) a clamp-on type air hose, an in-line pressure gauge and a positive pressure control, and

- (ii) a suitable cage or other restraining device to contain flying parts in the event of a split rim assembly or locking ring assembly failure or tire rupture; and
  - (b) ensure that the worker inflates the tire from a safe position out of the immediate danger area.
- (4) A worker mounting a tire
- (a) shall, before commencing, place the tire on a split rim assembly or locking ring assembly in a cage or restraining device;
  - (b) shall not inflate the tire in excess of the maximum pressure indicated on the tire wall or listed for the size and type of tire in the written instructions provided under subsection (1);
  - (c) shall use a clamp-on type air hose, an in-line pressure gauge and positive pressure control; and
  - (d) shall inflate the tire from a safe position out of the immediate danger area.

#### Storage of Materials

- 135.** An employer shall ensure that
- (a) material or equipment is not placed, stacked or stored so as to constitute a hazard to workers; and
  - (b) stacked material or containers are stabilized, if necessary, by interlocking, strapping or other effective means of restraint.

#### Pallets and Storage Racks

- 136.** An employer or supplier shall ensure that
- (a) pallets are maintained to permit safe lifting of the pallets and their loads by a forklift or other device; and
  - (b) racks for the storage of material or equipment are
    - (i) designed, constructed and maintained to support loads placed on the racks, and
    - (ii) erected on a firm foundation.

#### Pressurized Hoses

- 137.** If an inadvertent disconnection of a hose, pipe or connection that is under pressure could be harmful to a worker, an employer shall ensure that an effective restraining device is used on the hose, pipe or connection.

#### Designated Signallers

- 138.** (1) If the giving of signals by a designated signaller is required by these regulations, an employer shall
- (a) designate a worker to be the designated signaller;

- (b) ensure that the designated signaller is trained to carry out his or her duties to ensure the signaller's safety and the safety of other workers; and
- (c) keep a record of the training provided and give a copy of the record to the designated signaller.

(2) An employer shall

- (a) provide each designated signaller with, and require the signaller to use, a high visibility vest, armllets or other high visibility clothing; and
- (b) provide each designated signaller with a suitable light to signal with during hours of darkness as defined in section 161 and in conditions of poor visibility.

(3) An employer shall

- (a) install suitably placed signs to warn traffic of the presence of a designated signaller before the signaller begins work; and
- (b) if reasonably possible, install suitable overhead lights to illuminate effectively a designated signaller.

(4) A designated signaller shall ensure that it is safe to proceed with a movement before signalling for the movement to proceed.

(5) If the giving of signals by a designated signaller is required by these regulations, an employer shall ensure that

- (a) only a worker who is the designated signaller gives signals to an operator of any equipment other than in an emergency; and
- (b) only one designated signaller gives signals to an operator at a time.

(6) If hand signals cannot be transmitted properly between a designated signaller and an operator, an employer shall ensure that additional designated signallers are available to make effective transmissions of signals, or some other means of communication is provided.

(7) If two or more designated signallers are used, an employer shall ensure that the designated signallers are able to communicate effectively with each other.

#### Risk from Vehicular Traffic

**139.** (1) If a worker is at risk from vehicular traffic on a highway or at any other work site, an employer shall ensure that the worker is provided with and required to use a high visibility vest, armllets or other high visibility clothing.

(2) If a worker is at risk from vehicular traffic on a highway or at any other work site, an employer shall develop and implement a written traffic control plan to protect the worker from traffic hazards, using one or more of the following methods of traffic control:

- (a) warning signs;
- (b) barriers;
- (c) lane control devices;
- (d) flashing lights;
- (e) flares;
- (f) conspicuously identified pilot vehicles;
- (g) automatic or remote-controlled traffic control systems;
- (h) designated signallers directing traffic.

(3) An employer shall ensure that

- (a) workers are trained in the traffic control plan developed under subsection (2); and
- (b) the traffic control plan developed under subsection (2) is made readily available to workers at the work site.

(4) An employer shall not use designated signallers to control traffic on a highway unless those methods referred to in paragraphs (2)(a) to (g) are inadequate or unsuitable.

(5) If designated signallers are used to control traffic on a highway, an employer shall provide

- (a) not less than one designated signaller if
  - (i) traffic approaches from one direction only, or
  - (ii) traffic approaches from both directions and the designated signaller and the operator of an approaching vehicle would be clearly visible to one another; and
- (b) not less than two designated signallers if traffic approaches from both directions and the designated signaller and the operator of an approaching vehicle would not be clearly visible to one another.

(6) A traffic control plan developed under subsection (2) must set out, if applicable,

- (a) the maximum allowable speed of any vehicle or class of vehicles, including powered mobile equipment, in use at the work site;
- (b) the maximum operating grades;
- (c) the location and type of control signs;
- (d) the route to be taken by vehicles or powered mobile equipment;
- (e) the priority to be established for classes of vehicle;
- (f) the location and type of barriers or restricted areas; and
- (g) the duties of workers and the employer.

(7) A worker who operates a vehicle or unit of powered mobile equipment at a work site and who does not have a clear view of the path to be travelled shall not proceed until another worker, who has a clear view of the path to be travelled by the vehicle or unit of powered mobile equipment, signals to the worker that it is safe to proceed.

## PART 10 MACHINE SAFETY

### Interpretation

**140.** In this Part, "power tool" means a hand-held machine that is powered by energy other than the energy of a worker. (*outil électrique*)

### Manufacturer's Specifications

**141.** An employer or supplier shall ensure that machines or other equipment under this Part are constructed, repaired, inspected, tested, maintained and operated in accordance with the manufacturer's specifications or an approved standard.

### Operation by Worker

**142.** (1) An employer shall, in respect of machines at a work site, ensure that

- (a) the machines are operated only by a competent worker; and
- (b) workers are informed of any hazard associated with, and trained in the safe use of, the machines.

(2) Before starting a machine, an operator shall ensure that the operator and any other worker will not be endangered by starting the machine.

(3) If a worker or a worker's clothing could make contact with a moving part of a machine, an employer shall ensure that the worker

- (a) wears close-fitting clothing;
- (b) confines or cuts short any head and facial hair; and
- (c) does not wear dangling neckwear or jewellery, rings or other similar items.

### Operating Controls

**143.** (1) If reasonably possible, an employer or supplier shall ensure that operating controls on a machine

- (a) are located within easy reach of the operator; and
- (b) cannot be activated by accidental contact.

(2) If reasonably possible, an employer or supplier shall ensure that stopping devices on the machine are

- (a) located in the direct view and within easy reach of the operator; and
- (b) readily identifiable.

(3) If a worker is required or permitted to feed material into a material forming press, punch, shear or similar machine, an employer or supplier shall,

- (a) if reasonably possible, install a positive means to prevent the activation of the machine if any part of the worker's body could be injured by moving parts of the machine when activated; or
- (b) if it is not reasonably possible to comply with paragraph (a), install safeguards to prevent the worker from contacting a moving part of the machine.

#### Unattended and Suspended Machines

**144.** (1) An employer shall not require or permit a worker to leave unattended or in a suspended position any machine or any part of a machine unless the machine or part has been

- (a) immobilized and secured against accidental movement; or
- (b) enclosed by a safeguard to prevent access by any other worker to the machine or part.

(2) A worker shall not leave unattended or in a suspended position any machine or any part of a machine unless the machine or part has been

- (a) immobilized and secured against accidental movement; or
- (b) enclosed by a safeguard to prevent access by any other worker to the machine or part.

#### Safeguards

**145.** (1) An employer shall provide an effective safeguard if a worker could come into contact with

- (a) a dangerous moving part of a machine;
- (b) a pinch point, cutting edge or point of a machine at which material is cut, shaped, bored or formed;
- (c) an open flame;
- (d) a steam pipe or other surface with a temperature that exceeds or could exceed 80°C; or
- (e) a cooled surface that is or could be less than -80°C.

(2) Subject to subsection (4), an employer shall ensure that a safeguard required by subsection (1) remains in place at all times.



(3) Subsection (1) does not apply to

- (a) a machine that is equipped with an effective safety device that stops the machine automatically before any part of a worker's body comes into contact with a hazard referred to in paragraph (1)(a) or (b); or
- (b) a belt, rope or chain that is operated from a cathead or capstan.

(4) An employer shall ensure that a safeguard that is removed from a machine or made ineffective to permit maintenance, testing, repair or adjustment of a machine, is replaced or made effective before a worker is required or permitted to use the machine.

(5) If there is a risk of machine failure and of injury to a worker from the failure, an employer shall install safeguards strong enough to withstand the impact of debris from the machine failure and to contain any debris resulting from the machine failure.

### Warning Systems

- 146.** (1) If the conditions described in subsection (2) apply, an employer shall install
- (a) an audible alarm system that provides a warning of sufficient volume and for a sufficient period before start-up of the machine to give workers timely notice of the imminent start up; or
  - (b) a distinctive and conspicuous visual warning system to alert workers of the imminent start up of the machine.

(2) Subsection (1) applies if

- (a) a worker could be endangered by moving machine parts when a machine is started; and
- (b) the operator of the machine does not have a clear view from the operating position of all parts of the machine and of the surrounding area where a worker could be endangered by moving machine parts.

(3) An employer shall place suitable and clearly visible warning signs at each point of access to a machine that starts automatically.

### Locking Out

**147.** (1) Subject to section 148, an employer shall, before a worker undertakes the maintenance, testing, repair or adjustment of a machine other than a power tool, ensure that the machine is locked out and remains locked out during that activity unless doing so puts a worker at risk.

(2) An employer shall, before a worker undertakes the maintenance, testing, repair or adjustment of a power tool, ensure that the energy source has been isolated from the power tool, any residual energy in the power tool has been dissipated and the energy source remains isolated during that activity.

- (3) An employer shall
- (a) provide a written lockout process to each worker who is required or permitted to work on a machine to which subsection (1) applies; and
  - (b) if the lockout process uses a lock and key, issue to that worker a lock that is operable only by that worker's key.
- (4) If the lockout process does not use a lock and key, an employer shall designate an individual to coordinate and control the lock out process.
- (5) If the lockout process uses a lock and key, an employer shall designate an individual to keep a duplicate key and ensure that
- (a) the duplicate key is accessible only to the designated individual; and
  - (b) a log book is kept to record the use of the duplicate key and the reasons for that use.
- (6) If it is not reasonably possible to use a worker's key to remove a lock, an employer may permit the individual designated under subsection (5) to remove the lock using the duplicate key if the designated individual
- (a) has determined the reason that the worker's key is not available;
  - (b) has determined that it is safe to remove the lock and activate the machine; and
  - (c) has informed the Committee members or the representative of the proposed use of the duplicate key before it is used.
- (7) An employer shall ensure that the designated individual who is permitted to use a duplicate key under subsection (6)
- (a) records in the log book the removal of the lock including the reason for the use of the duplicate key and the date of its use; and
  - (b) signs the log book each time that the duplicate key is used.
- (8) If a central automated system controls more than one machine, an employer shall ensure that the machine to be maintained, tested, repaired or adjusted is isolated from the central system before the lockout process required by subsection (3) is implemented.
- (9) After a lockout process has been initiated, the worker who installed the device or initiated the process shall check the machine to ensure that the machine is inoperative.
- (10) An individual shall not deactivate a lockout process that does not use a lock and key unless it is the individual designated under subsection (4).

(11) An individual shall not remove a device that is part of a lockout process unless the individual is

- (a) the worker who installed the lockout device; or
- (b) an individual designated under subsection (5).

#### Maintaining Machines in Motion

**148.** (1) This section applies if any of the following requires cleaning, lubrication or adjustment while in motion or under power:

- (a) a machine or other piece of equipment;
- (b) a part of the machine or other piece of equipment;
- (c) any material on a machine or on the piece of equipment.

(2) An employer shall, in respect of a circumstance referred to in subsection (1),

- (a) develop and implement written work practices and procedures to ensure that cleaning, lubrication or adjustment is carried out in a safe manner;
- (b) ensure that workers who are required or permitted to perform cleaning, lubrication and adjustment are trained in the written work practices and procedures developed and implemented under paragraph (a); and
- (c) ensure that the written work practices and procedures developed and implemented under paragraph (a) are readily available to workers.

#### Belts

**149.** (1) An employer shall ensure that a permanent belt shifter is

- (a) provided for all loose pulleys on a machine; and
- (b) constructed so that the belt cannot creep back on to the tight pulley.

(2) An employer shall ensure that a worker does not shift a belt on a machine by hand while the belt is in motion.

#### Air-Actuated Fastening Tools

**150.** An employer shall ensure that a worker does not mechanically hold the trigger of an air-actuated fastening tool in the operating position unless the tool is specifically designed to be used in that manner.

### Explosive-Actuated Fastening Tools

**151.** (1) In this section, "explosive-actuated fastening tool" means a machine that propels or discharges, by means of an explosive force, a fastening device to attach the fastening device on, affix the fastening device to or cause the fastening device to penetrate another object or material. (*outil de fixation à cartouches*)

(2) An employer shall ensure that a worker who operates an explosive-actuated fastening tool is trained in and uses safe work procedures for any explosive-actuated fastening tool that the worker could operate, including

- (a) the selection of the appropriate tool, accessories, fastener and power load for each application;
- (b) the limitations of each type of tool, fastener and power load; and
- (c) the maintenance, inspection and use of the tool.

(3) An employer shall ensure that a worker who operates an explosive-actuated fastening tool

- (a) does not leave the tool or explosive charges unattended;
- (b) stores the tool and explosive charges in a locked container when not in use; and
- (c) uses an industrial eye or face protector that meets the requirements of Part 7.

### Airless Spray Units

**152.** If a worker is required or permitted to use an airless spray unit that is capable of operating at a pressure exceeding 7 MPa, an employer shall ensure that

- (a) the gun, the reservoir and the pump are bonded to ground with a single continuous approved bonding conductor; and
- (b) the gun is fitted with suitable tip and trigger guards.

### Grinding Machines

**153.** (1) An employer shall ensure that

- (a) an abrasive wheel is not operated
  - (i) unless it is equipped with blotters installed according to the manufacturer's specifications and a safeguard, or
  - (ii) at a speed in excess of the manufacturer's specifications;
- (b) the maximum speed of each grinder shaft in revolutions per minute is permanently marked on the grinder; and
- (c) the mounting flanges for the abrasive wheel have an equal and correct diameter for the wheel.

(2) If a tool rest is installed on a fixed grinder, an employer shall ensure that the tool rest is

- (a) installed in a manner that is compatible with the work process;
- (b) securely attached to the grinder; and
- (c) set not more than 3 mm from the face of the wheel or below the horizontal centre line of the wheel.

(3) An employer shall not require or permit a worker to use the sides of an abrasive wheel for grinding unless the abrasive wheel is designed for that use.

(4) An employer shall ensure that a worker who operates a grinder

- (a) is provided with and uses the following personal protective equipment that meets the requirements of Part 7:
  - (i) an industrial eye or face protector,
  - (ii) hand or arm protection; and
- (b) is instructed in the potential hazards and safe use of the grinder.

#### Chainsaws

- 154.** (1) An employer or supplier shall ensure that a chainsaw is
- (a) equipped with an effective chain brake or a chain and bar that is designed to minimize the possibility of a kickback; and
  - (b) designed and constructed so that the chain stops when the engine is at idle.

(2) If a chainsaw is to be used by a worker operating from an elevated cage or basket and the width of the case or basket is less than twice the length of the chainsaw, an employer shall ensure that a secondary platform is installed outside the cage or basket and is used to store the chainsaw and to start the chainsaw engine.

(3) An employer shall ensure that a worker who operates a chainsaw

- (a) stops the chain while the worker is walking with the chainsaw;
- (b) does not operate the chainsaw at a height that is higher than the worker's shoulder level;
- (c) holds the chainsaw firmly in both hands; and
- (d) maintains the chainsaw, cutting chain and safeguards.

(4) A worker who operates a chainsaw shall

- (a) stop the chain while he or she is walking with the chainsaw;
- (b) not operate the chainsaw at a height that is higher than the worker's shoulder level;
- (c) hold the chainsaw firmly in both hands;
- (d) maintain the chainsaw, cutting chain and safeguards; and
- (e) maintain the chainsaw so that the chain stops when the engine is at idle.

### Circular Saws

**155.** (1) An employer shall ensure that a circular saw blade that develops a crack on its outside edge is discarded unless

- (a) the blade is effectively repaired by a competent individual; and
- (b) the original blade tension is restored.

(2) An employer shall ensure that a circular saw blade that develops a crack from the eye or the collar is discarded.

(3) An employer or supplier who provides a portable hand operated saw shall ensure that the saw is equipped with a safeguard that automatically covers the exposed part of the blade during use, and the entire blade when not in use.

### Power-fed Circular Ripsaws

**156.** (1) An employer or supplier shall ensure that a power-fed circular rip saw with horizontal, power-driven feed rolls used at a work site, is equipped with a sectional non-kickback device located in front of the blade and across the full width of the rolls.

(2) An employer or supplier shall ensure that a power-fed circular rip saw used at a work site

- (a) is equipped with a splitter that extends to the height of the top of the saw blade; and
- (b) has a saw blade that is equipped with a safeguard or is located where a worker cannot reach it.

### Bandsaws

**157.** (1) An employer shall ensure that a bandsaw blade that develops a crack, with a depth more than 5% of the width of the saw blade, is discarded unless

- (a) the width of the blade is reduced by a competent individual so as to eliminate the crack; or
- (b) the cracked section is repaired by a competent individual.

(2) An employer or supplier who provides a bandsaw to a worker shall ensure that the saw has an automatic tension control device.

### Cut-Off Saws

**158.** An employer or supplier who provides a hand operated, sliding or swing cut-off saw to a worker shall ensure that

- (a) the saw is equipped with a device that will return the saw automatically to the back of the table when the saw is released at any point in the saw's travel; and

- (b) a limit device is installed to prevent the saw from travelling beyond the outside edge of the cutting table.

#### Pushblocks and Pushsticks

**159.** (1) In this section,

"pushblock" means a short block of wood with a shoulder at the rear, and that is provided with a suitable handle that will engage with the shoulder; (*bloc-poussoir*)

"pushstick" means a narrow strip of wood or other suitable material with a notch cut into one end. (*poussoir*)

(2) An employer shall ensure that a worker uses a pushblock or pushstick to feed wood or other material into any machine that is used for cutting or shaping the wood or other material.

#### Hand-fed Planers and Joiners

**160.** (1) If a hand-fed planer or joiner is operated by a worker, an employer shall ensure that the hand-fed planer or joiner is operated at a height that is suitable for the worker.

(2) An employer or supplier who provides a hand-fed planer or joiner with a horizontal cutting head to a worker shall ensure that the planer or joiner has an automatic safeguard that will cover all sections of the head on the working side of the safeguard when material is not being cut.

### PART 11 POWERED MOBILE EQUIPMENT

#### Interpretation

**161.** In this Part, "hours of darkness" means any time when, because of insufficient light or unfavourable atmospheric conditions, individuals or vehicles are not clearly discernable at a distance of 150 m or more. (*heures d'obscurité*)

#### Operation by Competent Workers

**162.** An employer shall ensure that only competent workers operate powered mobile equipment or are required or permitted to operate that equipment.

### Visual Inspection

**163.** (1) An employer shall ensure that, before a worker starts powered mobile equipment, the worker makes a complete visual inspection of the equipment and the surrounding area to ensure a worker is not endangered by the start up of the equipment.

(2) A worker shall not start powered mobile equipment until the inspection required under subsection (1) is completed.

### Inspection and Maintenance

**164.** (1) An employer or supplier shall ensure that powered mobile equipment at a work site is inspected

- (a) by a competent worker for defects and unsafe conditions; and
- (b) as often as is necessary to ensure that the equipment is capable of safe operation.

(2) If a defect or unsafe condition is identified in powered mobile equipment, an employer or supplier shall

- (a) take immediate steps to protect the health and safety of each worker who is at risk until the defect is repaired or the condition is corrected; and
- (b) repair the defect or correct the unsafe condition as soon as is reasonably possible.

(3) An employer or supplier shall, at a work site,

- (a) keep a record of inspections and maintenance carried out under this section; and
- (b) make the records readily available to each operator of the powered mobile equipment.

### Requirements for Powered Mobile Equipment

**165.** (1) An employer or supplier shall ensure that each unit of powered mobile equipment is equipped with

- (a) a device within easy reach of an operator that will permit the operator to stop as quickly as possible any ancillary equipment driven from the powered mobile equipment, including any power take-off, crane and auger and any digging, lifting and cutting equipment;
- (b) an audible or visual warning device that is adequate to warn other workers of the operation of the powered mobile equipment;



- (c) seats that are designed and installed to ensure the safety of each worker in or on the powered mobile equipment unless the equipment is designed to be operated from a standing position; and
- (d) an effective braking system and an effective parking device.

(2) If a unit of powered mobile equipment is operated during hours of darkness in an area that is not sufficiently illuminated, an employer or supplier shall ensure that the unit is equipped with suitable headlights and backup lights that clearly illuminate the path of travel.

(3) If a unit of powered mobile equipment has a windshield, an employer or supplier shall ensure that the windshield is equipped with suitable windshield washers and wipers.

(4) If a unit of powered mobile equipment is fitted with rollover protective structures, an employer or supplier shall ensure that the unit is equipped with

- (a) seat belts for the operator and any other worker in or on the unit; or
- (b) shoulder belts, bars, gates, screens or other restraining devices designed to prevent the operator and any other worker from being thrown outside the rollover protective structures if the work process renders the wearing of a seat belt impracticable.

(5) If there is a danger to the operator of a unit of powered mobile equipment or to any other worker in or on a unit of powered mobile equipment from a falling object or projectile, an employer or supplier shall ensure that the unit is equipped with a suitable and adequate cab, screen or guard.

#### Maintenance of Powered Mobile Equipment

**166.** An employer or supplier shall ensure that each unit of powered mobile equipment is constructed, repaired, inspected, tested, maintained and operated in accordance with the manufacturer's specifications or an approved standard.

#### Use of Seat Belt or Restraint by Operator

**167.** An employer shall ensure that an operator of a unit of powered mobile equipment uses a seat belt or other restraining device under subsection 165(4).

#### Protection Against Shifting of Load

**168.** An employer shall install a bulkhead or other effective restraining device to protect the operator and any other worker in or on powered mobile equipment that is used to transport equipment or materials, if that equipment could shift under emergency stopping conditions and endanger the operator or other worker.

### Warning of Reverse Motion

**169.** If a vehicle could be used in such a way that a worker could be endangered by an unexpected reverse movement, the employer or supplier shall ensure that the vehicle is equipped with a suitable warning device that operates automatically when the vehicle or equipment starts to move in reverse.

### Rollover Protective Structures

**170.** (1) An employer or supplier shall ensure that a unit of powered mobile equipment that is equipped with an engine rated at 15 kW or more and is in any of the following categories, is not used, unless it is fitted with a rollover protective structure that meets the requirements of subsection (2):

- (a) motor grader;
- (b) crawler tractor, other than one that operates with side booms;
- (c) wheeled or tracked dozer and loader, other than one that operates with side booms;
- (d) self-propelled wheeled scraper;
- (e) self-propelled roller;
- (f) compactor;
- (g) rubber-tired tractor;
- (h) skidder.

(2) An employer or supplier shall ensure that a rollover protective structure required by subsection (1)

- (a) is designed, manufactured and installed to meet the requirements of an approved standard; and
- (b) has the following information permanently and legibly marked on the structure:
  - (i) the manufacturer's name and address,
  - (ii) the model and serial number,
  - (iii) the make and model or series number of the machines that the structure is designed to fit,
  - (iv) an identification of the standard to which the structure was designed, manufactured and installed.

(3) If a rollover protective structure required by subsection (1) is not available, an employer or supplier shall ensure that a unit of powered mobile equipment is equipped with a rollover protective structure that is

- (a) designed by a professional engineer;

- (b) designed and fabricated so that the structure and supporting attachments will support not less than twice the weight of the equipment to which the structure is to be fitted, based on the ultimate strength of the metal and integrated loading of structural members, with the resultant load applied at the point of impact; and
- (c) installed to have a vertical clearance of 1.2 m between the decks and the structures at the point of operator entrance or exit.

(4) A rollover protective structure is deemed to meet the requirements of this section if the structure

- (a) was installed on the powered mobile equipment on or before the day that these regulations come into force; and
- (b) was designed and manufactured in accordance with the *General Safety Regulations*, R.R.N.W.T. 1990, c.S-1, as they existed immediately before these regulations come into force.

(5) An employer or supplier shall ensure that modifications or repairs to existing rollover protective structures are certified by a professional engineer.

#### Transparent Materials Used in Cabs

**171.** (1) An employer or supplier shall ensure that transparent material used as part of the enclosure for a cab, canopy or rollover protective structure on powered mobile equipment is made of safety glass or another material that gives not less than equivalent protection against shattering.

(2) An employer or supplier shall ensure that any defective glass or other transparent material in a cab, canopy or rollover protective structure that creates or could create a hazard is removed and replaced.

#### Fuel Tanks in Enclosed Cabs

**172.** If a unit of powered mobile equipment is equipped with an enclosed cab, an employer or supplier shall ensure that a fuel tank located in the enclosed cab has a filler spout and vents that extend to the outside of the cab.

#### Dangerous Movements

**173.** (1) If a worker could be endangered by the swinging movement of a load or a part of a unit of powered mobile equipment, an employer shall not require or permit the worker to remain within range of the swinging load or part.

(2) If a worker could be required or permitted to perform maintenance, testing, repairs, adjustments or other work on or under an elevated part of a unit of powered mobile equipment, an employer shall ensure that the elevated part is securely blocked to prevent accidental movement.

(3) An operator of a unit of powered mobile equipment shall not move or cause to be moved any load or part of the equipment if a worker could be endangered by that movement.

### Transporting Workers

**174.** (1) An employer shall ensure that a worker is not transported on a vehicle unless the worker is seated and secured by a seat belt or other restraining device that is designed to prevent the worker from being thrown from the vehicle while the vehicle is in motion.

(2) An employer shall ensure that a worker is not transported on the top of a load that is being moved by a vehicle.

(3) An employer shall ensure that a worker does not place equipment or material in a compartment of a vehicle in which the operator or another worker is being transported unless the equipment or material is positioned or secured so as to prevent injury to the operator or the other worker.

- (4) If an open vehicle is used to transport a worker, an employer shall ensure that
- (a) the worker is restrained from falling from the vehicle; and
  - (b) the worker's body does not protrude beyond the side of the vehicle.

### Ladders Attached to Extending Boom

- 175.** (1) An employer shall ensure that
- (a) subject to subsection (2), a worker is not on a ladder that is attached as a permanent part of an extending boom on powered mobile equipment during any movement of the equipment, including extension or retraction of the boom;
  - (b) if outriggers are incorporated into powered mobile equipment, a worker does not climb a ladder attached to an extending boom unless the outriggers are deployed; and
  - (c) a worker does not operate powered mobile equipment equipped with an extending boom unless the powered mobile equipment is stable under all operating conditions.

(2) Paragraph (1)(a) does not apply to firefighting equipment.

## Forklifts

- 176.** (1) An employer or supplier shall ensure that a forklift is
- (a) provided with a durable and clearly legible load rating chart that is readily available to the operator; and
  - (b) equipped with a seat belt for the operator if the forklift is equipped with a seat.
- (2) An employer shall ensure that the operator of a forklift uses the seat belt required by paragraph (1)(b).

**PART 12**  
**SCAFFOLDS, AERIAL DEVICES, ELEVATING WORK PLATFORMS AND**  
**TEMPORARY SUPPORTING STRUCTURES**

## Interpretation

**177.** In this Part,

"aerial device" means a vehicle-mounted telescoping or articulating unit that is used to position a worker at an elevated work site, and includes a work basket or bucket, an aerial ladder, an extendable and articulating boom platform, a vertical tower and any combination of those devices; (*dispositif aérien*)

"base plate" means a device that is attached to the base of a scaffold upright and that is used to distribute the vertical load over a larger area of the sill; (*socle*)

"bearer" means a horizontal scaffold member on which the platform rests and that could be supported by ledgers, and includes transoms and joists; (*traverse*)

"brace" means a scaffold member fastened diagonally to the uprights across the vertical faces of the scaffold to provide stability against lateral movement of the scaffold; (*contrevent*)

"bracket scaffold" means a platform that is supported by two or more triangular brackets projecting out from a structure to which the brackets are securely fastened; (*échafaudage à chaise*)

"double-pole scaffold" means a platform that is supported by bearers attached to a double row of braced uprights; (*échafaudage à poteau double*)

"elevating work platform" means a work platform that can be self-elevated to overhead work sites, and includes an elevating rolling work platform, a self-propelled elevating work platform and a boom-type elevating work platform; (*plate-forme de travail élévatrice*)

"flyform deck panel" means a temporary supporting structure that

- (a) is used as a modular false work,
- (b) is intended to be moved, and
- (c) is capable of being moved from floor to floor and re-used during a construction project; (*panneau-plancher de coffrage mobile*)

"half-horse scaffold" means a platform that is supported by two or more braced, splayed supports resting in or on the structure; (*échafaudage à tréteaux*)

"heavy-duty scaffold" means a scaffold that is intended to support workers, equipment and stored or stacked materials; (*échafaudage robuste*)

"ladder jack scaffold" means a platform that is supported by brackets attached to ladders; (*échafaudage sur échelles*)

"ledger" means a horizontal scaffold member extending from upright to upright that could support the bearers, and includes runners, stringers and ribbons; (*longeron*)

"light-duty scaffold" means a scaffold that is intended to support workers and materials for current use only, with no storage of other materials other than the workers' tools; (*échafaudage léger*)

"maximum load" means the maximum actual load that a scaffold is designed to support or resist in use, and includes the working load, the actual weight of all the components of the scaffold, wind, environmental conditions and all other loads that could reasonably be anticipated; (*charge maximale*)

"modular scaffold" means a platform that is supported by uprights with fixed attachment points for standard-sized ledgers, bracing and accessories; (*échafaudage démontable*)

"needle-beam scaffold" means a platform that is supported by parallel horizontal beams suspended by ropes attached to overhead anchors; (*échafaudage à butons*)

"outrigger scaffold" means a platform that is supported by rigid members that are cantilevered out from the structure or vertical supports; (*échafaudage en bascule*)

"pumpjack scaffold" means a scaffold consisting of a work platform supported by vertical poles and adjustable support brackets and end guardrails and a safety net between the tool bench and the foot board; (*échafaudage de pompage*)

"rolling scaffold" means a freestanding scaffold that is equipped with castors or wheels at the base of the scaffold; (*échafaudage roulant*)

"scaffold" means a temporary elevated platform and the platform's supporting structure that are designed to support workers and hand tools, or workers, equipment and materials; (*échafaudage*)

"sill" means a wood, concrete or metal footing used to distribute the load from a standard, an upright or a base plate of a scaffold to the ground; (*sole*)

"single-pole scaffold" means a platform that is supported by bearers attached at the outer end to a single row of braced uprights and at the inner end to the structure; (*échafaudage à poteau simple*)

"suspended outrigger scaffold" means a scaffold with a working platform that is suspended by wooden vertical members from rigid horizontal members that are cantilevered out from the structure; (*échafaudage en bascule suspendu*)

"suspended powered scaffold" means a platform that is suspended from overhead supports by ropes or cables and equipped with winches or pulley blocks so that the scaffold can be moved, and includes a boatswain's chair, work basket, work cage, swingstage or other similar scaffold; (*échafaudage mécanique suspendu*)

"suspended scaffold" means a platform that is supported by four wire ropes suspended from members that are cantilevered out from the structure; (*échafaudage suspendu*)

"temporary supporting structure" means a false work, form, flyform deck panel, shoring, brace or cable that is used to support a structure temporarily or to stabilize materials or earthworks until the materials or earthworks are self-supporting or the instability is otherwise overcome, and includes metal scaffold components; (*structure de support temporaire*)

"tube and clamp scaffold" means a platform that is supported by steel or aluminum tubes with wedge or bolt clamp connectors and accessories; (*échafaudage à tubes et collets*)

"tubular frame scaffold" means a platform that is supported by welded tubular frames, cross-braces and accessories; (*échafaudage à cadres tubulaires*)

"upright" means a vertical scaffold member that transmits the load to the ground, and includes posts, verticals and standards; (*montant*)

"working load" means the total of the loads from workers, materials, equipment and work processes. (*charge de service*)

### Scaffold Required

**178.** If work cannot be safely done from the ground or from a permanent structure, an employer shall provide a scaffold or other safe working platform or a ladder that meets the requirements of Part 16 for the use of workers.

### Prohibition

- 179.** (1) An employer shall not require or permit a worker to use
- (a) a needle-beam scaffold or a suspended outrigger scaffold as a work platform; or
  - (b) a half-horse scaffold.
- (2) A worker shall not use a scaffold of a type described in subsection (1).

### Limited Use of Certain Scaffolds

- 180.** (1) An employer shall ensure that the following types of scaffolds are used only as light-duty scaffolds:
- (a) ladder jack scaffolds;
  - (b) single-pole scaffolds;
  - (c) pumpjack scaffolds.
- (2) An employer shall ensure that the following types of scaffolds are used only as light-duty scaffolds, unless the scaffold is designed by a professional engineer and constructed, erected, used, maintained and dismantled in accordance with that design:
- (a) bracket scaffolds;
  - (b) outrigger scaffolds;
  - (c) suspended scaffolds;
  - (d) suspended powered scaffolds.

### General Requirements

- 181.** (1) An employer shall ensure that
- (a) every light-duty scaffold is designed and constructed to support
    - (i) a minimum working load of 3.63 kN per lineal metre of platform width applied vertically and uniformly across an independent platform section along an imaginary line drawn perpendicular to the platform edge anywhere along the length of the section, and
    - (ii) a minimum uniformly distributed working load of 1.20 kN/m<sup>2</sup>, acting simultaneously with the concentrated load specified in subparagraph (i); and
  - (b) every heavy-duty scaffold is designed and constructed to support
    - (i) a minimum working load of 3.88 kN per lineal metre of platform width applied vertically and uniformly across an independent platform section along an imaginary line drawn perpendicular to the platform edge anywhere along the length of the section, and
    - (ii) a minimum uniformly distributed working load of 3.60 kN/m<sup>2</sup>, acting simultaneously with the concentrated load specified in subparagraph (i).



- (2) An employer shall ensure that every scaffold is
- (a) designed, constructed, erected, used and maintained so as to perform safely;
  - (b) designed, constructed and erected to support or resist
    - (i) in the case of a wooden scaffold, not less than four times the load that could be imposed on the scaffold,
    - (ii) in the case of a metal scaffold, not less than 2.2 times the load that could be imposed on the scaffold,
    - (iii) in the case of any components suspending any part of a scaffold supporting workers, not less than 10 times the load that could be imposed on those components, and
    - (iv) four times the maximum load or force to which the scaffold is likely to be subjected without overturning;
  - (c) erected, maintained and dismantled by a competent worker; and
  - (d) inspected by a competent individual prior to use and daily when in use for any damage, deterioration or weakening of the scaffold or its components.

(3) An employer shall ensure that a freestanding scaffold is restrained from overturning by guying or other suitable means.

(4) An employer shall ensure that a scaffold that is built from the ground or other surface

- (a) is supported by a foundation that is of sufficient area, stability and strength to ensure the stability of the scaffold;
- (b) is set level on a stable sill that is not less than 38 mm by 240 mm and continuous under not less than two consecutive supports;
- (c) has a base plate is installed in the upright, if an upright could penetrate the sill;
- (d) is supported against lateral movement by adequate, secure bracing;
- (e) is anchored
  - (i) vertically at not more than 4 m intervals and horizontally at not more than 6 m intervals,
  - (ii) if designed by a professional engineer, at intervals recommended by the engineer, or
  - (iii) if commercially manufactured, at intervals in accordance with the manufacturer's specifications;
- (f) is provided with internal stairways or ladders, if the scaffold is 9 m or more in height; and
- (g) is checked to ensure that the scaffold is plumb and level after each tier is added.

(5) If a scaffold is partially or fully enclosed, an employer shall ensure that scaffold components and tie-ins are adequate to support the added load that could be placed on the scaffold as a result of wind or other adverse weather conditions.

(6) An employer shall ensure that a worker who is required or permitted to work on a scaffold is provided with the following information:

- (a) the maximum working load of the scaffold;
- (b) any other information, restriction or condition that is necessary to ensure the safe use of the scaffold.

(7) If a scaffold is more than 6 m high, an employer shall install a gin wheel and hoist arm or other suitable lifting device to hoist materials from the ground.

#### Ropes in Scaffolds

**182.** (1) An employer shall ensure that a rope or wire rope that forms an integral part of a scaffold is protected against abrasion or other physical damage.

(2) If damage from heat or chemicals is possible to a rope that forms an integral part of a scaffold, an employer shall ensure that the rope used is made from heat or chemical resistant material.

#### Scaffold Planks and Platforms

**183.** (1) An employer shall ensure that scaffold planks

- (a) are inspected by a competent worker to ensure that the scaffold planks are free of defects before the planks are incorporated in a scaffold;
- (b) subject to subsections (2) and (4), are of 38 mm by 240 mm, number 1 structural grade spruce lumber or material of equivalent or greater strength;
- (c) are the same thickness as adjoining planks;
- (d) are laid tightly side by side with adjoining planks to cover the full width of the platform;
- (e) are secured to prevent accidental movement in any direction;
- (f) if wooden, do not span more than 3 m between vertical supports on a light-duty scaffold or 2.1 m between vertical supports on a heavy-duty scaffold;
- (g) if metal or manufactured laminate, do not have a span between vertical supports exceeding the span recommended by the manufacturer's specifications; and
- (h) extend between 150 mm and 300 mm beyond the bearers.

(2) An employer or supplier may use a manufactured scaffold plank if

- (a) the plank is used according to the manufacturer's specifications; and
- (b) the plank is clearly marked with its maximum working load or the load specifications are made readily available to the workers at the work site.

- (3) Subject to subsection (4), an employer shall ensure that a scaffold platform
- (a) is not less than 0.5 m wide in the case of a light-duty scaffold;
  - (b) is not less than 1 m wide in the case of a heavy-duty scaffold; and
  - (c) is level or, if used as a ramp, has a slope at an angle not steeper than five horizontal to one vertical.

(4) A single manufactured extending painter's plank, or a plank that is 51 mm by 305 mm, number 1 structural grade spruce lumber or material of equivalent or greater strength, may be used in a ladderjack scaffold.

#### Wooden Scaffolds

**184.** (1) An employer shall ensure that the dimensions of members of a wooden light-duty scaffold that is less than 6 m in height are not less than the dimensions specified in Schedule L.

(2) An employer shall ensure that a wooden scaffold is constructed of unpainted number 1 structural grade spruce lumber or material of equivalent or greater strength.

(3) "Wooden" in this section means a structural grade spruce lumber or material of equivalent or greater strength.

#### Metal Scaffolds

**185.** (1) If a metal scaffold is used, an employer shall ensure that the metal scaffold is erected, used, maintained and dismantled in accordance with the manufacturer's specifications or the recommendations of a professional engineer.

(2) If a metal scaffold or a component of a metal scaffold is damaged, deteriorated or weakened so that the strength or stability of the scaffold is affected, an employer shall ensure that the scaffold is not used until the scaffold or component is repaired or replaced by a competent individual in accordance with the manufacturer's specifications or the recommendations of a professional engineer.

- (3) If a metal scaffold is a tube and clamp scaffold, an employer shall ensure that
- (a) joints in adjacent uprights are staggered and do not occur in the same tier;
  - (b) joints in uprights are located not more than one-third of a tier away from the connection of a ledger;
  - (c) ledgers are erected horizontally along the length of the scaffold and coupled to each upright at regular intervals of one tier;
  - (d) all ledgers are joined to form a continuous length;
  - (e) individual tube lengths of a ledger are the lesser of
    - (i) two or more bays in length, or
    - (ii) the horizontal length of the scaffold;

- (f) tubes of different metals or gauges are not joined together; and
- (g) if base plates are required, they are securely installed in the uprights and securely attached to the sills.

(4) If a metal scaffold is a standard tubular frame scaffold, an employer shall ensure that

- (a) if base plates, shore heads, extension devices or screwjacks are necessary, they are securely installed and securely attached to the sills and the legs of the frame; and
- (b) there are no gaps between the lower end of one frame and the upper end of the frame below on stacked frames.

(5) If a metal scaffold is a modular scaffold, an employer shall ensure that

- (a) if extension devices or screwjack bases and base collars are necessary, they are securely installed and securely attached to the sills;
- (b) joints in adjacent uprights are staggered and do not occur in the same tier;
- (c) there are no gaps between the lower end of one upright and the upper end of the upright below it;
- (d) ledgers, bearers and braces are properly secured; and
- (e) components from different modular scaffold systems are not used in the same scaffold.

#### Heavy-Duty Scaffolds, Scaffolds Used at Certain Heights

**186.** (1) This section applies to

- (a) a heavy-duty scaffold;
- (b) a wooden scaffold that has a platform at a height that is 6 m or more above either ground level or a permanent working surface; and
- (c) a metal scaffold that has a platform at a height exceeding 15 m above either ground level or a permanent working surface.

(2) An employer shall ensure that a scaffold referred to in subsection (1) is

- (a) designed by a professional engineer and erected, used, maintained and dismantled in accordance with that design; or
- (b) commercially manufactured to meet the requirements of an approved standard and erected, used, maintained and dismantled in accordance with the manufacturer's specifications.

(3) While a scaffold referred to in subsection (1) is being erected, used, maintained or dismantled, an employer shall keep at the work site all drawings and supplementary information regarding the scaffold, including

- (a) the dimensions, specifications, type and grade of all components of the scaffold; and

- (b) the maximum load and the maximum working load that the scaffold is designed or manufactured to support.

(4) An employer shall make readily available to the workers a copy of the drawings and supplementary information referred to in subsection (3).

#### Bracket Scaffolds

**187.** An employer shall ensure that the brackets of a bracket scaffold are not more than 3 m apart, and are securely attached to prevent the brackets from dislodging.

#### Ladderjack Scaffolds

**188.** An employer shall ensure that

- (a) brackets and ladders used for a ladderjack scaffold are
  - (i) designed and constructed to support the anticipated load safely, and
  - (ii) used according to the manufacturer's specifications; and
- (b) ladders used for a ladderjack scaffold are not more than 3 m apart.

#### Single-Pole Scaffolds

**189.** An employer shall ensure that

- (a) a single-pole scaffold is adequately supported in two directions by a system of diagonal braces that are
  - (i) not more than 6 m long, and
  - (ii) connected to the uprights as close to the ledgers as possible; and
- (b) each ledger on a single-pole scaffold is supported by a bearer that is of substantial construction and is securely fastened to the structure.

#### Outrigger Scaffolds

**190.** If an outrigger scaffold is used, an employer shall ensure that the scaffold is

- (a) designed by a professional engineer and erected, used, maintained and dismantled in accordance with that design; or
- (b) commercially manufactured to meet the requirements of an approved standard and erected, used, maintained and dismantled in accordance with the manufacturer's specifications.

#### Suspended Scaffolds

**191.** (1) If a suspended scaffold is used, an employer or supplier shall ensure that the scaffold is

- (a) designed by a professional engineer and erected, used, maintained and dismantled in accordance with that design; or
- (b) commercially manufactured to meet the requirements of an approved standard and erected, used, maintained and dismantled in accordance with the manufacturer's specifications.

(2) An employer shall ensure that the working parts of the hoisting mechanism of a suspended scaffold are left exposed so that defective parts or irregular working of the mechanism can be easily detected.

(3) An employer shall ensure that a worker is not required or permitted to operate the hoisting mechanism of a suspended scaffold unless the worker is competent and is designated by the employer to perform that work.

(4) An employer shall ensure that all parts of a suspended scaffold are inspected prior to use and daily when in use.

#### Suspended Powered Scaffolds

**192.** (1) If a suspended powered scaffold is used, an employer or supplier shall ensure that the scaffold is

- (a) designed by a professional engineer and erected, used, maintained and dismantled in accordance with that design; or
- (b) commercially manufactured to meet the requirements of an approved standard and erected, used, maintained and dismantled in accordance with the manufacturer's specifications.

(2) An employer shall ensure that

- (a) if a parapet is part of the support structure of a suspended powered scaffold, the parapet can withstand the load; and
- (b) the anchor points for the suspension system are secure and can safely withstand the load.

(3) An employer or supplier shall ensure that a power unit of a suspended powered scaffold is equipped with positive pressure controls and positive drives for raising and lowering the scaffold.

(4) If a worker is required or permitted to use a manually-operated suspended powered scaffold, an employer or supplier shall ensure that

- (a) the scaffold is equipped with spring-actuated locking pawls;
- (b) the hoisting mechanism is locked in a positive drive position by means of a spring-steel locking pin; and
- (c) the locking pin is permanently attached to the hoisting mechanism by a light chain.

- (5) If a suspended powered scaffold is used, an employer shall ensure that
- (a) the suspension rope consists of wire rope that is not less than 8 mm in diameter or meets the scaffold manufacturer's specifications for the scaffold, or the recommendations of the professional engineer who designed the scaffold;
  - (b) either
    - (i) the suspension rope is long enough to reach the next working surface below the scaffold,
    - (ii) the end of the suspension rope is doubled back and held securely by a cable clamp to prevent the hoisting machine from running off the end of the rope, or
    - (iii) directional limiting devices that prevent travel of the working platform beyond the safe limit of travel are installed; and
  - (c) all rigging hardware has a safety factor of not less than ten.
- (6) An employer shall ensure that a suspended powered scaffold is equipped with a secondary safety device that will activate if the suspension rope connection or primary hoisting system fails.
- (7) An employer shall ensure that a lifeline used with a suspended powered scaffold is
- (a) suspended independently from the scaffold; and
  - (b) securely attached to a fixed anchor point so that the failure of the scaffold will not cause the lifeline to fail.
- (8) An employer shall ensure that the working platform of a suspended powered scaffold is
- (a) not less than 500 mm wide and fastened to the stirrups; and
  - (b) designed to prevent the scaffold from swinging or swaying away from the structure from which the scaffold is suspended.
- (9) An employer shall ensure that
- (a) there is no covering and no hoarding around or over a suspended powered scaffold; and
  - (b) two or more suspended powered scaffolds are not linked together by bridging the distance between the scaffolds with planks or another similar form of connection.
- (10) If a suspended powered scaffold is permanently installed on a structure, an employer shall, before the scaffold is used, ensure that a professional engineer has certified the scaffold, its suspension system and all components and anchor points.

### Tie-In Guides

**193.** (1) An owner of a new structure shall ensure that if the structure is to be serviced by a suspended powered scaffold, the structure is constructed with

- (a) fixed anchor points that will safely support the scaffold and lifelines; and
- (b) tie-in guides to provide a positive means of engagement between the suspended part of the equipment and the structure during the full vertical or inclined travel of the scaffold on the face of the structure.

(2) The tie-in guides required by paragraph (1)(b) must meet the requirements of an approved standard.

### Use of Suspended Powered Scaffolds

**194.** (1) An employer shall

- (a) develop work practices and procedures for the safe use of any suspended powered scaffold;
- (b) train workers who are required to use a suspended powered scaffold in the procedures developed under paragraph (a); and
- (c) ensure that the workers trained under paragraph (b) comply with the procedures developed under paragraph (a).

(2) An employer shall ensure that a suspended powered scaffold is operated by a competent worker.

(3) An employer shall ensure that all parts of a suspended powered scaffold are inspected prior to use and daily when in use.

(4) An employer shall ensure that a worker who works on a suspended powered scaffold is provided with and uses a full-body harness, connecting linkage, personal fall arrest system and lifeline that meet the requirements of Part 7.

### Workers' Responsibilities

**195.** (1) Before working on a suspended powered scaffold, a worker shall inspect the scaffold to ensure that

- (a) the thrustouts or parapet hooks are secured; and
- (b) the suspension ropes and lifelines are free from abrasion or other damage.



- (2) While working on a suspended powered scaffold, a worker shall
- (a) remain on the platform between the suspension ropes at all times;
  - (b) secure from fouling all ropes from the scaffold that extend to the ground or a landing;
  - (c) use a full-body harness, connecting linkage, personal fall arrest system and lifeline that meet the requirements of Part 7; and
  - (d) ensure that, when the scaffold is being moved up or down on a suspension rope, the scaffold is kept level.

- (3) A worker shall not
- (a) bridge the distance between a suspended powered scaffold and any other scaffold with planks or by any other means; or
  - (b) use the lifeline or the suspension ropes as a means of access to or exit from the scaffold unless that use is required in an emergency.

(4) A worker shall comply with the work practices and procedures developed under paragraph 194(1)(a).

### Rolling Scaffolds

**196.** (1) An employer shall ensure that the height of a rolling scaffold is not more than three times

- (a) the smallest dimension of the scaffold's base; or
- (b) the smallest dimension of the scaffold's base, including the extended outriggers, if outriggers are provided.

(2) If outriggers are provided on a rolling scaffold, an employer shall ensure that the outriggers are firmly attached to the scaffold uprights to ensure the stability of the scaffold.

- (3) An employer shall ensure that
- (a) each wheel on a rolling scaffold is equipped with a device to securely attach the wheel to the scaffold;
  - (b) if vertical adjusting devices are required, they are securely attached to the scaffold; and
  - (c) each rolling scaffold is secured against inadvertent movement while a worker is on the scaffold.

(4) An employer shall ensure that a scaffold erected on a movable platform is securely fastened to that platform.

(5) An employer shall not require or permit a worker to remain on a rolling scaffold while the scaffold is being moved unless

- (a) the height of the work platform does not exceed twice the shortest base dimension of the scaffold;

- (b) the route to be travelled by the rolling scaffold has been thoroughly examined and found to be free of any condition that could cause the rolling scaffold to tilt or otherwise go out of control; and
- (c) a work platform fills the entire area enclosed by the scaffold structure.

### Prohibition

**197.** Subject to sections 198 and 200, an employer shall ensure that a worker is not raised or lowered by, or works on, a platform or load suspended from powered mobile equipment.

### Aerial Devices and Elevating Work Platforms

- 198.** (1) An employer shall ensure that
- (a) an aerial device, elevating work platform or personnel lifting unit is designed, erected, used, maintained and dismantled in accordance with an approved standard; or
  - (b) a professional engineer has certified the aerial device, elevating work platform or personnel lifting unit and its elevating system and mountings referred to in paragraph (a).

(2) An employer shall not require or permit a worker to be raised or lowered by an aerial device or elevating work platform or to work from a device or platform held in an elevated position unless

- (a) there is an effective means of communication between the worker operating the controls and the worker raised on the platform, if they are not the same individual;
- (b) the elevating mechanism is designed so that, if it fails, the platform will descend in a controlled manner so that a worker on the platform is not endangered;
- (c) the controls are designed so that the platform will be moved only when direct pressure is applied to the controls;
- (d) the drive mechanism for moving the platform is positive and does not rely on gravity;
- (e) road traffic conditions, environmental conditions, overhead wires, cables and other obstructions do not create a danger to the worker;
- (f) the brakes of the aerial device or elevating work platform are engaged;
- (g) the aerial device or elevating work platform is equipped with outriggers and the outriggers are deployed;
- (h) the worker is provided with and is required to use a personal fall arrest system under Part 7; and
- (i) the aerial device or elevating work platform is equipped with a lanyard attachment point that is
  - (i) designed and constructed to an approved standard, or

- (ii) designed and certified by a professional engineer and installed and used in accordance with that design and certification.

(3) Despite any other provision in this section, an employer shall not require or permit a worker working on an exposed energized high voltage conductor to work from an aerial device or elevating work platform unless the controls are operated by the worker on the device or platform.

(4) If a worker leaves an aerial device or elevating work platform parked or unattended, an employer shall ensure that the device or platform is

- (a) locked or rendered inoperative; or
- (b) fully lowered and retracted with all hydraulic systems in the neutral position or incapable of operation by moving the controls.

(5) An employer shall ensure that

- (a) a worker who operates an aerial device or elevating work platform is trained to operate the device or platform safely; and
- (b) the training includes the manufacturer's specifications, load limitations, proper use of controls and any limitations on the surfaces where the device or platform is designed to be used.

(6) An employer shall, while a worker is on a work platform mounted on a forklift that is in a raised position, ensure that the operator

- (a) remains at the controls; and
- (b) does not drive the forklift.

(7) An employer shall ensure that the manufacturer's operating manual for an aerial device or elevating work platform is kept with the device or platform.

### Maintenance and Inspection

**199.** (1) An employer or supplier shall ensure that only competent individuals maintain and inspect an aerial device, elevating work platform, suspended powered scaffold, personnel lifting unit or scaffold to which section 186 applies.

(2) An employer or supplier shall ensure that a maintenance and inspection record for an aerial device, elevating work platform, suspended powered scaffold, personnel lifting unit or scaffold

- (a) is provided and is attached to the device, platform, unit or scaffold near the operator's station; and
- (b) includes the following information concerning the last maintenance:
  - (i) the date of the maintenance;
  - (ii) the name and signature of the individual who performed the maintenance;

- (iii) an indication that the maintenance has been carried out in accordance with the manufacturer's specifications.

#### Forklifts

**200.** (1) An employer shall ensure that a work platform mounted on a forklift on which a worker could be raised or lowered or required or permitted to work is

- (a) designed and constructed to an approved standard or designed and constructed and certified by a professional engineer;
- (b) securely attached to the forks of the forklift to prevent accidental lateral or vertical movement of the platform;
- (c) equipped with guardrails and toeboards that meet the requirements of sections 128 and 129; and
- (d) equipped with a screen or similar barrier along the edge of the platform adjacent to the mast of the forklift to prevent a worker from contacting the mast drive mechanism.

(2) An employer shall ensure that a worker working from a work platform referred to in subsection (1) uses a personal fall arrest system that meets the requirements of Part 7.

#### Temporary Supporting Structures

**201.** (1) An employer shall ensure that a temporary supporting structure is designed and constructed to safely withstand loads intended or reasonably anticipated to be supported by the structure.

(2) Without limiting the generality of subsection (1), an employer meets the requirements of subsection (3) if a temporary supporting structure consists of

- (a) shoring that is more than 3.6 m high; or
- (b) members that are connected to one another so that a load applied to any member of the structure could alter the stresses induced in the other members.

(3) An employer shall ensure that

- (a) a temporary supporting structure referred to in subsection (2)
  - (i) is designed by a professional engineer,
  - (ii) is inspected by a professional engineer after assembly and before use, and
  - (iii) is certified by a professional engineer; and
- (b) all the drawings and other instructions necessary to construct and use the temporary supporting structure safely are kept at the work site.

(4) An employer shall ensure that a scaffold constructed as an integral part of a temporary supporting structure is designed and certified by a professional engineer.

### Flyform Deck Panels

- 202.** (1) In addition to the requirements of section 201, an employer shall ensure that
- (a) all drawings and written procedures that are necessary to safely assemble, fly, use, dismantle or re-use a flyform deck panel are made readily available to the workers at the work site;
  - (b) the workers are instructed in and comply with the procedures referred to in paragraph (a);
  - (c) the flyform deck panel is securely attached to the permanent structure or to an adjacent panel; and
  - (d) the attachments referred to in paragraph (c) are completed and made secure before the flyform deck panel is detached from the hoist used to position the panel.
- (2) The drawings and procedures referred to in paragraph (1)(a) must include
- (a) the plan view, the longitudinal section and the cross-section of the panel;
  - (b) the calculated position of the centre of gravity of the panel;
  - (c) step-by-step procedures for all phases of assembly, flying, use, dismantling, repair and re-use of the panel;
  - (d) procedures for ensuring stability, if the panel is inherently unstable;
  - (e) procedures for application of the panel on a non-typical floor; and
  - (f) any other instructions that are necessary to ensure the safety of workers.

### Erection of Masonry Wall

**203.** An employer shall ensure that a temporary supporting structure used to stabilize a masonry wall during the erection of the wall is not removed until the wall is permanently stabilized.

### Erection of Skeleton Structure

- 204.** (1) If structural members of a skeleton structure or concrete sections of a structure are to be erected, an employer shall ensure that
- (a) the design includes procedures for safely erecting the members or sections;
  - (b) the design and procedures for erecting the members or sections required by paragraph (a) are certified by a professional engineer; and
  - (c) all necessary drawings and instructions to safely erect the structure safely are kept at the work site.

(2) An employer shall ensure that workers are instructed in and follow the procedures required by paragraph (1)(a).

(3) If the procedures referred to in subsection (1) are modified, an employer shall ensure that

- (a) the modified procedures are certified by a professional engineer; and
- (b) the drawings showing the modified procedures are made readily available to workers at the work site.

(4) An employer shall ensure that a competent supervisor is present at a work site while a skeleton structure is being erected until the structure is permanently stabilized.

### PART 13 HOISTS, CRANES AND LIFTING DEVICES

#### Interpretation

**205.** In this Part,

"boom" means a structural member that is attached to a crane superstructure and used to support the upper end of hoisting tackle; (*flèche*)

"crane" means equipment that

- (a) is designed to lift, lower and move loads horizontally, and
- (b) consists of a rotating superstructure, operating machinery and a boom; (*grue*)

"lifting device" means a device that is used to raise or lower material or an object, but does not include a crane or a hoist; (*dispositif de levage*)

"load rating" means the maximum load that could be lifted or lowered safely at a series of stated configurations under a series of stated conditions; (*limite de charge*)

"mobile crane" means a crane mounted on a truck, wheel or crawler base that can move freely under the crane's own power without being restricted to a predetermined path; (*grue mobile*)

"rated load" means the maximum load that could be lifted or lowered safely using a particular configuration under the conditions existing at the time of the lifting or lowering operation; (*charge nominale*)

"tower crane" means a crane that is mounted on a tower and that can rotate about the axis of the tower. (*grue à tour*)

### Application of Part

**206.** This Part applies to hoists, cranes and lifting devices at a work site other than hoists, cranes and lifting devices that are governed by the *Electrical Protection Act*.

### General Requirements

**207.** (1) An employer shall ensure that every hoist, crane and lifting device, including rigging, used at a work site is designed, constructed, installed, maintained and operated to perform safely those tasks for which it is used.

(2) A supplier shall ensure that every hoist, crane and lifting device, including rigging, supplied for use at a work site is designed, constructed, installed, maintained and operated to perform safely those tasks for which it is intended to be used.

### Standards

**208.** (1) An employer shall ensure that every hoist, crane and lifting device is constructed, inspected, tested, maintained and operated in accordance with an approved standard.

(2) A supplier shall ensure that every hoist, crane and lifting device is constructed, inspected, tested and maintained in accordance with an approved standard.

### Load Ratings

**209.** (1) An employer shall ensure that a hoist, crane or lifting device is provided with a durable and clearly legible indication of its load rating and that the indication is readily accessible to its operator at the control station.

(2) A supplier shall ensure that the indication of the load rating of a hoist, crane or lifting device contains

- (a) accurate load ratings for the hoist, crane or lifting device;
- (b) a warning, if applicable, that no allowance is made in the load ratings for such factors as the effects of swinging loads, tackle weight, wind, ice, degree of machine level, ground conditions, inflation of tires and operating speeds; and
- (c) restrictions, if applicable, on operating in low temperatures.

## Designated Operator

**210.** (1) In this section,

"competent operator" means a worker who

- (a) has successfully completed a training program that includes the elements set out in Schedule M for the crane that he or she will be required or permitted to operate; or
- (b) is completing the practical training required by Part II of Schedule M under the direct supervision of a competent operator or a qualified operator; (*opérateur compétent*)

"designated operator" means a worker designated under paragraph (2)(a) to operate a hoist, crane or lifting device; (*opérateur désigné*)

"qualified operator" means

- (a) a holder of a certificate of qualification in the crane and hoist operator trade issued under the *Apprenticeship, Trade and Occupations Certification Act*,
- (b) a worker who
  - (i) has received training and has experience in the safe operation of a crane that, in the opinion of the Chief Safety Officer, is equivalent to or superior to the training and experience of an individual referred to in paragraph (a) or (c), or
  - (ii) is a member of a class of workers whose training and experience in the safe operation of a crane is, in the opinion of the Chief Safety Officer, equivalent to or superior to the training and experience of an individual referred to in paragraph (a), or
- (c) an apprentice in the crane and hoist operator trade who is working under the direction of a individual described in paragraph (a) or (b). (*opérateur qualifié*)

- (2) If a hoist, crane or lifting device is operated at a work site, an employer shall
- (a) designate a worker to operate the hoist, crane or lifting device;
  - (b) ensure that the designated operator is trained in the operation of the hoist, crane or lifting device; and
  - (c) ensure that only a worker who is a designated operator operates the hoist, crane or lifting device.

(3) Subject to subsection (4), an employer shall ensure that a designated operator is a qualified operator if the crane to be operated is

- (a) a tower crane;
- (b) an overhead travelling crane that has a load rating exceeding 50 t;



- (c) a crane that is used to raise or lower a worker on a personnel lifting unit suspended from a hoist line; or
- (d) a mobile crane that has a load rating exceeding 5 t.

(4) In circumstances other than those described in subsection (3), an employer shall ensure that

- (a) for a crane with a load rating exceeding 5 t, the designated operator is a competent operator; and
- (b) for a mobile or overhead travelling crane with a load rating not exceeding 5 t, the designated operator is a competent worker.

(5) A worker shall not operate a hoist, crane or lifting device unless he or she is a designated operator and has been trained in the operation of the hoist, crane or lifting device.

(6) A worker shall not operate a crane unless he or she

- (a) has written proof of training in the operation of the crane that he or she will be required or permitted to operate; and
- (b) keeps written proof of that training readily accessible while he or she operates the crane.

#### Operating Procedures

**211.** (1) Subject to subsection (2), an employer shall ensure that

- (a) a copy of the manufacturer's specifications for a hoist or crane is readily accessible to the operator of the hoist or crane; and
- (b) an operator of a hoist or crane is thoroughly trained in and implements the manufacturer's specifications.

(2) If a manufacturer's specifications for a hoist or crane cannot be obtained, an employer shall develop an operating manual for the hoist or crane and ensure that

- (a) a copy of the manual is readily accessible to the operator; and
- (b) an operator of the hoist or crane is thoroughly trained in and implements the operating procedures set out in the manual.

#### Rated Load

**212.** (1) An employer shall not require or permit an operator of a hoist, crane or lifting device to raise a load that exceeds the rated load recommended by the manufacturer of the equipment or a professional engineer for the conditions in which the equipment is to be operated.

(2) An employer shall not require or permit an operator of a hoist, crane or lifting device to use it to raise or lower workers unless the load applied to the hoist, crane or lifting device is less than one-half of the rated load recommended under subsection (1).

- (3) An operator of a hoist, crane or lifting device shall not raise a load unless
- (a) the operator has determined the accurate weight of the load; and
  - (b) the load is less than the rated load for the operating conditions.

#### Raising and Lowering Workers

- 213.** (1) If a crane or hoist will be used to raise or lower workers, an employer shall
- (a) develop and implement work practices and procedures that will provide for the safe raising and lowering of the workers;
  - (b) train the workers in those work practices and procedures;
  - (c) ensure that hoisting equipment and personnel lifting units are inspected by a competent individual before use and daily when in use; and
  - (d) ensure that the competent individual referred to in paragraph (c) records the details of the inspection in the log book referred to in section 221.

(2) An employer shall not require or permit an operator of a crane or hoist to use, and an operator of a crane or hoist shall not use, a crane or hoist to raise or lower workers unless

- (a) the personnel lifting unit meets the requirements of section 198;
- (b) the suspension members of the personnel lifting unit are securely attached to the crane, hoist line or hook by a shackle, weldless link, ring or other secure rigging attachment;
- (c) there is a secondary safety device that attaches the suspension members of the personnel lifting unit to the crane or hoist rigging above the point of attachment referred to in paragraph (b);
- (d) the load line hoist drum has a system or device on the power train, other than the load hoist brake, that regulates the lowering rate of speed of the hoist drum mechanism; and
- (e) workers in the personnel lifting unit each use a full body harness attached to the personnel lifting unit.

#### Determining Weight of Load

**214.** (1) An employer shall provide the operator of a hoist, crane or lifting device with information necessary to enable the operator to determine readily and accurately the weight of a load that the operator is required or permitted to raise.

(2) An employer shall provide a permanent load gauge for a mobile crane that could be used for load ratings exceeding 9 t at the minimum operating radius.

(3) A permanent load gauge required under subsection (2) must measure the weight of a load being hoisted and instantaneously indicate that weight to the operator.

- (4) Subsection (2) does not apply to cranes that
- (a) use a device suspended by a wire rope to demolish a structure;
  - (b) use a magnet to raise or lower a load; or
  - (c) use a clam-style load carrier to move material.

(5) An employer shall not require or permit a worker to use a mobile crane referred to in subsection (2) unless the crane is equipped with a permanent load gauge that measures the weight of a load being hoisted and instantaneously indicates that weight to the operator.

- (6) An employer shall ensure that
- (a) a worker who is required or permitted to use a crane equipped with a permanent load gauge is trained in the safe use and limitations of the permanent load gauge; and
  - (b) the permanent load gauge is regularly inspected, maintained and calibrated in accordance with the manufacturer's specifications.

#### Overload Switches

- 215.** (1) An employer or supplier shall ensure that a tower crane is equipped with
- (a) both
    - (i) an overload limit switch that causes the hoist drum to stop when the load being hoisted exceeds the maximum rated load for a radius or boom angle or when the overturning moment exceeds the rated load moment, and
    - (ii) a moment overload switch that automatically restricts the radius within which the load can travel; or
  - (b) a permanent load gauge.
- (2) An employer shall not require or permit a worker to use a tower crane unless
- (a) the crane is equipped with the overload limit switch and moment overload switch required by paragraph (1)(a) or the permanent load gauge required by paragraph (1)(b);
  - (b) the worker is trained in the safe use and limitations of the overload limit switch and the moment overload switch or the permanent load gauge; and
  - (c) the overload limit switch and moment overload switch or the permanent load gauge are regularly inspected, maintained and calibrated in accordance with the manufacturer's specifications.

#### Designated Signaller

**216.** (1) An employer shall make use of a designated signaller if the operator of a hoist or crane does not have a clear, unobstructed view of any of the following throughout the whole range of movement of the load or hook:

- (a) the pick-up point;
- (b) the setting point and the load;
- (c) the hook, if there is no load.

(2) Before a hoisting operation begins, an employer shall ensure that the operator of the hoist or crane reviews with the designated signaller the signals to be used.

(3) If a hand signal is to be used in connection with a hoist or crane, an employer shall ensure that the signal used is

- (a) appropriate for the activity to be carried out; and
- (b) set out in an approved standard.

(4) An operator of a hoist or crane and a designated signaller shall use the signal set out in the standard referred to in paragraph (3)(b) that is appropriate for the activity to be carried out.

### General Requirements for Cranes and Hoists

**217.** (1) In this section,

"anti two block warning device" means a device that warns a worker that continued upward movement of a load line could cause a load block to strike the upper sheaves; (*limiteur de fin de course sur le levage*)

"jib" means an extension to a boom that is attached to the boom tip to provide additional boom length. (*fléchette*)

(2) An employer or supplier shall ensure that a crane is equipped with an effective warning device that

- (a) can be readily activated by the operator; and
- (b) is adequate to warn workers of an impending movement of the crane.

(3) An employer or supplier shall ensure that a crane that has a boom is equipped with

- (a) positive boom stops to prevent inadvertent movement of the boom;
- (b) a boom stop limit device to prevent the boom from being drawn back beyond a predetermined safe boom angle specified by the manufacturer;
- (c) a jib stop device to prevent the jib from being drawn back beyond the safe boom angle specified by the manufacturer, if a jib is attached to the boom; and
- (d) a boom angle indicator that is clearly visible to the operator while seated at the control station.

(4) An employer or supplier shall ensure that a crane is equipped with an anti two block warning device if

- (a) the crane will be used to hoist workers on a personnel lifting unit;  
or
- (b) the crane is a hydraulic crane with a rated load exceeding 9 t.

(5) An employer or supplier shall ensure that a hoist or crane that operates on rails, tracks or other guides is fitted with

- (a) a positive stop or limiting device installed on the hoist or crane or on the rails, tracks or other guides to prevent the hoist or crane from over-running safe limits or contacting other equipment that is on the same rail, track or other guide;
- (b) sweep guards installed to prevent materials on the rail, track or other guide from causing dislodgement of the hoist or crane; and
- (c) stops to prevent the crane or hoist from dropping more than 2.5 cm if an axle breaks.

(6) If a worker leaves a crane or hoist unattended or parked, an employer shall ensure that

- (a) the crane or hoist is stored in a manner that does not endanger a worker or other individual;
- (b) the operating machinery is locked or rendered inoperative;
- (c) the rigging and boom angle are secured; and
- (d) if it is a mobile crane, that it is stored on level ground with the wheels locked or chocked.

#### Hoists or Cranes with Outriggers

**218.** If a hoist or crane is designed to be operated with outriggers or other stabilizing devices, an employer shall ensure that

- (a) the outriggers or other stabilizing devices
  - (i) are used according to the manufacturer's specifications,
  - (ii) are set on a solid footing or pad, and
  - (iii) have their controls, if any, readily accessible to the operator and in a suitable position for safe operation;
- (b) the area around the outriggers or other stabilizing devices is kept free of obstruction;
- (c) there is a minimum clearance of not less than 600 mm between moving parts of the crane and obstacles near its base; and
- (d) if there is a risk to workers of being trapped or crushed by a moving part of the crane when the crane swings, the area around the base of the crane is barricaded to restrict the entry of workers.

### Operators' Cabs on Tower Cranes

**219.** If an operator's cab is attached to the boom or jib of a tower crane, the employer or supplier shall ensure that the cab is designed, positioned and attached in accordance with the manufacturer's specifications for the crane or the recommendations of a professional engineer.

### Erecting and Dismantling

**220.** (1) Subject to subsection (4), an employer shall develop a written procedure for safely erecting and dismantling a hoist or crane.

(2) The written procedure required by subsection (1) must include

- (a) the safe blocking of masts, booms and jibs; and
- (b) the number and qualifications of workers required to implement the procedure.

(3) An employer shall ensure that the erecting and dismantling of a hoist or crane is carried out in accordance with the written procedure required by this section.

(4) An employer may use, as a written procedure, the manufacturer's specifications for erecting or dismantling a hoist or crane if the specifications meet the requirements of a written procedure under subsections (1) and (2).

### Log Book

**221.** (1) An employer shall

- (a) provide a log book for each hoist and crane with a rated load exceeding 5 t;
- (b) ensure that the log book is kept readily available;
- (c) provide a copy of the log book to the operator on request;
- (d) ensure that the hours of service of each hoist or crane and details of inspections, maintenance or calibrations required by this Part are recorded in the log book;
- (e) ensure that each entry in the log book is signed by the individual who performs the inspection, maintenance or calibration; and
- (f) review and sign the log book at regular intervals.

(2) If a supplier of a hoist or crane provides a log book, an employer shall ensure that

- (a) information and signatures required are recorded in the supplier's log book instead of the employer's log book; and
- (b) the supplier's log book is kept with the hoist or crane.

## Inspections

**222.** (1) An employer or supplier shall ensure that a hoist, crane or lifting device is inspected by a competent individual to determine whether the hoist, crane or lifting device is in safe working condition

- (a) at the start of each work shift, before the hoist, crane or lifting device is used; and
- (b) at regular intervals as recommended by the manufacturer's specifications.

(2) If a defect or unsafe condition that could endanger a worker is found in a hoist, crane, lifting device or rigging, an employer or supplier shall

- (a) take immediate steps to protect the health and safety of a worker who could be endangered until the defect is repaired or the condition is corrected; and
- (b) as soon as is reasonably possible, repair the defect or correct the condition.

(3) An employer or supplier shall ensure that a mobile crane is subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer, not less than once every two years or at 1,800 hours of operation, whichever occurs first.

(4) An employer or supplier shall ensure that a tower crane is subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer,

- (a) before erection at each site; and
- (b) at subsequent intervals of one year or 2,000 operating hours, whichever occurs first.

(5) A worker shall not operate a crane unless a copy of the results of the testing or inspection required by subsection (3) or (4) is made readily available to the worker at the work site.

## Repairs

**223.** (1) If an inspection of a hoist, crane or lifting device reveals a condition that might render the hoist, crane or lifting device unsafe or incapable of raising a rated load in accordance with section 212, an employer or supplier shall not require or permit the use of the hoist, crane or lifting device until the condition is remedied.

(2) An employer or supplier shall ensure that a structural repair or modification to a component of a hoist or crane is performed only under the direction and control of a professional engineer.

(3) Before a hoist or crane is used after a structural repair or modification, an employer or supplier shall ensure that

- (a) the hoist or crane is tested under the direction of a professional engineer; and
- (b) a professional engineer has determined the rated load of the repaired or modified hoist or crane and has certified the hoist or crane.

(4) If the rated load of a hoist or crane after repair or modification differs from the rated load before repair or modification, an employer or supplier shall ensure that a new indication of load rating is provided in accordance with section 209.

#### Friction Type Hoists

**224.** On a construction site, an employer shall ensure that material is not hoisted vertically by a rope driven by friction between the rope and a powered surge wheel or drum unless the hoist is equipped with

- (a) a safety device that will prevent a free fall of the load; and
- (b) an emergency stop device.

#### Material Hoists

**225.** (1) In this section, "material hoist" means a hoist that

- (a) is designed to raise and lower equipment or material but not workers, and
- (b) has a load-carrying unit that moves within fixed guides. (*monte-matériaux*)

(2) If a material hoist is in use, an employer shall ensure that

- (a) workers are not required or permitted to ride on the hoist; and
- (b) loads do not project beyond the edges of the load-carrying unit.

(3) If the controls of a material hoist are not remote from the hoist, an employer shall ensure that an adequate overhead barrier is provided to protect the operator.

(4) An employer shall ensure that

- (a) the braking systems on a material hoist are capable of stopping 150% of the rated load referred to in subsection 212(1) at the maximum speed;
- (b) the area around the base of a material hoist is fenced or otherwise barricaded to prevent the entry of workers, and that workers are not required or permitted to enter that area other than when the load-carrying unit is at the lowest level; and
- (c) a landing gate is installed
  - (i) on each landing served by a material hoist, and
  - (ii) between 600 mm and 900 mm from the edge of the landing.



- (5) An operator of a material hoist shall not
- (a) leave the controls while a load-carrying unit is in the raised position;
  - (b) operate the hoist while a landing gate is open; or
  - (c) move a load-carrying unit until the operator is informed by signal that the load-carrying unit can be moved safely.
- (6) An employer shall ensure that
- (a) an operator of a material hoist and a designated signaller at a landing where loading or unloading is carried on, are able to maintain visual or audible communication with each other during loading or unloading; and
  - (b) a material hoist that is designed to exceed 20 m in height, is equipped with a signal system that will
    - (i) allow voice communication between a worker at a landing and an operator, and
    - (ii) inform an operator of the landing from which a signal originates.
- (7) An employer shall ensure that a power driven material hoist is equipped with a safety device that will stop and hold a load-carrying unit if a hoist rope or braking system fails.

#### Tower Hoists

- 226.** (1) In this section, "tower hoist" means a hoist with a tower that forms an integral part of the supporting structure and a load-carrying unit that travels between fixed guides. (*tour monte-charge*)
- (2) If a tower hoist is used, an employer shall ensure that
- (a) the pulley block is securely anchored and the ropes from the pulley to the hoisting engine are enclosed, and
  - (b) at each landing, the hoist is equipped with landing gates and devices that will prevent
    - (i) movement of the load-carrying unit when a landing gate is open, and
    - (ii) opening of a landing gate when the load-carrying unit is not standing at that landing.
- (3) If a tower hoist is not erected inside a structure, an employer shall ensure that the hoist
- (a) is enclosed on all sides, other than the landing side, by solid walls or equally effective fencing from ground level to a height of not less than 2 m; and
  - (b) is adequately braced or guyed to prevent sway or movement.

- (4) If a tower hoist is erected inside a structure, an employer shall ensure that
- (a) the hoist is enclosed on all sides, other than the landing side, at the ground level and at each floor level by solid walls or equally effective fencing from ground or floor level to a height of not less than 2 m;
  - (b) each point of access to the hoist is conspicuously marked by a warning sign; and
  - (c) the hoist structure is adequately supported at vertical intervals not exceeding 6 m.

#### Roofers' Hoists

- 227.** (1) If a roofer's hoist is used, an employer shall ensure that
- (a) counterweights on the hoist
    - (i) are designed as an integral part of the hoist,
    - (ii) remain securely attached to the hoist when hoisting is in progress, and
    - (iii) are designed to exert an opposing moment that is equal to not less than four times the moment exerted by the maximum rated load; and
  - (b) a part or section of the hoist that could become disconnected is equipped with suitable locking devices.
- (2) An employer shall not require or permit a worker to use roofing material as a counterweight on a roofer's hoist.
- (3) An employer shall ensure that a roofer's hoist is used only to perform vertical lifts.
- (4) An employer shall ensure that workers are not required or permitted to use a wooden gallows frame roofer's hoist.

#### Vehicle Hoists

- 228.** (1) In this section, "lock" means to fix the controls of a hoist in one position by mechanical means. (*verrouiller*)
- (2) An employer shall ensure that a pneumatic or hydraulic vehicle hoist is equipped with clearly marked controls that raise or lower the hoist only when a worker is applying pressure to the controls.
- (3) An employer shall ensure that a worker is not required or permitted
- (a) during raising or lowering of the hoist, to lock the controls referred to in subsection (2); or

- (b) to work or be under a raised vehicle or trailer unless the vehicle or trailer is supported by
  - (i) a vehicle hoist that is designed to safely support the weight of the vehicle or trailer, or
  - (ii) substantial stands or blocks and, if necessary, wheel chocks.

(4) For the purposes of subparagraph (3)(b)(ii), jacks alone are not sufficient.

(5) An employer shall ensure that pneumatic or hydraulic vehicle hoists are assembled, installed, operated and maintained according to the manufacturer's specifications.

#### Hand Operated Hoists

**229.** (1) An employer shall ensure that a hand operated hoist is designed, constructed, installed, operated and maintained in accordance with an approved standard.

(2) An employer or supplier shall ensure that a hand operated hoist is equipped with a spring-actuated or weighted ratchet and pawl, load brake or other mechanism that will stop and hold the load at a height desired by the operator.

(3) An employer shall not require or permit a worker to work under a load raised by a hand operated hoist unless the load is supported with adequate stands or blocks.

#### Winches

**230.** (1) An employer shall inspect manually operated hoisting or winching equipment thoroughly at appropriate intervals to ensure that the manually operated hoisting or winching equipment is capable of safe operation.

(2) Before a worker operates a winch on a vehicle, he or she shall ensure that brakes are applied or other effective means are taken to prevent movement of the vehicle.

(3) A worker who operates a vehicle equipped with a winch while the winch is in use shall not move the vehicle until the winch operator has given a signal that the vehicle can be moved safely.

(4) An employer shall not require or permit a worker to cross over or under a winch cable between a winch and the load or to go underneath the load while a winch is in use.

### A-Frames and Gin Poles

- 231.** An employer shall ensure that
- (a) an A-frame or gin pole is not inclined more than 45° from the vertical;
  - (b) an A-frame or gin pole is restrained from uncontrolled lateral and vertical movement; and
  - (c) the sheave and the cable keeper of an A-frame or gin pole are attached securely enough to withstand a load to which the assembly could be subjected.

### Piledriving Equipment

- 232.** (1) An employer shall ensure that
- (a) piledriving equipment is operated, inspected and maintained according to the manufacturer's specifications; and
  - (b) structural repairs or modifications to piledriving equipment are made under the direction of a professional engineer and certified by the professional engineer before the equipment is put in service.
- (2) If piledriving equipment is used, an employer shall ensure that a brake band or clutch that is contaminated by oil or grease is dismantled and cleaned or replaced before further use.
- (3) An employer shall ensure that
- (a) before a pile is placed in position for driving, the pile head is cut square and, in the case of a timber pile, cleaned free of debris, bark and splintered wood; and
  - (b) workers are adequately protected from injury that could be caused by the failure of a pile being driven.
- (4) An employer shall not require or permit a worker who works with piledriving equipment
- (a) to remain or ride on a load being moved;
  - (b) to work, stand or pass under a suspended load; or
  - (c) to be on the superstructure of the equipment or within range of a falling pile unless the worker is directly involved in the operation of hoisting piles.
- (5) If a worker uses piledriving equipment, an employer shall ensure that
- (a) the pile hammer is securely chocked while the hammer is suspended and the equipment is not operating; and
  - (b) piles are not hoisted in the leads while a worker who is not directly involved in the operation is on the superstructure of the equipment or within range of a falling pile.

(6) If piledriving equipment is fitted with pressure hammers, an employer or supplier shall ensure that the hoses are equipped with safety chains or safety ropes on the pressure side of the hose connections.

(7) An employer shall ensure that

- (a) crane booms used with vibratory hammers or vibratory pile extractors are inspected monthly by a competent individual for structural defects; and
- (b) structural defects found during an inspection are repaired under the direction of a professional engineer and certified by the professional engineer before the booms are put back into service.

(8) An operator of piledriving equipment shall ensure that

- (a) the pile hammer is securely chocked while the hammer is suspended and the equipment is not operating; and
- (b) piles are not hoisted in the leads while a worker who is not directly involved in the operation is on the superstructure of the equipment or within range of a falling pile.

## PART 14 RIGGING

### Interpretation

**233.** In this Part,

"pendant" means a fixed-length rope that forms part of a boom-suspension system; (*tirant de flèche*)

"rigging" means a combination of rope, wire rope, cable, chain, sling, sheave, hook and associated fittings used in a winching or hoisting operation. (*gréage*)

### General Requirements

**234.** An employer shall ensure that

- (a) rigging is assembled, used, maintained and dismantled under the supervision of a competent worker and in accordance with the manufacturer's specifications; and
- (b) a worker who is required or permitted to assemble, use, maintain or dismantle rigging is trained in safe rigging practices.

### Inspection

**235.** An employer shall ensure that rigging and components of rigging safely perform their intended function by

- (a) inspecting them thoroughly at appropriate intervals; and
- (b) visually inspecting them before each use.

### Maximum Loads

**236.** (1) An employer shall ensure that loads are not imposed on rigging that exceed

- (a) 10% of the breaking strength of the weakest part of the rigging, in the case of rigging used to raise or lower workers; and
- (b) 20% of the breaking strength of the weakest part of the rigging, in the case of any rigging other than that described in paragraph (a).

(2) Subject to subsection (3), an employer or supplier shall ensure that the maximum load that could be winched or hoisted by rigging, as determined in accordance with the manufacturer's specifications or as recommended by a professional engineer, is conspicuously marked on the rigging.

(3) If it is not reasonably possible to conspicuously mark the maximum load on the rigging, an employer shall ensure that information about the maximum load that could be winched or hoisted by the rigging is made readily available to the workers at the work site.

### Slings

**237.** (1) An employer shall ensure that a sling used to hoist a load and the sling's fittings and attachments are

- (a) suitable for the intended use;
- (b) suitable for, and capable of, supporting the load being hoisted;
- (c) arranged to prevent the load or a part of the load from slipping or falling;
- (d) arranged to ensure that the load is equally divided among the slings, if more than one sling is used;
- (e) capable of supporting
  - (i) not less than 10 times the load to which the sling, fittings and attachments could be subjected, if they are used to support a worker, and
  - (ii) not less than five times the maximum load to which the sling, fittings and attachments could be subjected, in any case other than to support a worker; and
- (f) guarded to prevent damage to the sling, if the sling could be used over a sharp edge.

- (2) An employer or supplier shall ensure that a sling is
  - (a) clearly labelled to indicate the sling's maximum load, or the sling's maximum load is made readily available to workers at the work site; and
  - (b) not used if the sling has been or could be damaged.

#### Shackles

**238.** (1) An employer shall ensure that a shackle is not subjected to a load exceeding the maximum load indicated on the shackle.

- (2) An employer shall ensure that
  - (a) shackle pins are installed to prevent accidental withdrawal; and
  - (b) a bolt is never used in place of a properly fitted shackle pin.

#### Sheaves, Spools and Drums

**239.** (1) An employer shall ensure that

- (a) the diameter of a sheave, spool or drum for wire rope is not less than the diameter specified by the manufacturer of the rope, and the rope is the correct size for the sheave, spool or drum over which the rope passes;
- (b) the grooving of a sheave is the correct size for the diameter of rope; and
- (c) a block or sheave is constructed or installed so that the rope cannot leave the block or sheave groove.

- (2) An employer shall ensure that
  - (a) rope fastened to a winding drum is fastened securely;
  - (b) the number of full wraps of rope that remain on a winding drum corresponds to the manufacturer's specifications; and
  - (c) if there are no manufacturer's specifications, not less than five full wraps of rope remain on a winding drum.

#### Knots and Wire Rope Clips

**240.** (1) An employer shall ensure that

- (a) a knot or wire rope clip is not used as a stopper on a rope or rope end that passes through a winding drum; and
- (b) a knot is not used to connect rigging hardware to a wire rope.

- (2) An employer shall ensure that wire rope clips are
  - (a) made of drop-forged steel;
  - (b) installed according to the manufacturer's specifications; and
  - (c) inspected at frequent intervals to ensure the nuts are tight.

- (3) If U-bolt clips are used to fasten wire rope, an employer shall ensure that
- (a) the U-bolt is installed so that the U section bears on the short or dead end of the rope and the saddle bears on the long or live end of the rope;
  - (b) the nuts are correctly torqued; and
  - (c) the number of clips and the amount of rope turn-back conform with the manufacturer's specifications.

(4) If double saddle or fist clips are used to fasten wire rope, an employer shall ensure that the clips are installed in numbers and with the amount of rope turn-back in accordance with the manufacturer's specifications.

(5) If double base clips are used to fasten wire rope, an employer shall ensure that the clips are not less than six rope diameters in length.

#### Eye Loops

- 241.** (1) An employer shall ensure that an eye loop used in a sling
- (a) is formed from
    - (i) a Flemish eye splice secured by a pressed steel ferrule; or
    - (ii) a steel wire loop secured by a cold-formed aluminum alloy ferrule; and
  - (b) is readily identifiable as being formed in accordance with paragraph (a).

(2) Unless the manufacturer of a rope specifies otherwise, an employer shall ensure that a suitable and properly sized thimble is inserted in an eye loop to increase the strength of the eye and decrease wear on the rope.

#### Hooks

- 242.** (1) If the dislodgment of a hook could injure a worker, an employer shall ensure that the hook is secured by a safety latch, mousing, shackle or other effective means, unless
- (a) skeleton steel is being hoisted or a similar operation is being performed while a sorting or grab hook is being used;
  - (b) power poles or telephone poles are being hoisted into place or removed using an approved S-hook;
  - (c) the design of the hook and the work practices used prevent dislodgement of the hook; or
  - (d) the health and safety of a worker disconnecting the hook would be placed at risk.



- (2) An employer shall not require or permit a worker to use a hook if
- (a) the throat opening of the hook has been increased or the tip has been bent more than 10° out of plane from the hook body; or
  - (b) a dimension of the hook has been reduced by more than 10%.
- (3) An employer shall not require or permit a worker to side load, back load or tip load a hook unless the hook has been specifically designed for that purpose.
- (4) An employer or supplier shall ensure that
- (a) a hook is clearly labelled with the maximum load of the hook in a location where workers using the hook can easily see the rating; or
  - (b) the hook's maximum load is made readily available to workers.
- (5) An employer shall not require or permit a worker to allow a load to bear against a safety latch, mousing or shackle.

#### Wedge Sockets

- 243.** If a wedge socket is used to anchor a wire rope, an employer shall ensure that
- (a) the wedge socket is installed according to an approved method;
  - (b) the dead end of the wire rope extends not less than 15 cm beyond the wedge socket; and
  - (c) the wire rope is fitted with a wire rope clip to prevent accidental release or loosening of the wedge.

#### Wire Rope

- 244.** (1) An employer shall ensure that wire rope used in rigging is
- (a) the type, size, grade and construction recommended by the manufacturer's specifications for the hoisting equipment or is rope of an equivalent type, size, grade and construction;
  - (b) compatible with the sheaves and the drum of the hoisting equipment;
  - (c) lubricated to prevent corrosion and wear;
  - (d) not spliced or knotted; and
  - (e) fitted with end connections that
    - (i) conform to the manufacturer's specifications concerning number, size and installation method, and
    - (ii) are securely fastened to the wire rope.
- (2) An employer shall ensure that wire rope used in rigging
- (a) subject to subsection (3), does not contain
    - (i) six or more randomly-distributed wires that are broken in one rope lay, or
    - (ii) three or more wires that are broken in one strand in a rope lay;

- (b) is not worn by more than one-third of the original diameter of the wire rope's outside individual wires; or
  - (c) shows no indications of
    - (i) kinking, birdcaging, corrosion or other damage resulting in distortion of the rope structure, or
    - (ii) damage that could result in rope failure.
- (3) An employer shall ensure that wire rope that is static or that is used for pendants does not have
- (a) three or more broken wires in one lay or in a section between end connectors; or
  - (b) one or more broken wires at an end connector.
- (4) An employer shall ensure that rotation-resistant wire rope is not used
- (a) as a cable in boom hoist reeving and pendants; or
  - (b) if an inner wire or strand of the wire rope is damaged or broken.
- (5) An employer shall ensure that a load is not imposed on a wire rope that exceeds the maximum load recommended by the manufacturer's specifications for the wire rope.

#### Motion of Load

- 245.** If a worker could be endangered by the motion of a load during winching or hoisting, an employer shall ensure that
- (a) one or more taglines are used to control the motion of the load;
  - (b) the taglines are of sufficient length to protect the workers from an overhead hazard;
  - (c) the taglines are not removed from the load until the load is securely landed; and
  - (d) only workers directly engaged in the winching or hoisting operation are required or permitted to be in the area where the load is being winched or hoisted.

### PART 15 ROBOTICS

#### Interpretation

- 246.** In this Part,

"robot system" means a robot and the accessories required for the robot's operation, including pendants as defined in subsection 251(1), devices, sensors, safeguards, power and control panels and communication interfaces to sequence and monitor the robot; (*système robotique*)

"slow speed" means a mode of operation in which the speed of a part of a robot does not exceed 250 mm per second; (*vitesse lente*)

"teach" means to generate and store a series of positional data points by moving a robot arm through a path of intended motions; (*programmer*)

"work envelope" means the volume of space enclosing the maximum designed reach of a robot, including the material, part, tool or specialized device that the robot is designed to manipulate. (*espace de travail*)

### Application of Part

**247.** This Part applies to the installation, operation, teaching and maintenance of robot systems, but does not apply to personal robots, automatic guided vehicle systems, automated storage and retrieval systems, automatic conveyor and shuttle systems, mobile robots or numerically controlled machine tools.

### Safe Work Practices and Procedures

**248.** (1) An employer shall, in consultation with the Committee or representative or, if there is no Committee or representative, the workers,

- (a) assess potential hazards to a worker who is required or permitted to install, operate, teach or maintain a robot or robot system at a work site; and
- (b) develop written safe work practices and procedures for the installation, operation, teaching and maintenance of robots and robot systems.

(2) An employer shall ensure that workers are trained in and implement the safe work practices and procedures developed under paragraph (1)(b).

### General Requirements

**249.** An employer shall ensure that robots and robot systems are

- (a) installed, anchored and wired in accordance with the manufacturer's specifications; and
- (b) compatible with conditions at the work site, including temperature, humidity, corrosive conditions, the presence of dust, the presence of electromagnetic interference or radio frequency interference and other conditions that could affect the safe operation or control of the robot or robot system.

## Safeguards

**250.** (1) In this section,

"interlock barrier" means a physical barrier around a work envelope that is equipped with gates and interlocks as defined in subsection 253(1) designed to stop all automatic operations of a robot and robot system when a gate within the barrier is opened; (*barrière à interverrouillage*)

"limiting device" means a device that restricts the distance a robot can travel after the limiting device is actuated; (*dispositif de limitation*)

"presence sensing device" means a device that is designed, constructed and installed to create a sensing field or area and that detects an intrusion into the field or area by workers, robots or other objects and stops all motion of the robot when the device is activated; (*capteur de présence*)

"restricted work envelope" means the portion of a work envelope to which a robot is restricted by devices that establish limits that cannot be exceeded if the robot or the robot's controls fail. (*espace de travail restreint*)

(2) Subject to sections 251, 252 and 253, an employer shall ensure that each robot and robot system is equipped with safeguards to

- (a) prevent a worker from entering the restricted work envelope while the robot or robot system is in motion; or
- (b) inhibit robot motion while a part of a worker's body is within the restricted work envelope while the robot or robot system is in motion.

(3) The safeguards required by subsection (2)

- (a) may include interlock barriers, limiting devices and presence sensing devices; and
- (b) must include clearly visible line markings on the floor on which the robot or robot system is mounted to identify the restricted work envelope.

## Controls

**251.** (1) In this section,

"emergency stop" means a circuit that uses hardware based components to override all other robot controls, shut off energy to a robot and stop all moving parts of a robot; (*dispositif d'arrêt d'urgence*)

"pendant" means a portable control device that permits an operator to control a robot from within the work envelope of the robot. (*boîtier de commande portatif*)

(2) Subject to subsection (3), an employer shall ensure that a robot's primary controls, including a restart control,

- (a) are located outside the restricted work envelope;
- (b) are arranged so that the robot and robot system are clearly visible to the worker who operates the primary controls; and
- (c) cannot be activated inadvertently.

(3) If a worker is required or permitted to enter a restricted work envelope, an employer shall ensure that the robot's motion cannot be initiated by an individual other than the worker using a pendant within the restricted work envelope.

(4) An employer shall ensure that a worker who operates a robot or robot system is provided with a readily accessible emergency stop device.

(5) An employer shall ensure that the controls of a robot provide a slow speed option.

#### Protection During Maintenance or Repair

**252.** An employer shall ensure that, before a worker undertakes the maintenance or repair of a robot or robot system,

- (a) the robot or robot system is locked out and remains locked out during that activity; or
- (b) a procedure equally as effective as that described in paragraph (a) is implemented to protect the worker.

#### Protection During Teaching

**253.** (1) In this section, "interlock" means an arrangement where the operation of one control or mechanism brings about, or prevents, the operation of another control or mechanism. (*interverrouillage*)

(2) If a worker is required or permitted to teach a robot, an employer shall ensure that

- (a) only the worker who is teaching the robot is required or permitted to enter the restricted work envelope;
- (b) the robot system is under the sole control of the worker who is teaching the robot;
- (c) when the robot is under drive power, it operates at slow speed only or at a speed that is deliberately selected and maintained by the worker who is teaching the robot;
- (d) the robot will not respond to a remote interlock or signal that would activate the robot; and
- (e) the worker leaves the restricted work envelope before returning the robot to automatic operation.

PART 16  
ENTRANCES, EXITS AND LADDERS

General Duty

**254.** An employer shall provide and maintain a safe means of entrance to and exit from a work site.

Doors

**255.** An employer shall ensure that

- (a) each door in a hazardous work area opens away from the hazard and is not blocked by an obstruction; and
- (b) each walk-in freezer or refrigerator is equipped with a means to open the door from the inside.

Travelways

**256.** (1) In this section, "travelway" means a place where workers or vehicles regularly travel or pass, and includes a ramp, runway, catwalk, bridge, conveyor, gantry or passage. (*voie de passage*)

(2) An employer shall ensure that a travelway

- (a) is strong enough to withstand traffic to which the travelway could be subjected;
- (b) has secure footing for workers and adequate traction for vehicles or equipment; and
- (c) is not less than 900 mm wide.

(3) An employer shall ensure that a travelway that could give rise to a hazard described in subsection 119(1) is provided with a guardrail.

Stairs

**257.** An employer shall ensure that

- (a) the widths of treads, the depths of treads and the vertical distances between treads are uniform throughout the length of a stairway and that each tread is level; and
- (b) stairs installed on or after the day on which this section comes into force, including temporary stairs, are not less than 600 mm wide.

Ladders

**258.** (1) An employer or supplier shall ensure that a ladder at a work site is designed, constructed and used to safely perform its function and is maintained.

- (2) An employer or supplier shall ensure that
  - (a) a wooden ladder or stepladder is not painted with a substance other than a transparent coating; and
  - (b) a ladder is not made by fastening cleats across a single rail or post.

#### Portable Ladders

**259.** (1) In this section and section 260, "portable ladder" means a ladder that is not fixed in place, and includes a stepladder. (*échelle portative*)

- (2) An employer shall ensure that a portable ladder
  - (a) is equipped with non-slip feet;
  - (b) is secured against accidental movement during use;
  - (c) that is metal or wire-bound is not used if the ladder or a worker handling or using the ladder could come into contact with an exposed energized conductor; and
  - (d) extends not less than 1 m above a platform, roof or other landing to which the ladder is used as a means of access.

(3) An employer shall ensure that each worker who handles or uses a portable ladder is instructed in the requirements of this section.

- (4) An employer shall ensure that a stepladder
  - (a) is not more than 6 m high when set for use;
  - (b) has legs that are securely held in position by means of metal braces or an equivalent rigid support; and
  - (c) when in use, has a front section slope at an angle of one horizontal to six vertical.

- (5) An employer shall ensure that
  - (a) an extension ladder is equipped with locks that securely hold the sections of the ladder in the extended position;
  - (b) if a section of an extension ladder is extended, the section that is extended overlaps another section for not less than 1 m;
  - (c) an extension ladder consisting of two sections does not exceed 14.6 m in length; and
  - (d) an extension ladder consisting of more than two sections does not exceed 20 m in length.

- (6) An employer shall ensure that none of the following exceeds 9 m in length:
  - (a) a single portable ladder;
  - (b) any section of an extension ladder.

### Use of Portable Ladders

**260.** (1) If a worker uses a portable ladder other than a stepladder, an employer shall ensure that

- (a) the ladder is placed against the structure so that the slope of the ladder is one horizontal to four vertical;
- (b) the worker does not extend any part of his or her body other than his or her arms beyond the side rails of the ladder;
- (c) the worker maintains a three-point stance on the ladder; and
- (d) the ladder is anchored to prevent movement
  - (i) at its base, and
  - (ii) at its upper points of support.

(2) An employer shall ensure that a worker does not work from either of the top two rungs or steps of a portable ladder, unless the ladder is a stepladder that has a platform equipped with a suitable handrail.

### Fixed Ladders

**261.** (1) In this section, "fixed ladder" means a ladder that is fixed to a structure in a vertical position or at an angle that is between vertical and 25° to the vertical. (*échelle fixe*)

(2) A ladder that is fixed to a structure at an angle of more than 25° to the vertical, or more than one horizontal to two vertical, is a stairway and is subject to the requirements of sections 127 and 257.

(3) An employer shall ensure that

- (a) the rungs on a fixed ladder are uniformly spaced with centres that are not less than 250 mm and not more than 300 mm apart;
- (b) a clearance of not less than 150 mm is maintained between the rungs on a fixed ladder and the structure to which the ladder is affixed;
- (c) a fixed ladder is securely held in place at the top and bottom and at intermediate points that are necessary to prevent sway;
- (d) the side rails of a fixed ladder extend not less than 1 m above a platform, roof or other landing on the structure to which the ladder is fixed;
- (e) a ladder opening in a platform, roof or other landing does not exceed 750 mm by 750 mm;
- (f) a fixed ladder that is more than 6 m high is equipped with
  - (i) platforms at intervals of not more than 6 m and ladder cages, or
  - (ii) a personal fall arresting system; and



- (g) a fixed ladder in an excavated shaft is installed in a compartment that is separated from the hoist compartment by a substantial partition.
- (4) If a ladder cage is required by these regulations, an employer shall ensure that
- (a) the ladder cage is constructed of hoops that are not more than 1.8 m apart, joined by vertical members not more than 300 mm apart around the circumference of the hoop;
  - (b) any point on a hoop of the ladder cage is not more than 750 mm from the ladder; and
  - (c) the ladder cage is of sufficient strength and is designed to contain a worker who could lean or fall against a hoop.
- (5) If a ladder cage is constructed, an employer shall ensure that
- (a) the lowest hoop of the ladder cage is not more than 2.2 m from a platform, landing or the ground; and
  - (b) the uppermost hoop of the ladder cage extends not less than 1 m above the level of a platform, landing or roof.

#### Construction Ladders

**262.** (1) In this section, "construction ladder" means a ladder constructed at a work site. (*échelle sur mesure*)

- (2) An employer shall ensure that
- (a) the side rails of a construction ladder that is 5 m or less in length are constructed of number 1 structural grade spruce lumber that measures not less than 38 mm by 89 mm or of material of equivalent strength and rigidity;
  - (b) the side rails of a construction ladder that is over 5 m in length are constructed of number 1 structural grade spruce lumber that measures not less than 38 mm by 140 mm or of material of equivalent strength and rigidity;
  - (c) any construction ladder is not more than 9 m long;
  - (d) the rungs of a construction ladder are
    - (i) constructed of number 1 structural grade spruce lumber that measures not less than 21 mm by 89 mm, or of material of equivalent strength and rigidity,
    - (ii) supported by filler blocks or secured by a single continuous wire, and
    - (iii) uniformly spaced with not more than 300 mm between their centres;
  - (e) the width between the side rails of a construction ladder is not less than 500 mm;

- (f) a two-way construction ladder that permits traffic in both directions at the same time is not less than 1.2 m wide and is constructed with a centre structural rail throughout the ladder's entire length; and
- (g) plywood is not used for the side rails or rungs of a construction ladder.

PART 17  
EXCAVATIONS, TRENCHES, TUNNELS AND EXCAVATED SHAFTS

Interpretation

**263.** In this Part,

"sheeting" means the members of a shoring system that retain the earth in position and, in turn, are supported by other members of the shoring system, and includes uprights placed so that individual members are closely spaced, in contact with or interconnected to each other; (*coffrage*)

"shoring" means an assembly of structural members designed to prevent earth or material from falling or sliding into an excavation; (*étayage*)

"spoil pile" means material excavated from an excavation, trench, tunnel or excavated shaft; (*déblais*)

"temporary protective structure" means a structure or device in an excavation, trench, tunnel or excavated shaft that is designed to provide protection from cave-ins, collapse, sliding or rolling materials, and includes shoring, boxes, trench shields and similar structures; (*structure de protection temporaire*)

"type 1 soil" means soil that most closely exhibits the following characteristics:

- (a) is hard in consistency, very dense in compactive condition and, if a standard penetration test is performed, has a standard penetration resistance of more than 50 blows per 300 mm,
- (b) can be penetrated only with difficulty by a small, sharp object,
- (c) has a dry appearance,
- (d) has no signs of water seepage,
- (e) can be excavated only by mechanical equipment,
- (f) does not include previously excavated soils; (*sol de type 1*)

"type 2 soil" means soil that most closely exhibits the following characteristics:

- (a) is very stiff in consistency, dense in compactive condition and, if a standard penetration test is performed, has a standard penetration resistance of 30 to 50 blows per 300 mm,
- (b) can be penetrated with moderate difficulty by a small, sharp object,
- (c) is difficult to excavate with hand tools,

- (d) has a low to medium natural moisture content and a damp appearance after it is excavated,
- (e) has no signs of water seepage,
- (f) does not include previously excavated soils; (*sol de type 2*)

"type 3 soil" means soil that

- (a) most closely exhibits the following characteristics:
  - (i) is stiff in consistency, compact in compactive condition and, if a standard penetration test is performed, has a standard penetration resistance of 10 to 29 blows per 300 mm,
  - (ii) can be penetrated with moderate ease by a small, sharp object,
  - (iii) is moderately difficult to excavate with hand tools,
  - (iv) exhibits signs of surface cracking,
  - (v) exhibits signs of localized water seepage, or
- (b) is previously excavated soil that does not exhibit any of the characteristics of type 4 soil; (*sol de type 3*)

"type 4 soil" means soil that

- (a) exhibits any of the following characteristics:
  - (i) is firm to very soft in consistency, loose to very loose in compactive condition and, if a standard penetration test is performed, has a standard penetration resistance of less than 10 blows per 300 mm,
  - (ii) is easy to excavate with hand tools,
  - (iii) is cohesive soil that is sensitive and, on disturbance, is slightly reduced in internal strength,
  - (iv) is dry and runs easily into a well-defined conical pile,
  - (v) has a wet appearance and runs easily or flows,
  - (vi) is granular soil below the water table, unless the soil has been dewatered,
  - (vii) exerts substantial hydraulic pressure when a support system is used, or
- (b) is previously excavated soil that exhibits any of the characteristics set out in paragraphs (a)(i) to (vii); (*sol de type 4*)

"upright" means a vertical member of a shoring system that is placed in contact with the earth and usually positioned so that the vertical member does not contact another vertical member; (*montant*)

"wale" means a horizontal member of a shoring system that is placed parallel to the excavation face and whose sides bear against the vertical members of the shoring system or the earth. (*raidisseur*)

## Application of Part

**264.** This Part applies to excavations, trenches, tunnels, excavated shafts and bore holes.

### Locating Underground Pipelines

**265.** (1) An employer shall accurately establish the location of all underground pipelines, cables and conduits in an area where work is to be done and shall ensure that those locations are conspicuously marked

- (a) before commencing work using power tools or powered mobile equipment on an excavation, trench, tunnel, excavated shaft or borehole; or
- (b) before breaking ground surface with any equipment that could contact underground utilities.

(2) If an operation is to be undertaken involving the disturbance of soil within 600 mm of an area of an existing pipeline, cable or conduit, an employer shall ensure that the pipeline, cable or conduit is exposed by hand digging or other approved method before mechanical excavating is allowed to begin within that area.

(3) If an operation referred to in subsection (2) exposes a pipeline, cable or conduit, an employer shall ensure that the pipeline, cable or conduit is supported to prevent damage during backfilling and any subsequent settlement of the ground.

(4) If there is contact with or damage to an underground pipeline, cable or conduit, an employer shall, without delay,

- (a) notify the owner of the pipeline, cable or conduit that contact or damage has occurred; and
- (b) take steps to protect the health and safety of workers who could be endangered until any unsafe condition resulting from the contact or damage is repaired or corrected.

### Excavating and Trenching

**266.** (1) An employer shall ensure that

- (a) before excavating or trenching begins, if the stability of a structure could be affected by an excavation or trench, the structure is supported by a temporary protective structure designed by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design;
- (b) all loose material is scaled or trimmed from the side of an excavation or trench where a worker is required or permitted to be present;
- (c) equipment, spoil piles, rocks and construction materials are kept not less than 1 m from the edge of an excavation or trench;

- (d) an excavation or trench that a worker could be required or permitted to enter is kept free from accumulation of water; and
- (e) the slope of a spoil pile adjacent to an excavation or trench has a slope at an angle not steeper than one horizontal to one vertical, or 45° measured from the horizontal.

(2) Subject to subsections (3) and (4), if a wall of an excavation or trench is cut back, an employer shall ensure that

- (a) in the case of type 1 or type 2 soil, the walls are sloped to within 1.2 m of the bottom of the excavation or trench, with a slope at an angle not steeper than one horizontal to one vertical, or 45° measured from the horizontal;
- (b) in the case of type 3 soil, the walls are sloped from the bottom of the excavation or trench, with a slope at an angle not steeper than one horizontal to one vertical, or 45° measured from the horizontal; and
- (c) in the case of type 4 soil, the walls are sloped from the bottom of the excavation or trench, with a slope at an angle not steeper than three horizontal to one vertical, or 19° measured from the horizontal.

(3) If an excavation or trench contains more than one type of soil, the soil must be classified as the soil type with the highest number.

(4) Subsection (2) does not apply to an excavation or trench that is cut in sound and stable rock.

(5) If an excavation or trench is to be made in the vicinity of an overhead power line pole, an employer shall ensure that the work is carried out in a manner that will not reduce the original support provided for the pole, unless permission has previously been obtained from the utility company responsible for the overhead power line.

(6) An employer shall ensure that none of the following is operated or located near an excavation or trench so as to affect the stability of the walls of the excavation or trench:

- (a) a unit of powered mobile equipment;
- (b) a vehicle of any type;
- (c) any other load.

#### Frozen Soil

**267.** If an excavation, trench, tunnel, excavated shaft or borehole is made in proximity to or into frozen soil, an employer shall take measures to preserve the adjacent frozen soil.

### Temporary Protective Structures

**268.** (1) An employer shall ensure that a temporary protective structure to be used under this Part

- (a) is designed, constructed, installed, used, maintained and dismantled to provide adequate protection to a worker who is in an excavation, trench, tunnel, excavated shaft or borehole and to a worker who installs, uses, maintains or dismantles the temporary protective structure; and
- (b) extends not less than 300 mm above the wall of the excavation, trench, tunnel, excavated shaft or borehole to prevent material from falling in.

(2) An employer shall ensure that

- (a) all drawings and instructions necessary to safely construct, install, use, maintain and dismantle a temporary protective structure required by this Part are kept at the site of the excavation, trench, tunnel, excavated shaft or borehole; and
- (b) if a professional engineer certifies a temporary protective structure, it will provide adequate protection to a worker who constructs, installs, uses, maintains or dismantles the temporary protective structure as instructed by the professional engineer.

(3) Freezing the ground by artificial means is acceptable as an alternative or partial alternative to installing a temporary protective structure in an excavation, trench, tunnel, excavated shaft or borehole if the freezing is

- (a) designed by a professional engineer to control the ground condition so as to ensure the safety of workers; and
- (b) performed in accordance with the professional engineer's specifications and instructions.

(4) Freezing the ground by natural means is acceptable as an alternative or partial alternative to installing a temporary protective structure in an excavation, trench, tunnel, excavated shaft or borehole if a professional engineer certifies the freezing.

### Protection Against Cave-In of Excavations

**269.** (1) If a worker is present in an excavation that is more than 1.2 m deep and is required to be closer to the wall or bank than the distance equal to the depth of the excavation, an employer shall ensure that the worker is protected from cave-ins or sliding material by

- (a) cutting back the upper portion of the walls of the excavation in accordance with subsection 266(2);
- (b) installing a temporary protective structure; or

- (c) a combination of cutting back the walls to the slope specified in subsection 266(2) and installing a temporary protective structure that extends not less than 300 mm above the base of the cut-back.

(2) Subject to subsection (3), an employer shall ensure that a temporary protective structure required by paragraph (1)(b) or (c) is

- (a) designed and installed using shoring made of number 1 structural grade spruce lumber having the dimensions set out in Schedule N for the type of soil and the depth of the excavation or made of material of equivalent or greater strength; or
- (b) designed by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design.

(3) An employer shall ensure that a temporary protective structure in an excavation more than 3 m deep is designed and certified by a professional engineer and installed, used, maintained and dismantled in accordance with that design.

#### Protection Against Cave-In of Trenches

**270.** (1) If a worker is present in a trench that is more than 1.2 m deep, an employer shall ensure that the worker is protected from cave-ins or sliding material by

- (a) cutting back the upper portion of the walls of the trench in accordance with subsection 266(2);
- (b) installing a temporary protective structure; or
- (c) a combination of cutting back the walls to the slope specified in subsection 266(2) and installing a temporary protective structure that extends not less than 300 mm above the base of the cut-back.

(2) An employer shall ensure that a temporary protective structure required by paragraph (1)(b) or (c) is

- (a) designed and installed using shoring made of number 1 structural grade spruce lumber having the dimensions set out in Schedule N for the type of soil and the depth of the trench or made of material of equivalent or greater strength; or
- (b) designed by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design.

(3) An employer shall ensure that a temporary protective structure in a trench more than 6 m deep in type 1, type 2 or type 3 soil or in a trench more than 4 m deep in type 4 soil is designed and certified by a professional engineer and installed, used, maintained and dismantled in accordance with that design.

(4) An employer shall ensure that

- (a) shoring is installed and removed in a manner that protects workers from cave-ins and structural collapses and from being struck by shoring components;

- (b) shoring components are securely connected together to prevent sliding, falling, kickouts or other possible failure; and
- (c) individual components of shoring are not subjected to loads that exceed the loads the components were designed to bear.

(5) If a worker is in a trench that is more than 1.2 m deep, an employer shall ensure that a competent worker is stationed on the surface to

- (a) alert the worker in the trench about the development of hazards; and
- (b) provide assistance in an emergency.

(6) If a worker is required or permitted to enter a trench, an employer shall

- (a) install ladders, stairways or ramps to provide a safe means of entrance to and exit from the trench; and
- (b) ensure that the ladder, stairway or ramp is located not more than 8 m from a worker working in the trench.

(7) An employer shall ensure that a worker who could be required or permitted to enter a trench is instructed in and complies with the requirements of this section.

#### Excavated Shafts and Tunnels

**271.** (1) An employer shall ensure that

- (a) during excavating, the walls of an excavated shaft or tunnel are retained by temporary protective structures that are adequate
  - (i) for the type of soil, and
  - (ii) to prevent collapse or cave-in of the walls of the excavated shaft or tunnel;
- (b) during the excavating of an excavated shaft that is 3 m or more deep or of a tunnel, the walls of the shaft or tunnel are retained by temporary protective structures designed and certified by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design;
- (c) a solid or wire mesh fence not less than 1 m high, or other equally effective means of preventing material from falling into an excavated shaft or the surface opening of a tunnel, is provided around that shaft or opening; and
- (d) substantial gates that are not less than 2 m high are installed in each opening in a fence provided under paragraph (c) and the gates are kept closed other than when in use.

(2) A worker who opens a gate referred to in paragraph (1)(d) shall close the gate after the worker no longer has a need to keep the gate open.

(3) An employer shall provide suitable equipment to keep a tunnel or excavated shaft free from accumulation of water.



### Boreholes, Belled Areas of Excavated Shafts

- 272.** (1) An employer shall ensure that
- (a) a worker who is required or permitted to enter a borehole is protected by the installation of a casing that is designed by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design; and
  - (b) the casing referred to in paragraph (a) extends and remains not less than 300 mm above the surface of the ground to prevent material from falling into the casing.
- (2) An employer shall not require or permit a worker
- (a) to enter the belled area of an excavated shaft unless the worker is protected by a temporary protective structure that is designed by a professional engineer and constructed, installed, used, maintained and dismantled in accordance with that design; or
  - (b) to remain in a belled area of an excavated shaft if the worker could be exposed to falling materials.
- (3) An employer shall ensure that a worker who is required or permitted to enter an excavated shaft precedes or accompanies each load of excavated material to the surface.

## PART 18 CONFINED SPACE ENTRY

### Interpretation

- 273.** In this Part, "hazardous confined space" means a confined space that endangers or could endanger a worker entering into or already in the confined space, due to
- (a) the design, construction or atmosphere of the space,
  - (b) the materials or substances in the space,
  - (c) the work activities or processes used in the space, or
  - (d) any other conditions relating to the space. (*espace restreint dangereux*)

### Identification of Confined Spaces and Hazards

- 274.** If a worker could be required or permitted to work in a confined space, an employer, in consultation with the Committee or representative, shall identify
- (a) types of confined spaces at the work site that the worker could be required or permitted to enter;
  - (b) types of hazards that are or could be present at each confined space;

- (c) alternative means to perform the work to be performed in the confined spaces that need not require the worker to enter the confined spaces; and
- (d) alterations to the physical characteristics of the confined spaces that could be necessary to ensure safe entrance to and exit from all accessible parts of each confined space.

#### Avoidance of Entry into Hazardous Confined Space

**275.** (1) If reasonably possible, an employer shall use an alternative means to perform work that will not require a worker to enter a hazardous confined space.

(2) An employer shall take reasonable steps to prevent unauthorized entry into a hazardous confined space.

#### Requirements Before Confined Space Entered

**276.** (1) If a worker will be required or permitted to work in a confined space, an employer shall, before requiring or permitting the worker to enter the confined space,

- (a) ensure that there is a safe entrance to and exit from all accessible parts of the confined space; and
- (b) make reasonable alterations to the physical characteristics of the confined space necessary to ensure a safe entrance to and exit from all accessible parts of the confined space.

(2) In making alterations under paragraph (1)(b), an employer shall ensure that the structural integrity of the confined space is maintained.

#### Requirements Before Hazardous Confined Space Entered

**277.** (1) Before a worker is required or permitted to enter a hazardous confined space, an employer shall appoint a competent individual

- (a) to assess the hazards;
- (b) if a potentially hazardous atmosphere has been identified, to test the atmosphere of the hazardous confined space for
  - (i) oxygen enrichment or deficiency,
  - (ii) the presence of flammable or explosive substances, and
  - (iii) the presence and concentration of hazardous airborne chemical substances; and
- (c) to determine whether
  - (i) work activities or processes will result in the release of toxic, flammable or explosive concentrations of substances during the worker's occupation of the confined space,
  - (ii) measures have been taken to ensure that the worker will not drown or become entrapped in liquid or free-flowing solid present in the confined space,

- (iii) the entry of liquid, free-flowing solid or hazardous substance into the confined space in a quantity that could endanger the health or safety of the worker has been prevented,
- (iv) all energy sources that present a hazard to the worker entering into, exiting from or occupying the confined space have been locked out, with the energy sources being put in a zero energy state,
- (v) any hazards from biological substances are present in the confined space, and
- (vi) the opening for entry into and exit from the confined space is sufficient to allow safe passage of the worker who is using personal protective equipment required by these regulations.

(2) When testing the atmosphere of a hazardous confined space in accordance with paragraph (1)(b), a competent individual shall use appropriate and properly calibrated instruments that have been tested to ensure that the instruments are capable of operating safely and effectively.

(3) A competent individual who carries out the activities described in paragraphs (1)(a) to (c) shall prepare a report in writing that sets out

- (a) the results of the assessment, tests and determinations;
- (b) any recommended special precautions and procedures to reduce the risk to a worker, that are to be followed by the worker entering into, exiting from or occupying the confined space; and
- (c) any recommended personal protective equipment to be used by a worker entering the confined space.

#### Notice If No Hazard Found

**278.** If a confined space is identified as not being a hazardous confined space, an employer shall

- (a) notify a worker who is required or permitted to enter the confined space that the confined space is not hazardous;
- (b) arrange for a method of communication with a worker on entry to and exit from the confined space and at appropriate intervals while a worker is in the confined space;
- (c) prepare a procedure for the removal of a worker who has become injured or incapacitated while in the confined space; and
- (d) ensure that the ventilation in the confined space is adequate to maintain safe atmospheric conditions.

## Entry Plan

**279.** (1) If a worker will be required or permitted to enter a hazardous confined space, an employer, in consultation with the Committee or representative, shall develop a hazardous confined space entry plan to ensure the health and safety of workers who enter or work in the hazardous confined space.

- (2) A hazardous confined space entry plan must be in writing and must include
- (a) the tests or measurements necessary to monitor for oxygen deficiency or enrichment or the presence and hazardous concentration of flammable or explosive substances;
  - (b) the identification of other hazards that could be present in the hazardous confined space and could endanger a worker in the space;
  - (c) the means, if any, of isolating the hazardous confined space;
  - (d) the means, if any, of ventilating the hazardous confined space;
  - (e) the procedures to enter, work in and exit from the hazardous confined space safely;
  - (f) the availability, location and proper use of personal protective equipment;
  - (g) the rescue procedures to be followed, including the number and duties of personnel and the availability, location and proper use of equipment;
  - (h) the means to maintain effective communication with a worker who has entered the hazardous confined space; and
  - (i) the availability, location and proper use of any other equipment that a worker could need to work safely in the hazardous confined space.

(3) An employer shall ensure that the following workers are trained in and implement a hazardous confined space entry plan:

- (a) a worker who is required or permitted to enter the hazardous confined space;
- (b) a worker who attends a worker in the hazardous confined space under subsection 281(4) or subsection 281(5);
- (c) a worker who could be required or permitted to implement the rescue procedures referred to in paragraph (2)(g).

(4) An employer shall make a copy of a hazardous confined space entry plan readily available at the entrance to the hazardous confined space.

### Purging and Ventilating of Unsafe Atmosphere

**280.** (1) In addition to the requirements of section 403 and subject to section 281, if a concentration of a toxic, flammable or explosive substance is present or an oxygen enrichment or deficiency exists in a hazardous confined space, an employer shall ensure that the hazardous confined space is

- (a) purged and ventilated before a worker is required or permitted to enter the space, so that
  - (i) any hazard associated with a toxic, flammable or explosive substance is reduced to the extent that is possible or eliminated, and
  - (ii) an oxygen content of between 19.5% and 23% is assured; and
- (b) continuously ventilated while the worker occupies the hazardous confined space, to maintain a safe atmosphere.

(2) If ventilation is used to reduce or eliminate a hazard under subsection (1), an employer shall ensure that a competent individual tests the atmosphere to determine that the confined space is safe for entry by workers

- (a) before workers enter the confined space;
- (b) if all workers have vacated the confined space, before any worker re-enters the confined space;
- (c) on the request of a worker who is required or permitted to enter the confined space; and
- (d) continuously if a condition in the confined space could change and put the workers' health or safety at risk.

### Precautions If Safe Atmosphere Not Possible

**281.** (1) If a hazardous confined space cannot be purged and ventilated to provide a safe atmosphere or a safe atmosphere cannot be maintained under section 280, an employer shall ensure that work is not carried out in the confined space unless it is carried out in accordance with the requirements of this section and section 403.

(2) An employer shall ensure that a competent individual continuously monitors the atmosphere in a hazardous confined space.

(3) An employer shall ensure that a worker is provided with and required to use a respiratory protective device that meets the requirements of Part 7 if

- (a) the airborne concentration for a substance meets or exceeds the permissible contamination limit set out in Schedule O;
- (b) oxygen deficiency or enrichment is detected; or
- (c) the airborne concentration of any other substance could be harmful to the worker.

- (4) An employer shall ensure that a worker in a hazardous confined space is attended by and in communication with another worker who
- (a) has been adequately trained in the rescue procedures referred to in paragraph 279(2)(g);
  - (b) is stationed and remains at the entrance to the confined space unless replaced by another adequately trained worker; and
  - (c) is equipped with a suitable alarm to summon assistance.
- (5) If entrance to a hazardous confined space is from the top
- (a) an employer shall ensure that
    - (i) a worker uses a full-body harness and, if appropriate, is attached to a lifeline,
    - (ii) if a lifeline is used, the lifeline is attended by another worker who is adequately trained in the rescue procedures referred to in paragraph 279(2)(g), and
    - (iii) if reasonably possible, a mechanical lifting device is available to assist with a rescue and is located at the entry to the confined space while a worker is in the confined space; or
  - (b) an employer shall ensure that an alternate method of rescue is developed and implemented if the use of a full-body harness or lifeline would create an additional hazard.
- (6) If flammable or explosive dusts, gases, vapours or liquids are or could be present in a hazardous confined space, an employer shall ensure that all sources of ignition are eliminated or controlled.
- (7) An employer shall ensure that
- (a) equipment necessary to rescue workers is readily available at the entrance to the hazardous confined space and used in accordance with the rescue procedures developed under paragraph 279(2)(g);
  - (b) the holder of a Level 1 first aid qualification certificate is available to provide immediate first aid; and
  - (c) personnel who are trained in the rescue procedures developed under paragraph 279(2)(g) and who are fully informed of the hazards in the confined space are readily available to assist in a rescue procedure.

#### Piping Discharging Hazardous Substances

- 282.** (1) If a worker could be required or permitted to work in a confined space into which piping could discharge a hazardous substance, an employer shall ensure that the piping
- (a) has a blank installed that is sized for the proper pressure in the piping before the piping enters the confined space;

- (b) is equipped with two blocking valves and a bleed-off valve installed between the blocking valves located so that bleed off does not contaminate the confined space; or
- (c) is equipped with an approved safety device.

(2) If piping is equipped with two blocking valves and a bleed-off valve in accordance with paragraph (1)(b) or an approved safety device in accordance with paragraph (1)(c), an employer shall ensure that

- (a) the valves in the flow lines are locked out in the "closed" position and the bleed-off valve is locked out in the "open" position;
- (b) the valves are tagged to indicate that the valves must not be activated until the tags have been removed by a worker designated by the employer for that purpose; and
- (c) the worker designated under paragraph (b)
  - (i) monitors the valves to ensure that they are not activated while a worker is in the confined space, and
  - (ii) records on the tag referred to in paragraph (b) the date and time of each monitoring and signs the tag each time the worker monitors the valves.

## PART 19 WORK IN COMPRESSED OR RAREFIED AIR

### Interpretation

**283.** In this Part,

"airlock" means a chamber designed for the passage of individuals or materials from one place to a place with a different air pressure; (*sas*)

"compressed air" means air that is mechanically raised to a pressure higher than 15 kPa above standard atmospheric pressure; (*air comprimé*)

"medical lock" means a chamber in which individuals could be subjected to changes in air pressure for medical purposes; (*écluse-infirmerie*)

"rarefied air" means air that is mechanically lowered to a pressure lower than 15 kPa below standard atmospheric pressure. (*air raréfié*)

### Application of Part

**284.** This Part applies to work performed in compressed or rarefied air, but does not apply to divers or other workers in diving bells.

### Before Working in Compressed or Rarefied Air

**285.** (1) In this section, "working chamber" means the part of a project under construction that is used for work in compressed air or rarefied air, but does not include an airlock or medical lock. (*chambre de travail*)

(2) Subject to subsection (5), an employer shall, not less than 30 days before work in compressed air or rarefied air begins,

- (a) give notice in writing to the Chief Safety Officer of the nature and location of the work; and
- (b) provide the Chief Safety Officer with copies of certificates from
  - (i) a professional engineer who is competent in construction work carried out in compressed air or rarefied air, and
  - (ii) a medical professional who is competent in hyperbaric or hypobaric medicine.

(3) The certificates required by paragraph (2)(b) must

- (a) certify the design of the compressed air or rarefied air installation and its components, including an airlock, medical lock, bulkhead, door and working chamber, the air supply system, the control system and the emergency facilities; and
- (b) contain a statement of conditions and procedures that are necessary to ensure the health and safety of workers who work in the compressed air or rarefied air installation.

(4) An employer shall ensure that work in a compressed air or rarefied air installation is performed in accordance with the conditions and procedures contained in the certificates required by subsection (2).

(5) If an employer cannot give the notice in the time required under subsection (2), the employer shall, as soon as is reasonably possible,

- (a) give notice to the Chief Safety Officer of an intention to begin that work; and
- (b) provide an explanation why the notice to the Chief Safety Officer was not given in the time required under subsection (2).

### Workers in Working Chamber

**286.** (1) If a worker works in a working chamber as defined in subsection 285(1), an employer shall ensure that

- (a) emergency procedures, including decompression or compression procedures, have been developed that are adequate to prevent injury to the worker;
- (b) the worker is fully trained in the emergency procedures required by paragraph (a);
- (c) the worker is regularly monitored by a medical professional; and



- (d) a competent supervisor is appointed and given the authority and resources necessary to protect the health and safety of workers in the working chamber.

(2) An employer shall ensure that the emergency procedures required by paragraph (1)(a) are implemented in an emergency.

(3) A worker who is monitored by a medical professional under paragraph (1)(c) shall comply with any requirement that the medical professional considers necessary to prevent or treat ill health caused by working in compressed air or rarefied air.

#### Standards for Air

**287.** An employer shall ensure that

- (a) the air supplied by a compressor plant for use in an airlock, medical lock or working chamber as defined in subsection 285(1), meets the requirements of the Canadian Standards Association standard CAN/CSA-Z180.1-00 (R2010), *Compressed Breathing Air and Systems*, as amended from time to time;
- (b) the air intake for a compressor plant that supplies air to an airlock, medical lock or working chamber as defined in subsection 285(1), is located so as to prevent the entry of exhaust gases from internal combustion engines, gasoline fumes or other contaminants; and
- (c) the air supplied to an airlock, medical lock or working chamber as defined in subsection 285(1), is kept, as far as is reasonably practicable, between 10°C and 27°C.

#### Maximum and Minimum Air Pressure

**288.** An employer shall ensure that air pressure in a working chamber as defined in subsection 285(1)

- (a) does not exceed 350 kPa for more than five minutes unless it is necessary for the safety of workers in an emergency; and
- (b) is not less than 30 kPa for more than five minutes unless it is necessary for the safety of workers in an emergency.

#### Working Periods and Rest Periods

**289.** (1) In this section,

"column" means a column in Schedule P; (*colonne*)

"rest period" means a period of time

- (a) during a worker's hours of work,
- (b) following a period that the worker worked in compressed or rarefied air, and
- (c) in standard atmospheric pressure; (*pause*)

"working day" means a period of 24 consecutive hours; (*journée de travail*)

"working period" means a period of time in which a worker works in compressed air or rarefied air. (*période de travail*)

(2) An employer shall ensure that

- (a) a worker who works in compressed air is not required or permitted to work more than two working periods in one working day;
- (b) the total number of hours in the two working periods of a worker's working day does not exceed the number of hours set out in column 2;
- (c) a worker's first working period in a working day does not exceed the number of hours set out in column 3;
- (d) after the first working period in a working day, a worker receives a rest period that is not less than the number of hours set out in column 4;
- (e) a worker's second working period in a working day does not exceed the number of hours set out in column 5; and
- (f) after the second working period in a working day, a worker receives a rest period that is not less than the number of hours set out in column 6.

(3) An employer shall ensure that workers are not required or permitted to perform manual work, engage in physical exertion or leave the work site during a rest period, unless it is in an emergency.

## PART 20 DIVING OPERATIONS

### Interpretation

**290.** In this Part,

"atmospheric pressure" means standard atmospheric pressure or atmospheric pressure within 15 kPa of standard atmospheric pressure; (*pression atmosphérique*)

"bail-out system" means an independent breathing gas supply of sufficient quantity to return a diver to the surface, a diving bell or an emergency supply in the event of a malfunction of the primary breathing gas supply system; (*bouteille de secours*)

"buddy system" means the system described in section 305; (*plongée en binôme*)

"decompression sickness" means a condition caused by the formation of gas bubbles in the blood or body tissue as a result of the reduction of pressure on the body; (*maladie de la décompression*)

"decompression table" means a table referred to in section 292; (*table de décompression*)

"dive site" means the location at the surface of the water at which a diver enters the water at the beginning of a dive and to which the diver intends to return on ascent; (*lieu de plongée*)

"diver" means a competent worker who performs underwater work; (*plongeur*)

"hyperbaric chamber" means a pressure vessel and associated equipment that are designed for the purpose of subjecting individuals to pressures exceeding atmospheric pressures; (*chambre hyperbare*)

"lifeline" means a line of manila rope that is 19 mm in diameter and has a breaking strength of not less than 8.9 kN or material of equivalent or greater strength, secured at the surface to a substantial anchorage; (*cordage de sécurité*)

"scuba" or "self-contained" underwater breathing apparatus" includes self-contained open-circuit compressed air breathing apparatus. (*appareil de plongée autonome*)

#### Competent Workers

**291.** An employer shall ensure that only competent workers are required or permitted to perform diving operations.

#### Standards

**292.** An employer shall ensure that diving operations, repetitive dives and treatments of divers are carried out in strict accordance with decompression tables and procedures published or approved by the Defence Research and Development Canada Toronto (formerly known as Defence and Civil Institute of Environmental Medicine) or another approved agency.

#### Medical Examination

**293.** (1) An employer who employs a diver shall ensure that the diver has a comprehensive medical examination that is

- (a) conducted by a medical professional not less than least once every 12 months; and

- (b) in accordance with the criteria set out in Appendices A and B of Canadian Standards Association standard CAN/CSA-Z275.2-11 *Occupational Safety Code for Diving Operations*, as amended from time to time.

(2) A diver shall not dive unless he or she has been certified by a medical professional in accordance with subsection (1) to be free of any medical condition that could make unsafe the performance of the type of dive to be carried out.

(3) A diver shall

- (a) provide the employer with a copy of the certification referred to in subsection (2); and
- (b) place the original certificate in the diver's personal log kept in accordance with section 304.

(4) An employer shall

- (a) ensure that a diver is not required or permitted to dive unless the diver furnishes the employer with a copy of a certificate obtained under subsection (2) within the preceding 12 months;
- (b) retain the copy of the certificate referred to in paragraph (a) while the diver works for the employer.

#### Diving Supervisor

**294.** An employer shall

- (a) ensure that diving operations are conducted under the direction of diving supervisors; and
- (b) provide to diving supervisors information and resources necessary to protect the health and safety of each diver under the direction of the diving supervisors.

#### Minimum Crew

**295.** An employer shall ensure that workers are present in sufficient numbers for a diving operation to ensure that the operation can be undertaken safely.

#### Standby Diver

**296.** (1) In this section,

"dressed-in" means fully equipped to dive and ready to enter the water, with all life support and communications equipment tested and at hand, but not necessarily with the helmet, face plate or face mask in place; (*équipé*)

"standby diver" means a diver who is

- (a) available at a dive site to give assistance to a submerged diver in an emergency,
- (b) dressed-in, and
- (c) trained and equipped to operate at the depths and in the circumstances in which the submerged diver is operating.  
(*plongeur en alerte*)

(2) An employer shall ensure that a standby diver is present when diving operations are in progress.

(3) An employer shall not require or permit a standby diver to dive other than in an emergency.

#### Diver's Tender

**297.** (1) An employer shall designate a worker as a diver's tender to monitor the dive of a diver.

(2) A diver's tender must be competent in the operation of diving apparatus used for a dive, the diving operation in progress and the emergency diving procedures and signals to be used between diver and diver's tender.

(3) An employer shall ensure that

- (a) a diver's tender acceptable to the diver is provided for each diver in the water during a diving operation; and
- (b) the diver's tender devotes his or her whole time and attention to the work as a diver's tender.

#### Breathing Gas

**298.** (1) In this section, "mixed gas" means a respirable breathing mixture, other than air, that provides adequate oxygen to support life and does not cause excessive breathing resistance, impairment of neurological functions or other detrimental physiological effects. (*mélange gazeux*)

(2) If air is used as the breathing gas by a diver, an employer shall ensure that

- (a) the air is clean and wholesome and supplied in adequate quantity; and
- (b) a reserve supply of 2.5 times the air required for the operation is supplied.

(3) An employer shall ensure that any air or mixed gas used as a breathing gas by a diver meets the approved standard for composition and purity requirements.

(4) If a mixed gas is used as a breathing gas by a diver, an employer shall ensure that the decompression procedures, schedules and tables used are appropriate for the mixed gas.

### Diving Equipment

**299.** An employer shall ensure that diving equipment, including breathing apparatus, compressors, compressed gas cylinders, gas control valves, pressure gauges, reserve supply devices, pipings, helmets, winches, cables, diving bells or stages and other accessories necessary for the safe conduct of the diving operation, is

- (a) of approved designs, sound construction, adequate strength and free from obvious defects;
- (b) maintained in a condition that will ensure the equipment's continuing operating integrity and suitability for use;
- (c) adequately protected against malfunction at low temperatures that could be caused by ambient air or water or by the expansion of gas; and
- (d) examined, tested, overhauled and repaired in accordance with the manufacturer's specifications.

### Diving Base

**300.** (1) An employer shall not allow a diving operation to proceed unless a diving base is set up before and maintained during the diving operation.

(2) While a diving operation is in progress, an employer shall ensure that the diving base is equipped with the following:

- (a) if scuba is being used, one complete spare set of underwater breathing apparatus with fully charged cylinders to be used for emergency purposes only;
- (b) an adequate quantity of oxygen for therapeutic purposes;
- (c) one shot-line of weighted 19 mm manila of sufficient length to reach the bottom at the maximum depth of water at the dive site;
- (d) a first aid kit that is appropriate for the number of workers and the work site;
- (e) one complete set of decompression tables;
- (f) a suitable heated facility for the use of divers that is located on or as near as possible to the dive site;
- (g) any other equipment that could be necessary to protect the health and safety of workers.

## Hyperbaric Chamber

**301.** (1) In this section,

"Class A hyperbaric chamber" means a hyperbaric chamber that meets the requirements for a Class A hyperbaric chamber as set out in Canadian Standards Association standard Z275.1-05, *Hyperbaric Facilities*, as amended from time to time; (*chambre hyperbare de catégorie A*)

"decompression limit" means the point in the descent of a diver, based on the depth and duration of the dive and determined in accordance with a decompression table, beyond which the diver will require one or more decompression stops during ascent if the diver descends further. (*limite de décompression*)

(2) An employer shall ensure that a Class A hyperbaric chamber in operable condition is on site if

- (a) a dive is planned that could exceed the decompression limit; or
- (b) the depth of a dive exceeds 50 m.

## Diving Plan

**302.** (1) In this section, "surface crew" includes the minimum crew required under section 295, the diving supervisor, standby diver and diver's tender. (*personnel en surface*)

(2) A diving supervisor shall submit a general diving plan in writing to the employer before beginning a diving operation.

(3) A diving supervisor shall

- (a) plan the dive to ensure the health and safety of the diver;
- (b) instruct the surface crew on the procedures necessary to ensure the health and safety of the diver;
- (c) ensure that all necessary equipment is available and is in good operating condition;
- (d) ensure that the quantity of breathing gas supplied to a diver is sufficient for the dive that is planned;
- (e) develop and implement a contingency plan for any reasonably foreseeable emergency situation that could endanger the diver;
- (f) keep a log showing each diver's activities on each day and make entries respecting each dive on the day on which the dive is performed;
- (g) remain in the immediate area of the dive site while a diving operation is in progress;
- (h) ensure that each diver enters in the diver's personal log the information required by paragraph 304(3)(a) for each dive performed by the diver; and

- (i) verify the accuracy of the information recorded in each diver's personal log required by paragraph 304(3)(a) and sign the entry to acknowledge the supervisor's verification.

(4) Nothing in this section limits the responsibilities of an employer under this Part.

#### General Responsibilities of Diver

**303.** A diver shall

- (a) proceed in accordance with the general diving plan and the instructions of the diving supervisor;
- (b) inspect his or her equipment immediately before each dive; and
- (c) begin each dive by submerging and checking all equipment to ensure that there are no leaks and that the equipment is functioning properly.

#### Diver's Personal Log

**304.** (1) In this section,

"bottom time" means the total elapsed time, measured in minutes, from the time a descending diver leaves the surface of the water to the time the diver begins final ascent; (*durée du séjour au fond*)

"therapeutic recompression" means treatment of a diver for decompression sickness, usually in a hyperbaric chamber. (*recompression thérapeutique*)

(2) A diver shall keep a personal log and retain the log for a five-year period after the log's completion.

(3) A diver shall record in the personal log, in chronological order

- (a) an entry for each dive that he or she has made, verified and signed by the diving supervisor and including
  - (i) the type of breathing apparatus used,
  - (ii) the breathing gas used,
  - (iii) the time at which the diver left the surface,
  - (iv) the bottom time,
  - (v) the maximum depth reached,
  - (vi) the time the diver left the bottom,
  - (vii) the time the diver reached the surface,
  - (viii) the surface interval, if more than one dive is undertaken in a day,
  - (ix) the decompression table and schedule used,
  - (x) the date of the dive,



- (xi) any observations relevant to the health or safety of the diver arising from the dive, and
  - (xii) the name of the employer; and
- (b) an entry signed by an attending physician or diving supervisor, respecting any therapeutic recompression or other exposure to a hyperbaric environment.

#### Buddy System

**305.** (1) The buddy system of diving involves the use of two divers, each of whom is responsible for the other diver's safety.

- (2) A diver who is diving using the buddy system shall
- (a) maintain constant visual contact with the other buddy diver during the dive;
  - (b) know the hand signals being used and acknowledge each signal as given;
  - (c) not leave the other buddy diver unless it is an emergency requiring the assistance of one of the buddy divers; and
  - (d) abort the dive immediately if the buddy divers become separated from each other or the other buddy diver aborts the dive.

#### Free Swimming Diving

**306.** (1) In this section, "free swimming diving" means diving while using self-contained underwater breathing apparatus with the diver supervised but not tethered to the surface by a lifeline or float. (*plongée libre*)

(2) An employer shall ensure that free swimming diving is performed only if a dive cannot safely be accomplished in the tethered mode.

(3) An employer shall not require or permit a diver to perform free swimming diving unless

- (a) the diver is accompanied by a tethered in-water standby diver or the buddy system is used; and
- (b) the employer has first ensured that conditions are such that the free swimming dive can be undertaken safely.

#### Scuba Diving

**307.** (1) An employer shall ensure that, during scuba diving operations, a diver uses

- (a) open-circuit scuba equipped with a demand regulator and a tank with quick-release harness;
- (b) a reserve device or bail-out system;
- (c) a lifeline unless the buddy system is used; and

- (d) an exposure suit or protective clothing that is appropriate for the condition of work and the temperature of the water.
- (2) An employer shall ensure that a diver using scuba equipment does not
- (a) dive to a depth exceeding 50 m; or
  - (b) dive without a lifeline
    - (i) under ice, or
    - (ii) if hazardous conditions exist, including water currents, low visibility and adverse weather conditions.

### Surface-supply Diving

**308.** (1) In this section,

"surface-supply diving" means a mode of diving where the diver is supplied from the dive site with breathing gas from an umbilical; (*plongée en narghilé*)

"umbilical" means a life support hose bundle comprising a composite hose and cable, or separate hoses and cables, that

- (a) extends from the surface to a diver or to a submersible chamber occupied by a diver, and
- (b) supplies breathing gas, power, heat and communication to the diver. (*ombilical*)

(2) If a diver is required or permitted to perform surface-supply diving, an employer shall ensure that

- (a) the umbilical incorporates a lifeline to prevent stress on the hose;
- (b) the connections between the airline and the equipment supplying the breathing gas to the diver are secured and properly guarded to prevent accidental disconnection or damage;
- (c) the air line is equipped with the following, in sequence from the surface connection:
  - (i) a regulating valve that is clearly marked as to which diver's air supply the valve controls,
  - (ii) a pressure gauge that is accessible and clearly visible to the diver's tender,
  - (iii) a non-return valve at the point of attachment of the air line to the diving helmet or mask;
- (d) the diver carries a bail-out system; and
- (e) the diver is equipped with a lifeline and an effective means of two-way communication between the diver and the diver's tender referred to in section 297.

PART 21  
CHEMICAL AND BIOLOGICAL SUBSTANCES

Interpretation

- 309.** (1) An employer shall, at a work site,
- (a) monitor the use or presence of, or a worker's exposure to, harmful or hazardous chemical or biological substances;
  - (b) if reasonably possible, substitute less harmful or hazardous chemical or biological substances for harmful or hazardous chemical or biological substances;
  - (c) subject to subsection 314(1), to the extent that is reasonably possible, reduce contamination of the work site by harmful or hazardous chemical or biological substances; and
  - (d) develop and implement work procedures and processes that are as safe as is reasonably possible for the handling, use, storage, production and disposal of harmful or hazardous chemical or biological substances.
- (2) An employer shall take steps, to the extent that is reasonably possible, to prevent exposure of workers to
- (a) harmful or hazardous chemical or biological substances; or
  - (b) chemical or biological substances in combination or association with other harmful or hazardous chemical or biological substances.
- (3) An employer shall
- (a) inform workers of the nature and degree of the effects to their health or safety of exposure to harmful or hazardous chemical or biological substances; and
  - (b) provide workers with adequate training in
    - (i) work procedures and processes developed under paragraph (1)(d), and
    - (ii) the proper use of personal protective equipment required by these regulations.
- (4) An employer shall make available to the Committee or representative
- (a) results of measurements of worker exposure to, and contamination of a work site by, harmful or hazardous chemical or biological substances; and
  - (b) a description of steps taken to reduce the contamination of a work site by, and eliminate or reduce exposure of the workers to, harmful or hazardous chemical or biological substances.

### List of Chemical and Biological Substances

- 310.** (1) An employer shall, in consultation with the Committee or representative,
- (a) develop and maintain a list of harmful and hazardous chemical or biological substances that are regularly handled, used, stored, produced or disposed of in the course of work processes or that are otherwise present at a work site; and
  - (b) identify on the list referred to in paragraph (a) those chemical substances that are controlled products.
- (2) The employer shall
- (a) amend the list referred to in subsection (1) if harmful or hazardous chemical or biological substances are added to or removed from the work site;
  - (b) submit a copy of each amendment to the Committee or representative; and
  - (c) keep a copy of the list at the work site and make the list readily available to the workers.

### Precautions for Certain Substances

- 311.** (1) If a chemical or biological substance is listed or identified under subsection 310(1), an employer shall take reasonable steps to
- (a) identify and record the hazards that could arise from the handling, use, storage, production or disposal of the substance at the work site;
  - (b) determine and apply precautions that need to be taken with respect to the substance to ensure the health and safety of workers; and
  - (c) clearly mark the container holding the substance with the name of the substance.

(2) An employer shall, in consultation with the Committee or representative, develop and implement a program to instruct workers about the hazards of the substances listed and identified under section 310 and subsection (1) and train workers in the precautions to be taken with respect to those substances.

### Substances Listed in Schedule Q

**312.** (1) An employer shall send to the Chief Safety Officer a written notice of the handling, use, storage, production, distribution or disposal, or intended handling, use, storage, production, distribution or disposal of those chemical or biological substances set out in Schedule Q.

(2) An employer shall not require or permit a worker to handle, use, store, produce, distribute or dispose of chemical or biological substances set out in Schedule Q without obtaining the written permission of the Chief Safety Officer.

### Substances Listed in Schedule R

- 313.** If a worker is required or permitted to handle, use, store, produce or dispose of a chemical substance set out in Schedule R, an employer shall
- (a) provide adequate engineering controls to prevent, to the extent that is reasonably possible, the release of the substance into the work site; and
  - (b) take other measures and provide personal protective equipment that meets the requirements of Part 7 to prevent, to the extent that is reasonably possible, exposure of workers to the substance.

### Substances Listed in Schedule O

**314.** (1) Subject to sections 313 and 315, if a chemical or biological substance set out in Schedule O is present at a work site, an employer shall, to the extent that is reasonably possible,

- (a) provide adequate engineering controls to ensure that the contamination limit set out in Schedule O is not exceeded; and
- (b) take steps to ensure that workers' personal exposure does not exceed the contamination limits set out in Schedule O.

(2) An employer shall, in consultation with the Committee or representative, develop and implement a written procedure in accordance with subsection (3) if a chemical or biological substance set out in Schedule O is present at a work site in an airborne concentration that could be hazardous to workers who

- (a) are regularly required or permitted to work more than eight hours in a day or 40 hours in a week; or
- (b) could be exposed to a combination or association of substances listed in Schedule O that have similar toxicological effects when acting on the same organ or body system.

(3) A written procedure required by subsection (2) must identify

- (a) the substances to which workers could be exposed;
- (b) the conditions under which workers could be required or permitted to work, including the frequency, quantity and duration of exposure to the substances; and
- (c) the steps that the employer will take to ensure, to an extent that is reasonably possible, that workers' personal exposure does not exceed the equivalent of the contamination limit set out in Schedule O.

### Protection of Certain Workers

**315.** (1) This section applies if a chemical or biological substance is present at a work site in a form and to an extent that could be harmful to a worker who

- (a) has become sensitized to the substance;
- (b) is unusually responsive to the substance; or
- (c) is pregnant.

(2) An employer shall, after being made aware of a worker's condition of a type described in subsection (1),

- (a) if reasonably possible, take steps to minimize the exposure of the worker to the substance; or
- (b) on the worker's request, assign the worker to less hazardous alternate work, if that work is available.

### Respiratory Protective Devices

**316.** If it is not reasonably possible to reduce a worker's personal exposure to a chemical or biological substance to the contamination limit set out in Schedule O, an employer shall provide an approved respiratory protective device that meets the requirements of Part 7 and require the worker to use it.

### Accumulations, Spills and Leaks

**317.** If there is a possibility of an accumulation, spill or leak of a harmful or hazardous chemical or biological substance at a work site, an employer shall

- (a) in consultation with the Committee or representative, develop written emergency procedures to be implemented in the event of an accumulation, spill or leak;
- (b) make readily available for reference by workers a copy of the emergency procedures developed under paragraph (a);
- (c) ensure that workers are trained in the emergency procedures developed under paragraph (a) that
  - (i) require the involvement of workers, or
  - (ii) are necessary to protect the health or safety of workers;
- (d) ensure that competent individuals, equipment, supplies and personal protective equipment are available for the prompt, safe and effective containment, neutralization and decontamination of any accumulation, spill or leak; and
- (e) ensure that the emergency procedures developed under paragraph (a) are implemented in the event of an accumulation, spill or leak.

### Report of Worker's Exposure

**318.** (1) If an accumulation, spill or leak of a chemical or biological substance set out in Schedule Q or R occurs and results in the exposure of a worker to the chemical or biological substance to an extent that could affect the health or safety of the worker, an employer shall, in consultation with the Committee or representative, investigate the incident as soon as is reasonably possible and prepare a written report that includes

- (a) a description of the incident, including the date and all affected work sites;
- (b) the names of the substances released and the characteristics of the substances;
- (c) for each substance released, the estimated duration and the extent of each worker's exposure;
- (d) the name of each worker exposed and the manner in which the substance entered the worker's body;
- (e) the causes of the incident; and
- (f) any corrective actions taken to prevent occurrence of a similar incident.

(2) An employer shall provide a copy of a report prepared under subsection (1) to workers who were exposed to the chemical or biological substance that was released.

### Emergency Showers

**319.** If there is a risk of substantial contamination of a worker or of a worker's clothing from corrosive or other harmful or hazardous substances, an employer shall provide and maintain an approved and readily accessible means of bathing or showering the worker in lukewarm water.

### Eye Flushing Equipment

**320.** If there is a risk to the eyes of a worker from corrosive or other hazardous substances, an employer shall provide and maintain, at readily accessible locations, approved equipment to flush the eyes of the worker with lukewarm water or another appropriate liquid.

### Flammable, Unstable, Highly Reactive and Corrosive Substances

**321.** (1) If the storage of a flammable, oxidizing, corrosive or dangerously reactive chemical substance could endanger a worker, the employer shall ensure that

- (a) the substance is
  - (i) stored in a self-contained enclosure, room or building that is isolated from the work site and any other work sites, and is adequately ventilated, and

- (ii) protected from conditions, including temperature, shock or vibration, that could reduce the stability or increase the potential hazard of the substance;
- (b) subject to sections 326 to 331, a durable, legible sign setting out the harmful characteristics of the substance and the precautions to be taken for storage is posted at each entrance to the enclosure, room or building in which the substance is stored; and
- (c) the container in which the substance is kept,
  - (i) subject to sections 326 to 331, is clearly labelled with the name, harmful characteristics and precautions to be taken for the safe storage of the substance or substances,
  - (ii) subject to section 399, is designed, constructed and maintained to contain the substance securely and to be resistant to the substance and any other substances to which the container could be exposed,
  - (iii) is sealed or covered, and
  - (iv) is stored in a manner to protect the container from falls or damage.

(2) If two or more chemical substances, when combined, produce a toxic, corrosive or explosive reaction, an employer shall ensure that the substances are effectively separated and stored to prevent the substances from combining.

PART 22  
HAZARDOUS PRODUCTS AND WORKPLACE HAZARDOUS MATERIALS  
INFORMATION SYSTEM

Interpretation

**322.** In this Part,

"appeal board" means an appeal board appointed under subsection 43(1) of the *Hazardous Materials Information Review Act* (Canada) in relation to appeals relating to the provisions of the *Hazardous Products Act* (Canada); (*commission d'appel*)

"chemical name" means a scientific designation of a material or substance that is made in accordance with the rules of nomenclature of

- (a) the Chemical Abstracts Service, a division of the American Chemical Society,
- (b) the International Union of Pure and Applied Chemistry, or
- (c) a scientific designation of a material or substance that is internationally recognized and that clearly identifies the material or substance; (*denomination chimique*)



"confidential business information" means

- (a) information that, prior to the determination of a claim under section 11 of the *Hazardous Materials Information Review Act* (Canada), is claimed to be confidential business information
  - (i) under section 336 of these regulations, by an employer manufacturing or using a hazardous product, or
  - (ii) under the *Hazardous Materials Information Review Act* (Canada), by a supplier; or
- (b) information with respect to which, under the *Hazardous Materials Information Review Act* (Canada),
  - (i) a claim or portion of a claim for exemption under section 11 of the *Hazardous Materials Information Review Act* (Canada) has been determined valid, and
  - (ii) compliance with the provisions of the *Hazardous Products Act* (Canada) or the *Canada Labour Code* has not been ordered; (*renseignements confidentiels*)

"container" includes a bag, barrel, bottle, box, can, cylinder, drum or similar package or receptacle but does not include a storage tank; (*contenant*)

"fugitive emission" means a gas, liquid, solid, vapour, fume, mist, fog or dust that escapes from process equipment or from emission control equipment or from a product; (*émission fugitive*)

"hazard information" means information on the proper and safe use, storage and handling of a hazardous product and includes information relating to the toxicological properties of the product; (*renseignements sur les dangers*)

"hazardous product" means any product, mixture, material or substance that is classified in accordance with the regulations made under subsection 15(1) of the *Hazardous Products Act* (Canada) in a category or subcategory of a hazard class listed in Schedule 2 of that Act; (*produit dangereux*)

"label" means a group of written, printed or graphic information elements that relate to a hazardous product, which group is designed to be affixed to, printed on or attached to the hazardous product or the container in which the hazardous product is packaged, that meets the requirements set out in the regulations made under subsection 15(1) of the *Hazardous Products Act* (Canada); (*étiquette*)

"safety data sheet" means a safety data sheet as defined in section 2 of the *Hazardous Products Act* (Canada), that meets the requirements set out in the regulations made under subsection 15(1) of that Act; (*fiche de données de sécurité*)

"significant new data" means new data regarding the hazard presented by a hazardous product that

- (a) change its classification in a category or subcategory of a hazard class,
- (b) result in its classification in another hazard class, or
- (c) change the ways to protect against the hazard presented by the hazardous product; (*nouvelles données importantes*)

"supplier" means a supplier as defined in section 2 of the *Hazardous Products Act* (Canada); (*fournisseur*)

"workplace" means a work site. (*lieu de travail*)

### Application

**323.** (1) Subject to this section, this Part applies to employers and workers in respect of hazardous products used, stored and handled at a workplace.

(2) Despite subsection (1), the provisions of this Part with respect to a label and a safety data sheet, do not apply to a hazardous product that is

- (a) an explosive within the meaning of the *Explosives Act* (Canada);
- (b) a cosmetic, device, drug or food, each defined in section 2 of the *Food and Drugs Act* (Canada);
- (c) a pest control product within the meaning of subsection 2(1) of the *Pest Control Products Act* (Canada);
- (d) a nuclear substance as defined in section 2 of the *Nuclear Safety and Control Act* (Canada); or
- (e) a consumer product as defined in section 2 of the *Canada Consumer Product Safety Act*.

(3) Despite subsection (1), this Part does not apply to a hazardous product that is

- (a) wood or a product made of wood;
- (b) tobacco or a tobacco product, each defined in section 2 of the *Tobacco Act* (Canada);
- (c) a manufactured article as defined in section 2 of the *Hazardous Products Act* (Canada);
- (d) being transported or handled under the *Transportation of Dangerous Goods Act* (Canada) or the *Transportation of Dangerous Goods Act*; or
- (e) sold for recycling or recovery or intended for disposal.

### Duty of Employer

**324.** (1) An employer shall ensure that a hazardous product is not used, stored or handled in a workplace unless all of the applicable requirements of this Part are complied with, in respect of

- (a) labels and safety data sheets;
- (b) colour coding, placards and other forms of identification of hazardous products; and
- (c) worker training.

(2) Despite subsection (1), an employer may store a hazardous product in a workplace while actively seeking information required by this Part.

### Worker Training

**325.** (1) An employer shall ensure that a worker who works with or may be exposed to a hazardous product is informed about

- (a) hazard information received from the supplier concerning the hazardous product; and
- (b) further hazard information that the employer is aware of, or ought to be aware of, concerning the use, storage and handling of that hazardous product.

(2) If a hazardous product is produced at a workplace, an employer shall ensure that a worker who works with or may be exposed to that hazardous product is informed about the hazard information that the employer is aware of, or ought to be aware of, concerning the use, storage and handling of that hazardous product.

(3) An employer shall ensure that a worker who works with or may be exposed to a hazardous product is trained in

- (a) understanding the information on a label for the hazardous product and the purpose and significance of the information;
- (b) understanding the information on a safety data sheet for the hazardous product and the purpose and significance of the information;
- (c) procedures for the safe use, storage, handling and disposal of the hazardous product;
- (d) procedures to be followed when fugitive emissions are present; and
- (e) procedures to be followed in case of an emergency involving a hazardous product.

(4) An employer shall ensure that the training required by subsection (3) is developed

- (a) for that employer's workplace; and
- (b) in consultation with the Committee or representative.

(5) An employer shall ensure that

- (a) the training required by subsection (3) results in the worker being able to apply the information as needed to protect the health and safety of that worker or other workers at the workplace; and
- (b) the procedures referred to in paragraphs (3)(c) to (e) are implemented.

(6) An employer, in consultation with the Committee or representative, shall review the training provided to workers in respect of hazardous products not less than once annually, or more frequently if there is a change in work conditions or available hazard information.

#### Identification Program

**326.** (1) An employer shall ensure the safe storage and handling of hazardous waste generated at a workplace, through a program of identification of the hazardous waste and worker training.

(2) The training referred to in subsection (1) must include making readily available to workers hazard information that the employer is aware of, or ought to be aware of, concerning the hazardous waste.

#### Label

**327.** (1) In this section, "bulk shipment" means a shipment of a hazardous product that is contained in any of the following, without intermediate containment or intermediate packaging:

- (a) a vessel that has a water capacity equal to or exceeding 450 L;
- (b) a freight container, road vehicle, railway vehicle or portable tank;
- (c) the hold of a ship;
- (d) a pipeline.

(2) An employer shall ensure that a hazardous product or the container of a hazardous product received from a supplier is labelled with a label, unless exempted from doing so under any other enactment.

(3) Subject to section 336, if a hazardous product remains in the container received from a supplier, an employer shall not remove, deface, modify or alter the label, unless the removal of the label is necessary because

- (a) the container has a volume not exceeding 3 mL; and
- (b) the label interferes with the normal use of the product.

(4) If a label applied to a hazardous product or a container of a hazardous product becomes illegible or is accidentally removed from the hazardous product or the container, the employer shall replace the label with a new label, unless

- (a) the container has a volume not exceeding 3 mL; and
- (b) the label interferes with the normal use of the product.

(5) If a hazardous product is imported and received without a label, or with a label that does not comply with the *Hazardous Products Regulations*, SOR/2015-17, the employer shall affix a workplace label that meets the requirements of those regulations.

(6) If an employer receives a bulk shipment or an unpackaged hazardous product, he or she shall affix a label to the container of the hazardous product or to the hazardous product.

(7) An employer shall update labels or container information when a supplier provides the employer with significant new data in respect of the hazardous product.

#### Label for Employer-produced Products

**328.** (1) This section does not apply to a fugitive emission or to an intermediate product undergoing reaction within a reaction or process vessel.

(2) If an employer produces a hazardous product, he or she shall, subject to these regulations and Part 5 of the *Hazardous Products Act* (Canada), ensure that a label in respect of that product is applied in accordance with Part 3 of the *Hazardous Products Regulations*, SOR 2015-17.

(3) An employer shall as soon as is reasonably possible, update the label referred to in subsection (2) if new significant data becomes available.

#### Label for Decanted Products

**329.** (1) If a hazardous product is in a container other than the container in which the hazardous product was received from a supplier, an employer shall ensure that a label is applied to the container.

(2) Subsection (1) does not apply to a portable container that is filled directly from a container that has a label applied to it, if all of the hazardous product in the portable container is required for immediate use or

- (a) the hazardous product is
  - (i) under the control of, and used exclusively by, the worker who filled the portable container, and
  - (ii) used only during the shift in which the portable container was filled; and
- (b) the content of the container is clearly identified.

### Identification of a Hazardous Product in Piping Systems and Vessels

**330.** (1) This section applies if a hazardous product is contained in or transferred by means of

- (a) a pipe;
- (b) a piping system, including valves;
- (c) a process vessel;
- (d) a reaction vessel; or
- (e) a tank car, tank truck, ore car, conveyor belt or similar conveyance.

(2) An employer shall ensure the safe use, storage and handling of a hazardous product through the use of

- (a) labels and safety data sheets;
- (b) colour coding, placards and other forms of identification of hazardous products; and
- (c) worker training.

### Placard Identifiers

**331.** (1) This section applies if a hazardous product is

- (a) not in a container;
- (b) in a container or form intended for export; or
- (c) in a container that is intended to contain the hazardous product for sale or disposition, and the container is not yet labelled but is to be labelled under section 328.

(2) An employer meets the requirements under subsections 326 to 328 if he or she posts a placard that

- (a) discloses the information required for a label; and
- (b) is of such size and in such a location that the information contained on it is conspicuous and legible to workers.

### Laboratory and Sample Labels

**332.** (1) In this section,

"laboratory sample" means a sample of a hazardous product that is packaged in a container that contains less than 10 kg of the product and that is intended solely to be tested in a laboratory, but does not include a hazardous product that is to be used

- (a) by the laboratory for testing other products, mixtures, materials or substances, or
- (b) for educational or demonstration purposes; (*échantillon pour laboratoire*)

"supplier identifier" means, with respect to a hazardous product, the name of the supplier of the hazardous product. (*identificateur du fournisseur*)

(2) If a laboratory sample that is classified only in the category of "Biohazardous Infectious Materials – Category 1" under the *Hazardous Products Regulations*, SOR/2015-17, and is the subject of a labelling exemption under subsection 5(5) of those regulations, a label provided by the supplier and affixed to the container meets the requirements of section 327 if the label

- (a) provides the chemical name or generic chemical name of any material that is in the sample and that is classified as a biohazardous infectious material, if known by the supplier; and
- (b) contains the statement:

"Hazardous Laboratory Sample. For hazard information or in an emergency, call/Échantillon pour laboratoire de produit dangereux. Pour obtenir des renseignements sur les dangers ou en cas d'urgence, composez",

followed by an emergency telephone number for the purpose of obtaining the information that must be provided on the safety data sheet of the hazardous product.

(3) Subject to subsection (4), if a laboratory sample is subjected to a transfer of possession for a specific purpose, without transferring ownership under subsection 5(6) of the *Hazardous Products Regulations*, SOR/2015-17, a label provided by the supplier and affixed to the container meets the requirements of section 327 if the label

- (a) discloses the chemical name or generic chemical name of each substance in the sample and that is a hazardous product that is present above the concentration limit, if known; and
- (b) contains the statement:

"Hazardous Laboratory Sample. For hazard information or in an emergency, call/Échantillon pour laboratoire de produit dangereux. Pour obtenir des renseignements sur les dangers ou en cas d'urgence, composez",

followed by an emergency telephone number for the purpose of obtaining the information that must be provided on the safety data sheet of the hazardous product.

(4) The laboratory sample referred to in subsection (3) must be

- (a) a laboratory sample for which the chemical name and concentration of the hazardous product or its ingredients are not known; or
- (b) a laboratory sample in respect of which the supplier has not offered or exposed the hazardous product for transfer of ownership.

(5) An employer is exempt from section 327 if a hazardous product is produced in his or her laboratory and

- (a) the hazardous product is intended by the employer solely for evaluation, analysis or testing for research and development;
- (b) the hazardous product is not removed from the laboratory;
- (c) the hazardous product is clearly identified through a combination of
  - (i) modes of identification that are visible to workers at the workplace, and
  - (ii) worker training; and
- (d) the employer ensures that the mode of identification and worker training used enables workers to readily identify the hazardous product and obtain
  - (i) the information required on a safety data sheet, if one has been produced, or
  - (ii) any other information that is necessary for the safe use, storage and handling of the hazardous product.

**333.** (1) Subject to subsection (4), an employer who acquires a hazardous product for use or handles or stores a hazardous product shall obtain a safety data sheet, with respect to that hazardous product, from the supplier.

(2) If a safety data sheet obtained from a supplier under subsection (1) is more than three years old, an employer shall, if possible, obtain from the supplier an up-to-date safety data sheet with respect to that hazardous product.

(3) If an employer is unable to obtain an up-to-date safety data sheet from a supplier under subsection (2), the employer shall add to the existing safety data sheet new hazard information or significant new data applicable to the hazardous product on the basis of the ingredients disclosed in the existing safety data sheet or label.

(4) If a supplier is exempted by the *Hazardous Products Regulations*, SOR/2015-17, from the requirement to provide a safety data sheet for a hazardous product, an employer is exempt from subsections (1) through (3).

**334.** (1) This section does not apply to a fugitive emission or to an intermediate product undergoing reaction within a reaction or process vessel.

(2) If an employer produces a hazardous product, he or she shall, subject to sections 337 and 338 and Part 5 of the *Hazardous Products Act* (Canada) and the *Hazardous Materials Information Review Act* (Canada), prepare a safety data sheet in respect of that product in accordance with Part 4 of the *Hazardous Products Regulations*, SOR 2015-17.

(3) An employer shall, as soon as is reasonably possible, update the safety data sheet referred to in subsection (2) if significant new data becomes available.



### Availability of Safety Data Sheets

**335.** (1) An employer shall ensure that a copy of a safety data sheet is made readily available

- (a) to workers who could be exposed to the hazardous product; and
- (b) to the Committee or representative.

(2) If a hazardous product is received at a laboratory and the supplier has provided a safety data sheet, an employer shall ensure that a copy of the safety data sheet is readily available in the laboratory to workers.

(3) If a hazardous product is received or produced at a laboratory and the employer has produced a safety data sheet, the employer shall ensure that the safety data sheet is readily available in the laboratory to workers.

(4) A safety data sheet may be made available on a computer terminal if the employer

- (a) keeps the terminal in active working order;
- (b) makes the safety data sheet readily available on the request of a worker; and
- (c) provides training in accessing computer-stored safety data sheets to workers and to members of the Committee or the representative.

### Exemption from Disclosure

**336.** (1) In this section,

"CAS registry number" means the identification number assigned to a chemical by the Chemical Abstracts Service, a division of the American Chemical Society; (*numéro d'enregistrement CAS*)

"Chief Appeals Officer" means the Chief Appeals Officer as defined in subsection 10(1) of the *Hazardous Materials Information Review Act* (Canada); (*agent d'appel en chef*)

"Chief Screening Officer" means the Chief Screening Officer as defined in subsection 10(1) of the *Hazardous Materials Information Review Act* (Canada); (*agent de contrôle en chef*)

"Minister" means the Minister as defined in subsection 10(1) of the *Hazardous Materials Information Review Act* (Canada); (*Ministre*)

"mixture" means a combination of, or a solution that is composed of, two or more ingredients that, when they are combined, do not react with each other, but excludes any such combination or solution that is a substance; (*mélange*)

"product identifier" means, in respect of a hazardous product, the brand name, chemical name, common name, generic name or trade name; (*identificateur de produit*)

"substance" means any chemical element or chemical compound that is in its natural state or that is obtained by a production process, whether alone or together with

- (a) any additive that is necessary to preserve the stability of the chemical element or chemical compound,
  - (b) any solvent that is necessary to preserve the stability or composition of the chemical element or chemical compound, or
  - (c) any impurity that is derived from the production process.
- (*substance*)

(2) The Minister

- (a) is conferred with and assigned the powers and functions of the Chief Screening Officer and Chief Appeals Officer, in relation to the review of claims for exemption and to appeals of those reviews under this section; and
- (b) may designate any individual as the Chief Screening Officer and any other individual as Chief Appeals Officer.

(3) If an employer considers information about a hazardous product to be confidential business information, he or she may file with the Minister a claim for exemption under section 11 of the *Hazardous Materials Information Review Act* (Canada) from the requirement under these regulations to disclose either directly or indirectly any of the following information:

- (a) in the case of a material or substance that is a hazardous product,
  - (i) the chemical name of the material or substance,
  - (ii) the CAS registry number, or any other unique identifier, of the material or substance, and
  - (iii) the chemical name of any impurity, stabilizing solvent or stabilizing additive that is present in the material or substance, that is classified in a category or subcategory of a health hazard class under the *Hazardous Products Act* (Canada) and that contributes to the classification of the material or substance in the health hazard class under that Act;
- (b) in the case of an ingredient that is in a mixture that is a hazardous product,
  - (i) the chemical name of the ingredient,
  - (ii) the CAS registry number, or any other unique identifier, of the ingredient, and
  - (iii) the concentration or concentration range of the ingredient;
- (c) in the case of a material, substance or mixture that is a hazardous product, the name of any toxicological study that identifies the material or substance or any ingredient in the mixture;
- (d) the product identifier;

- (e) information about a hazardous product, other than the product identifier, that constitutes a means of identification; and
- (f) information that could be used to identify a supplier of a hazardous product.

(4) Information that is claimed as confidential business information is exempt from disclosure from the time a claim is filed under subsection (3) until

- (a) the claim is dismissed; or
- (b) three years have passed after the claim is declared to be valid under the *Hazardous Materials Information Review Act* (Canada).

(5) An employer who files a claim under subsection (3) shall disclose on any required safety data sheet, label, placard or other form of identification

- (a) the date that the claim for exemption was filed; and
- (b) the registry number assigned to the claim under section 10 of the *Hazardous Materials Information Review Regulations*, SOR/88-456.

(6) The requirements of subsection (5) apply,

- (a) in the case of a decision that was rendered by a screening officer under subsection 15(1) of the *Hazardous Materials Information Review Act* (Canada), until the earlier of
  - (i) the day that the proceedings in respect of the claim are concluded, or
  - (ii) the day that the decision rendered by the screening officer expires; or
- (b) in any other case, 30 days after the day that the proceedings in respect of the claim are concluded.

(7) The requirements of subsection (5) apply,

- (a) in the case of an order that was made by a screening officer under subsection 16(1) or subsection 17(1) of the *Hazardous Materials Information Review Act* (Canada), until the earlier of
  - (i) the day that the proceedings in respect of the claim are concluded, or
  - (ii) the day that the order made by the screening officer expires; or
- (b) in any other case, 30 days after the day that the proceedings in respect of the claim are concluded.

(8) The requirements of subsection (5) apply,

- (a) in the case of an undertaking sent to the claimant by a screening officer under subsection 16.1(1) of the *Hazardous Materials Information Review Act* (Canada) and signed and returned by the claimant to the screening officer under subsection 16.1(2) of that Act, until the earlier of

- (i) the day that the proceedings in respect of the claim are concluded, or
  - (ii) the day that the undertaking expires; or
- (b) in any other case, 30 days after the day that the proceedings in respect of the claim are concluded.

(9) An employer who receives notice of a decision made under the *Hazardous Materials Information Review Act* (Canada) that his or her claim or a portion of his or her claim for exemption from a requirement to disclose information in respect of a hazardous product is valid, shall, in respect of the sale or importation of the hazardous product, provide on any required safety data sheet, label, placard or other form of identification, the following information:

- (a) a statement that an exemption has been granted;
- (b) the date of the decision granting the exemption;
- (c) the registry number assigned under the *Hazardous Materials Information Review Act* (Canada) to the claim.

(10) A claimant or affected party may appeal any decision or order made under this section by filing a statement of appeal with the Minister in the manner set out in section 20 of the *Hazardous Materials Information Review Act* (Canada).

#### Omissions from Safety Data Sheet

**337.** An employer who claims an exemption under section 336 shall not omit from a safety data sheet he or she is required to provide under this Part, for the period of time that applies as set out in subsections 336(3), (5) or (7), any information other than the information that is the subject of the claim.

#### Confidentiality of Information

**338.** (1) Subject to this section, a person who has obtained information from a supplier or employer for the purposes of section 336 shall not knowingly, without the written consent of the person who provided the information,

- (a) communicate the information, or allow it to be communicated, to any person; or
- (b) allow any person to inspect or to have access to any book, record, writing or other document containing that information.

(2) A person who has obtained information from a supplier or employer for the purposes of section 336 may communicate the information or allow it to be communicated, or allow inspection of or access to any book, record, writing or other document containing that information for the purposes of the administration or enforcement of this Part.

(3) A person who has obtained information from a supplier or employer for the purposes of section 336 may communicate the information or allow it to be communicated, or allow inspection of or access to any book, record, writing or other document containing that information, to or by a public officer, for the purposes of the administration or enforcement of the Act and these regulations.

(4) A person who has obtained information from a supplier or employer for the purposes of section 336 may communicate or disclose the information or cause it to be communicated or disclosed to a medical professional who requests that information for the purpose of making a medical diagnosis of, or rendering medical treatment to, a person in an emergency.

(5) A person who obtains information under subsection (3) or (4) shall not knowingly disclose that information to any other person or knowingly allow any other person to have access to that information, except as may be necessary for the purposes mentioned in subsection (3) or (4), as applicable.

## PART 23 RADIATION

### Interpretation

**339.** In this Part,

"absorbed dose" means, with respect to a medium, the ionizing radiation energy absorbed per unit mass, expressed in grays; (*dose absorbée*)

"committed" means, in respect of a dose of radiation, received by an organ or tissue of the body of an individual from intake of a radioactive substance, other than radon or radon progeny, during the 50 years immediately following the intake; (*engagée*)

"effective dose" means the sum of the products, in sieverts, obtained by multiplying the equivalent dose, as defined in subsection 340(1), committed to each organ or tissue set out in column 1 of Schedule S by the weighting factor set out in column 2 for that item; (*dose efficace*)

"ionizing radiation" means an atomic or subatomic particle or an electromagnetic wave emitted or produced, directly or indirectly, by a machine or radioactive isotope and having sufficient kinetic or quantum energy to produce ionization; (*rayonnement ionisant*)

"ionizing radiation equipment" means a device capable of emitting ionizing radiation, but does not include

- (a) equipment operated at less than 15 kV that produces radiation and that is not designed principally to produce useful radiation,

- (b) equipment that is in storage, in transit or not being used, or equipment operated in such a manner that it cannot produce radiation, or
- (c) a radioactive substance; (*appareil produisant des rayonnements ionisants*)

"ionizing radiation installation" means the whole or a part of a building or other place where ionizing radiation equipment is manufactured, used or placed or installed for use; (*installation produisant des rayonnements ionisants*)

"non-ionizing radiation" includes energy propagated in the form of

- (a) electromagnetic waves in a frequency range where ionization does not occur, or
- (b) ultrasonic waves having frequencies above 10 kHz; (*rayonnement non ionisant*)

"non-ionizing radiation equipment" means equipment that is capable of emitting non-ionizing radiation; (*appareil produisant des rayonnements non ionisants*)

"non-ionizing radiation installation" means the whole or a part of a building or other place where non-ionizing radiation equipment is manufactured, used or placed or installed for use; (*installation produisant des rayonnements non ionisants*)

"occupational worker" means a worker who

- (a) is exposed to radiation, and
- (b) is likely to receive radiation exposure in excess of exposure levels or dose limits that are specified for members of the public; (*travailleur du secteur nucléaire*)

"radiation" includes ionizing radiation and non-ionizing radiation. (*rayonnement*)

#### Dose Limits

**340.** (1) In this section, "equivalent dose" means the product, in sieverts, obtained by multiplying the absorbed dose of radiation and the applicable radiation weighting factor set out in Schedule T.

(2) An employer who requires or permits the use of ionizing radiation equipment shall ensure that the effective dose committed to an individual described in column 1 of Schedule U during a period set out in column 2 of that Schedule is as low as is reasonably achievable with economic and social factors taken into consideration, and does not exceed the effective dose set out in column 3 of that Schedule.

(3) If the effective dose received by an occupational worker in a one-year dosimetry period exceeds 20 mSv, the employer who requires or permits the use of the ionizing radiation equipment shall submit to the Chief Safety Officer a written report

explaining in full the circumstances in which the dose arose and summarizing the steps to be taken to minimize the possibility of similar doses arising in the future.

(4) An employer who requires or permits the use of ionizing radiation equipment shall ensure that the equivalent dose received by and committed to an organ or tissue set out in column 1 of Schedule V of an individual described in column 2 of that item, during the period set out in column 3 of that item, does not exceed the equivalent dose set out in column 4 of that item.

#### Effective Dose Limits

**341.** (1) In this section,

"ALI" or "annual limit on intake" means the activity, in becquerels of a radionuclide that will deliver an effective dose of 20 mSv during

- (a) the 50-year period after it is taken into the body of an individual 18 years of age or older, or
- (b) the period beginning at intake and ending at age 70 after it is taken into the body of an individual less than 18 years of age; (*ALI ou limite annuelle d'incorporation*)

"E" means the portion of the effective dose, in millisieverts

- (a) received by an individual from sources outside the body including those received from X-rays, Canadian Nuclear Safety Commission (CNSC) licensed activities or other sources of radiation arising from human activity, and
- (b) received by and committed to the individual from sources inside the body, measured directly or from excreta; (*E*)

"I" means the activity, in becquerels, of any radionuclide that is taken into the body, excluding radon progeny and the activity of other radionuclides accounted for in the determination of E; (*I*)

"Rn" means the average annual concentration in the air, in becquerels per cubic metre, of radon 222 that is attributable to a CNSC licensed activity; (*Rn*)

"RnP" means the exposure to radon progeny in working level months that is attributable to a CNSC licensed activity; (*RnP*)

" $\Sigma I/ALI$ " means the sum of the ratios of I to the corresponding ALI. ( $\Sigma I/ALI$ )

(2) For the purposes of item 1 of Schedule U, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with the following formula:

$$ED = E + 5RnP = 20 \sum \frac{I}{ALI}$$

(3) For the purposes of item 2 of Schedule U, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with the following formula:

$$ED = E + 20 \sum \frac{I}{ALI}$$

(4) For the purposes of item 3 of Schedule U, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with either of the following formulas:

$$(a) \quad ED = E + \frac{Rn}{60} + 20 \sum \frac{I}{ALI};$$

$$(b) \quad ED = E + 4RnP + 20 \sum \frac{I}{ALI}.$$

### Monitoring of Dose

**342.** (1) In this section, "National Dose Registry" means the centralized record-keeping system containing the dose information of nuclear energy workers maintained by Health Canada and referred to in section 19 of the *Radiation Protection Regulations*, SOR/2000-203. (*Fichier dosimétrique national*)

(2) An employer who requires or permits the use of ionizing radiation equipment by an occupational worker shall ensure that the effective dose and equivalent dose received by the worker is systematically determined.

(3) An employer who requires or permits the use of ionizing radiation equipment by an occupational worker shall ensure that the dose of the worker determined by monitoring under subsection (2) is reported to the National Dose Registry and to the Chief Safety Officer not less than once every three months.

(4) Subsection (3) does not apply to a dose of less than 0.25 mSv received by an occupational worker in a period of three months.

(5) For the purpose of assessing compliance with the limits set by these regulations, the current reading entered into the National Dose Registry with respect to an occupational worker is deemed to be the actual dose received by the occupational worker.

(6) A safety officer may require an employer who requires or permits the use of ionizing radiation equipment by an occupational worker, to investigate the exposure of the worker to ionizing radiation and report the results of the investigation to the Chief Safety Officer without delay.



### Monitoring Procedure

**343.** If an occupational worker could receive an effective dose exceeding 1 mSv in a one-year period, the employer who requires or permits the use of the ionizing radiation equipment shall arrange for a thermoluminescent dosimeter to be issued to the worker by a dosimetry service provider licensed under the *Radiation Protection Regulations*, SOR/2000-203.

### Records of Dose

**344.** (1) An employer for whom an occupational worker works or trains shall maintain a separate, cumulative record on a continuous and permanent basis for the worker showing

- (a) the measurements of actual doses of ionizing radiation received, both externally and internally, by the worker for the current one-year and five-year dosimetry periods; and
- (b) the committed doses of ionizing radiation received from radioactive substances deposited within the body of the worker as determined by monitoring or sampling procedures conducted at the work site or from bio-assay procedures.

(2) An employer shall inform each occupational worker of his or her record, maintained under subsection (1), at intervals not exceeding three months.

### Pregnancy of Occupational Worker

**345.** (1) A pregnant occupational worker shall, without delay, inform the employer of the pregnancy.

(2) An employer for whom an occupational worker works or trains shall advise the worker of the obligation under subsection (1).

(3) On being informed by a pregnant occupational worker of a pregnancy, the employer shall, in order to comply with subsection 340(2), reassess and, if necessary, revise the work of the worker so as not to expose the worker to ionizing radiation.

### Ionizing Radiation Installation

**346.** (1) In this section, "substantial alteration" means, in respect of ionizing radiation equipment,

- (a) if the equipment emits a primary beam outside its housing, any alteration or change of position that causes the equipment to be capable of emitting a primary beam in directions other than those for which approval was granted when the plans for the installation were approved;

- (b) an alteration in the shielding properties of the room or other place in which the ionizing radiation equipment is placed or installed;
- (c) an increase in the maximum generating voltage or maximum beam current of ionizing radiation equipment in an installation; and
- (d) the placement or installation of units of ionizing radiation equipment in an ionizing radiation installation in excess of the number of units approved when the plans for installation were approved. (*modification importante*)

(2) A person shall not do any of the following, unless a plan of the proposed installation or proposed alteration has been submitted to and approved in writing by the Chief Safety Officer:

- (a) establish or cause to be established an ionizing radiation installation for any purpose;
- (b) make or cause to be made a substantial alteration in an ionizing radiation installation.

(3) The Chief Safety Officer may withhold approval of a plan submitted under subsection (2) until he or she is satisfied that the ionizing radiation installation is to be constructed or altered in such a manner that reasonable precautions are taken to avoid danger to the health of an individual.

(4) A person shall not use mobile ionizing radiation equipment in a location other than one approved by the Chief Safety Officer.

(5) Subsection (4) does not apply to an employer who requires or permits the use of or to a worker who uses mobile ionizing radiation equipment in medical, dental, chiropractic or other health care facilities for the purpose of making a diagnosis on a patient or used exclusively in a veterinary practice.

#### Periodic Reporting After Alteration or Installation

**347.** (1) An employer who requires or permits the use of ionizing radiation equipment shall, within thirty days of any one of the following events occurring, provide the Chief Safety Officer with a written statement setting forth the particulars of that event:

- (a) ionizing radiation equipment comes under the employer's control;
- (b) ionizing radiation equipment that is under the employer's control undergoes a substantial alteration as defined in subsection 346(1).

(2) An employer who requires or permits the use of ionizing radiation equipment shall provide the Chief Safety Officer, at his or her request, an itinerary, including any updates, stating

- (a) the days when the equipment will be used;
- (b) the locations where the equipment will be used on those days;
- (c) a phone number where the employer can be contacted on the days the equipment is used; and

- (d) any other information that the Chief Safety Officer requires in respect of the equipment.

(3) An employer who requires or permits the use of an ionizing radiation installation or the use of ionizing radiation equipment shall, during the month of January in each year, provide the Chief Safety Officer with a report of ionizing radiation installations and of ionizing radiation equipment stating

- (a) the days when the installations and equipment were used;
- (b) what installations and equipment were used on those days;
- (c) the names of the suppliers and owners of the installations and equipment used; and
- (d) any other information that the Chief Safety Officer requires in respect of the installations and equipment.

#### Manufacture and Use of Ionizing Radiation Equipment

**348.** (1) An employer who requires or permits the use of ionizing radiation equipment or associated apparatus by a worker shall ensure that the equipment or apparatus is manufactured in such a manner that

- (a) an individual is not unnecessarily exposed to ionizing radiation from the equipment or apparatus; and
- (b) an individual in the vicinity of the equipment or apparatus is not exposed to ionizing radiation from that equipment or apparatus exceeding the dose limits referred to in subsection 340(2).

(2) A worker who uses ionizing radiation equipment or associated apparatus shall use the equipment

- (a) in compliance with the manufacturer's or supplier's specifications; and
- (b) in a manner that complies with paragraphs 1(a) and (b).

(3) A worker who uses ionizing radiation equipment or associated apparatus shall ensure that a competent and qualified individual inspects the equipment for safe operating condition and calibration in a manner as set out in the manufacturer's or supplier's specifications.

(4) Nothing in this section limits the liability of a supplier, manufacturer, owner, employer, worker or any other person who alters, repairs, services, maintains or tests ionizing radiation equipment or associated apparatus.

#### Duty of Employer and Worker

**349.** (1) An employer who requires or permits the use of an ionizing radiation installation or use of ionizing radiation equipment by a worker in the diagnosis or treatment of human beings, shall ensure that the worker is

- (a) a duly qualified medical professional with specialized training in radiography;
- (b) a person licensed to practice dentistry under the *Dental Profession Act*, or a dental hygienist or dental therapist as each is defined in the *Dental Auxiliaries Act*;
- (c) a medical radiation technologist or X-ray technician, whose experience and qualifications are approved by the Chief Safety Officer;
- (d) a student who is under the direct supervision of an individual who possesses the qualifications set out in paragraphs (a), (b) or (c); or
- (e) an individual who
  - (i) is trained to carry out the procedures for which the equipment is to be used, and
  - (ii) demonstrates to the satisfaction of the Chief Safety Officer that he or she possesses adequate knowledge of the equipment, the biological effects associated with the equipment's use and the necessary safety procedures.

(2) If an employer requires or permits the use of an ionizing radiation installation or use of ionizing radiation equipment by a worker in the diagnosis or treatment of animals, he or she shall ensure that the worker is

- (a) a veterinary surgeon entitled to practice veterinary surgery under section 5 of the *Veterinary Profession Act*;
- (b) an animal health technician under the direct supervision of a veterinarian; or
- (c) a student under the direct supervision of an individual who possesses the qualification set out in paragraph (a) or (b).

(3) An employer who requires or permits the use of an ionizing radiation installation or use of ionizing radiation equipment by a worker for a purpose other than in the diagnosis or treatment of human beings or animals, shall ensure that worker

- (a) possesses the qualifications or otherwise meets the requirements set out in a code of practice;
- (b) understands the procedures for which the equipment is to be used; and
- (c) possesses the knowledge necessary to adequately manage or control the ionizing radiation installation or ionizing radiation equipment and knowledge of the necessary safety procedures.

(4) An individual shall not operate an ionizing radiation installation or ionizing radiation equipment unless he or she possesses the qualifications set out in subsections (1), (2) or (3).

### Qualifications of Workers

**350.** (1) In this section,

"Safety Code 29" means Health Canada standard *Requirements for the Safe Use of Baggage X-ray Inspection Systems, Safety Code 29* (1993), as amended from time to time; (*Code de sécurité 29*)

"Safety Code 32" means Health Canada standard *Safety Requirements and Guidance for Analytical X-ray Equipment, Safety Code 32* (1994), as amended from time to time; (*Code de sécurité 32*)

"Safety Code 34" means Health Canada standard *Radiation Protection and Safety for Industrial X-ray Equipment, Safety Code 34* (2003), as amended from time to time. (*Code de sécurité 34*)

(2) Safety Code 29, Safety Code 32 and Safety Code 34 are adopted.

(3) A worker shall not use an ionizing radiation installation or ionizing radiation equipment for industrial radiography unless he or she complies with the requirements of Safety Code 34.

(4) A worker shall not use an ionizing radiation installation or ionizing radiation equipment for industrial radiography unless he or she

- (a) has successfully completed the Canadian General Standards Board (CGSB) Canadian Nuclear Safety Commission Exposure Device Operators Examination;
- (b) has successfully completed the equivalent of the CGSB Level 1 Certification Examination in Industrial Radiography; or
- (c) is under the direct supervision and continuous observation of an individual who satisfies the requirements of paragraph (a) or (b).

(5) A worker shall not use an ionizing radiation installation or ionizing radiation equipment for a purpose other than diagnosis or treatment of human beings or animals or for industrial radiography unless he or she complies,

- (a) in the case of baggage X-ray equipment, with the requirements of Safety Code 29; or
- (b) in the case of analytical X-ray equipment, with the requirements of Safety Code 32.

### Maintenance and Inspections

**351.** (1) An employer who requires or permits the use of ionizing radiation equipment and associated apparatus in a health care facility as defined in section 463, shall arrange for the inspection of the equipment and apparatus by a qualified individual in accordance with section 352 to ensure that the equipment and apparatus

- (a) is in safe operating condition; and
- (b) has undergone a radiation calibration.

(2) An employer who requires or permits the use of the equipment and apparatus referred to in subsection (1) shall ensure that, if the equipment and apparatus is not in safe operating condition, or requires a radiation calibration, it is taken out of service, repaired or calibrated without delay.

(3) An employer shall maintain records of inspections, repairs and calibrations of equipment and apparatus conducted under this section.

(4) An individual who conducts an inspection under subsection (1) shall, within 30 days after completing the inspection, submit to the Chief Safety Officer, in an approved form, details of all tests carried out and measurements made in the course of the inspection.

#### Frequency of Inspections

**352.** (1) Subject to subsections (2) to (4), an inspection required under subsection 351(1) must be carried out not less than once each year.

(2) An inspection required under subsection 351(1) must be carried out not less than twice each year if the equipment or associated apparatus is

- (a) other than mobile X-ray equipment or associated apparatus;
- (b) used to perform 5,000 to 10,000 diagnostic examinations per year;
- (c) 15 to 19 years old; or
- (d) equipment or apparatus that has an image intensifier.

(3) An inspection required by subsection 351(1) must be carried out not less than three times each year if the equipment or associated apparatus is

- (a) other than mobile X-ray equipment;
- (b) used to perform more than 10,000 diagnostic examinations per year; or
- (c) 20 years old or older.

(4) In the case of mobile X-ray equipment, an inspection required by subsection 351(1) must be carried out not less than twice each year if the equipment is

- (a) used in a hospital with a capacity exceeding 200 beds; or
- (b) equipped with an image intensifier.

(5) Subject to subsections (6) and (7), an inspection required under subsection 351(1) must be carried out not less than

- (a) once every three years for dental or chiropractic X-ray equipment; and
- (b) once every five years for veterinary X-ray equipment.

(6) An inspection is not required under subsection 351(1) until five years have elapsed from the date of manufacture of the equipment.

(7) If chiropractic X-ray equipment is 15 years old, an inspection required under subsection 351(1) must be carried out not less than once each year.

(8) The approval of the Chief Safety Officer is required if two consecutive inspections referred to in this section are to be carried out at intervals of less than 60 days.

#### Certification of Equipment

**353.** (1) A supplier of ionizing radiation equipment or associated apparatus shall, after the equipment or apparatus is installed or otherwise placed at a work site and before the equipment or apparatus is transferred to the control of an employer, conduct

- (a) radiological safety tests of the equipment or apparatus to ensure the equipment or apparatus is operating in accordance with the manufacturer's specifications; and
- (b) an inspection of the electrical and mechanical components of the equipment or apparatus to ensure that the equipment or apparatus is operating in accordance with the manufacturer's specifications.

(2) A supplier referred to in subsection (1) shall notify the Chief Safety Officer within 30 days after completing the inspection, on an approved form, certifying that the equipment or associated apparatus has been properly installed and can be safely used.

(3) If an employer re-installs non-mobile ionizing radiation equipment or associated apparatus, he or she shall ensure that, on re-installation, the installer completes an inspection of the electrical and mechanical components of the equipment or associated apparatus and ensures that the equipment is operating in accordance with the manufacturer's specifications.

(4) An installer referred to in subsection (3) shall notify the Chief Safety Officer within 30 days after completing the installation of the inspection, on an approved form, certifying that the equipment or associated apparatus has been properly installed and can be safely used.

#### Change of Use

**354.** An employer who requires or permits the use of ionizing radiation equipment shall not require or permit the equipment to be used for any function or purpose other than the function or purpose for which it is intended or was designed, unless the employer first obtains the written approval of a safety officer.

### Modifications to Equipment

**355.** (1) An employer who requires or permits the use of ionizing radiation equipment shall not require or permit modification or alteration of the equipment or the structural shielding of the equipment unless the modification or alteration is approved by

- (a) the equipment manufacturer; or
- (b) a safety officer.

(2) An employer who requires or permits the use of ionizing radiation equipment shall give notice to the Chief Safety Officer of modification or alteration of the structural shielding, not later than 30 days after the modification or alteration is made.

### Display of Radiation Hazard Sign

**356.** If ionizing radiation equipment capable of producing dose rates exceeding 25  $\mu\text{Sv/h}$  is required or permitted by an employer to be operated, the employer shall ensure that

- (a) in the case of a room used solely for medical diagnosis of patients, a sign bearing the word "X-ray" is prominently displayed on each door that gives access to the room;
- (b) in the case of a room that houses analytical, therapy or industrial ionizing radiation equipment, a radiation hazard sign bearing the word "X-ray" or the word "Radiation" and the radiation warning symbol described in section 357 is prominently displayed on each door that gives access to the room; and
- (c) in the case of an open area,
  - (i) a mobile barrier is erected to enclose the area in which a dose rate exceeds 25  $\mu\text{Sv/h}$  per hour could be produced, and
  - (ii) radiation signs referred to in paragraph (b) are placed on the barrier so that not less than one sign is always clearly visible as the area is approached.

### Radiation Warning Symbol

**357.** (1) In this section, "radiation warning symbol" means the trefoil illustrated in Schedule W. (*symbole de danger d'irradiation*)

(2) If an individual uses a radiation warning symbol, he or she shall

- (a) display it as prominently as is possible; and
- (b) ensure that it is of a size that
  - (i) is appropriate for the object to which it is attached,
  - (ii) permits the symbol to be recognized from a safe distance, and
  - (iii) maintains the proportions illustrated in Schedule W.



(3) A radiation warning symbol must be oriented as illustrated in Schedule W, unless it is not reasonably possible to so orient it.

(4) Wording must not be superimposed on the radiation warning symbol.

#### Exposure Limits to Ultraviolet Radiation

**358.** (1) In this section,

"irradiance" means the radiant power incident per unit area expressed in watts per square metre; (*éclairage énergétique*)

"Threshold Limit Values" means American Conference of Governmental Industrial Hygienists (ACGIH) Standard *Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices* (2011), as amended from time to time. (*valeurs limites d'exposition*)

(2) The Threshold Limit Values are adopted.

(3) If a worker could be exposed to ultraviolet radiation from ultraviolet radiation equipment or industrial processes at a work site, the employer who requires or permits the use of the equipment or process shall ensure that exposure from the equipment or industrial processes is limited to levels listed under "Ultraviolet Radiation" of the Threshold Limit Values.

(4) If the spectral composition of the ultraviolet radiation referred to in subsection (3) is not known, the employer who requires or permits the use of the equipment shall ensure that the total radiant exposure of the worker's unprotected eyes or skin in a period of eight hours does not exceed 30 J/m<sup>2</sup>.

(5) For the purposes of subsection (4), an exposure for eight hours to a maximum continuous irradiance of 1 mW/m<sup>2</sup> is deemed to be equal to a total radiant exposure of 30 J/m<sup>2</sup>.

#### Exposure Limits to Ultraviolet Radiation and Photosensitivity

**359.** (1) If an employer requires or permits the use of ultraviolet radiation equipment at a work site where conditions could lead to chemically-induced photosensitivity in a worker, the employer shall ensure that the exposure to ultraviolet radiation of the worker's eyes or skin, in a period of eight hours, does not exceed the values that are recommended by the Chief Safety Officer.

(2) Values recommended by the Chief Safety Officer for the purposes of subsection (1) must not exceed the values referred to in section 358.

(3) If an employer requires or permits the use of ultraviolet radiation equipment and knows that a worker shows inherited photosensitivity to ultraviolet radiation or is under treatment with a photosensitizing drug, the employer shall ensure that

- (a) the worker's exposure to ultraviolet radiation is limited in accordance with the advice of a medical professional; or
- (b) the worker is issued with eye and skin protection that is specified by
  - (i) a medical professional, or
  - (ii) a safety officer.

#### Protection If Exposure Limits Cannot be Followed

**360.** If the exposure limits set out in section 358 and subsection 359(1) cannot be complied with, the employer shall issue to each occupational worker,

- (a) eye and skin protection that is specified by
  - (i) a medical professional, or
  - (ii) a safety officer; and
- (b) if required by a safety officer, an individual monitoring device to evaluate the exposure of the worker to ultraviolet radiation.

#### Laser Classification

**361.** (1) In this section,

"laser" means an optical source that emits coherent, monochromatic radiation from a solid state, gaseous or liquid lasing source; (*laser*)

"Z136.1-2000" means American National Standards Institute (ANSI) standard Z136.1-2000, *Safe Use of Lasers*, as amended from time to time; (*Z136.1-2000*)

"Z136.2-1997 " means American National Standards Institute (ANSI) standard Z136.2-1997, *Safe Use of Optical Fiber Communication Systems Utilizing Laser Diode and LED Sources*, as amended from time to time; (*Z136.2-1997*)

"Z136.3-2004" means American National Standards Institute (ANSI) standard Z136.3-2004, *Safe Use of Lasers in Health Care Facilities*, as amended from time to time. (*Z136.3-2004*)

(2) Z136.1-2000, Z136.2-1997 and Z136.3-2004 are adopted.

(3) An employer who requires or permits the use of a laser or laser device shall ensure that the laser or laser device is installed, operated, labelled and maintained

- (a) in accordance with Z136.1-2000;
- (b) in the case of a laser or laser device that is a medical laser in a health care facility as defined in section 463, in accordance with Z136.3- 2004; and

- (c) in the case of a laser or laser device that is part of an optical fibre communication system utilizing laser diode and light emitting diode sources, in accordance with Z136.2-1997.

### Radio Frequency Electromagnetic Fields

**362.** (1) In this section,

"Safety Code 6" means Health Canada standard *Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, Safety Code 6* (2009), as amended from time to time; (*Code de sécurité 6*)

"Safety Code 25" means Health Canada standard *Guidelines for Limiting Radiofrequency Exposure— Short Wave Diathermy, Safety Code 25* (1983), as amended from time to time; (*Code de sécurité 25*)

"Safety Code 26" means Health Canada standard *Guidelines on Exposure to Electromagnetic Fields from Magnetic Resonance Clinical Systems, Safety Code 26* (1987), as amended from time to time. (*Code de sécurité 26*)

(2) Safety Code 6, Safety Code 25 and Safety Code 26 are adopted.

(3) Subject to subsections (4) and (5), an employer who requires or permits the use of equipment that generates radio frequency fields in the frequency range from 3 kHz to 300 GHz shall ensure that the exposure limits specified in Safety Code 6 are not exceeded.

(4) An employer who requires or permits the use of a short-wave diathermy device that generates a radio frequency electromagnetic field shall ensure that maximum exposure levels specified in Safety Code 25 are not exceeded.

(5) An employer who requires or permits the use of magnetic resonance clinical equipment or systems that generate magnetic fields shall ensure that maximum exposure levels specified in Safety Code 26 are not exceeded.

### Accidental Radiation Exposure

**363.** (1) In this section, "radiation equipment" includes ionizing radiation equipment and non-ionizing radiation equipment. (*appareil produisant des rayonnements*)

(2) An employer who requires or permits the use of radiation equipment shall take reasonable steps to minimize the possibility of unnecessary irradiation of workers and any other individuals.

(3) If operation of radiation equipment or associated apparatus could result in the unnecessary irradiation of a worker or another individual, an employer shall

- (a) minimize the risk of accidental radiation exposure to the individuals; and
- (b) terminate the operation without delay.

(4) An employer who requires or permits the use of radiation equipment shall notify a safety officer in writing within 48 hours if the operation of radiation equipment or associated apparatus

- (a) results in the irradiation of
  - (i) a worker by ionizing radiation to an extent that exceeds 10 mSv, or
  - (ii) a worker or any other individual by ionizing radiation to an extent that exceeds 0.25 mSv; and
- (b) cannot be completely terminated within a period of six hours following the irradiation referred to in paragraph (a).

(5) An employer who requires or permits the use of radiation equipment shall notify a safety officer in writing within 48 hours if the operation of radiation equipment or associated apparatus

- (a) results in the irradiation of a worker or any other individual by non-ionizing radiation to an extent that exceeds the exposure limit set out in section 358, 361 or 362 for that type of radiation; and
- (b) cannot be terminated within a period of six hours.

(6) An employer shall, within 10 days after an irradiation of a worker occurs as described in this section, make a full report to the Chief Safety Officer that states

- (a) the circumstances of the malfunction; and
- (b) the actions taken to eliminate the malfunction from recurring.

(7) An employer who requires or permits the use of radiation equipment shall, without delay, inform the Chief Safety Officer if an injury to an individual is reported to the employer by a medical professional as an injury that is known or suspected to have been caused or exacerbated by exposure of the individual to the radiation equipment or associated apparatus.

## PART 24 ASBESTOS

### Interpretation

**364.** In this Part,

"asbestos" means a manufactured article or other material that contains

- (a) 1% or more asbestos by weight at the time of manufacture, or

- (b) 1% or more asbestos as determined using microscopy, stereo and polarized light, with dispersion staining, in accordance with the National Institute for Occupational Safety and Health, *Manual of Analytical Methods, Method 9002, Issue 2*, as amended from time to time; (*amiante*)

"asbestos-containing material" means material that contains or is likely to contain asbestos; (*matériau amiantifère*)

"asbestos dust" means dust that consists of or contains asbestos fibres that are likely to become airborne; (*poussière d'amiante*)

"asbestos process" means an activity that could release asbestos dust including

- (a) the sawing, cutting or sanding of asbestos-containing materials,
- (b) the repair, maintenance, replacement or removal of surfaces of asbestos-containing materials,
- (c) the cleaning or disposal of asbestos-containing materials,
- (d) the mixing or application of asbestos shorts, cements, grouts, putties or similar compounds,
- (e) the storing or conveyance of asbestos-containing materials, and
- (f) the demolition of structures that use asbestos-containing materials; (*travaux d'amiante*)

"asbestos surface" means the surface of an object that contains an asbestos-containing material; (*revêtement d'amiante*)

"friable" means material that, when dry, is or can be crumbled, pulverized or powdered by hand pressure; (*friable*)

"high risk asbestos process" means an asbestos process as described in Part A of Schedule X and includes an asbestos abatement project. (*travaux d'amiante à risque élevé*)

#### Application of Part

**365.** This Part applies to a work site where asbestos dust is likely to be released into the atmosphere and workers could be present.

#### Prohibition of Crocidolite

**366.** A person shall not install crocidolite or a mixture containing crocidolite.

#### Prohibition of Spraying

**367.** An individual shall not spray asbestos-containing materials.

### Identification of Asbestos-Containing Materials

**368.** (1) An employer shall identify and keep a written record of the following materials that the employer knows or could reasonably be expected to know are present at a work site:

- (a) all friable, exposed asbestos-containing materials;
- (b) all friable, non-exposed accessible asbestos-containing materials;
- (c) all asbestos-containing pipe, boiler and duct insulating materials.

(2) Any material likely to contain asbestos is deemed to be asbestos-containing material for the purposes of this Part until the material is determined to be asbestos-free.

(3) An employer shall, without delay, identify the presence at a work site of all asbestos-containing material that is damaged or in poor repair and is likely to release asbestos dust into the atmosphere.

(4) An employer may delegate the identification of asbestos-containing materials or the determination of materials being asbestos-free to a competent individual.

(5) An employer shall make a copy of the records referred to in subsections (1) and (3) available for reference by the Committee or representative and the workers.

### Labelling and Placarding

**369.** (1) If workers have access to asbestos-containing materials, an employer shall ensure that

- (a) the asbestos-containing materials are clearly and conspicuously labelled as asbestos-containing materials, or as asbestos if identified as asbestos;
- (b) the presence and location of the asbestos-containing materials are clearly indicated on a placard that is posted in a conspicuous location as close as possible to the asbestos-containing materials; and
- (c) the presence and location of the asbestos-containing materials are clearly indicated on a map or plan that is readily available to the workers.

(2) An employer shall ensure that a label, placard, map or plan required by subsection (1) contains a warning of the danger to health from taking asbestos fibres into the body.

(3) An employer shall provide to workers and other individuals at a work site all relevant information from the record kept under subsection 368(1) about any material referred to in subsection 368(2) that is likely to be disturbed and could release asbestos dust.

### Inspection

- 370.** (1) An employer shall ensure that all friable asbestos-containing material and all sprayed-on asbestos surfaces at a work site are
- (a) regularly inspected by the employer; and
  - (b) inspected not less than once each year by a competent individual to confirm that the material is not releasing, and is not likely to release, asbestos dust into the atmosphere.
- (2) An employer shall keep a written record of the annual inspection referred to in paragraph (1)(b) and make a copy of the record readily available to workers at the work site.

### Asbestos Surfaces

- 371.** An employer shall ensure that
- (a) asbestos surfaces are kept in good condition;
  - (b) repairs and sealing necessary to prevent the breaking-off of asbestos or the release of asbestos dust from an asbestos surface are done without delay;
  - (c) asbestos surfaces are not disturbed for the purpose of maintenance, replacement, removal or repair until the surfaces are thoroughly wetted throughout the entire thickness; and
  - (d) if it is not possible to comply with paragraph (c),
    - (i) the asbestos surfaces are kept wet while the surfaces are being disturbed, or
    - (ii) effective means are used to capture, at source, dust created by the disturbance.

### Asbestos Processes

- 372.** (1) An employer shall
- (a) ensure that asbestos processes are carried out in a manner that prevents, to the extent that is reasonably possible, the release of asbestos dust into the atmosphere;
  - (b) develop, in consultation with the Committee or representative, an asbestos control plan that protects the health and safety of workers in the event of the dispersal of asbestos dust into the atmosphere at a work site; and
  - (c) implement the asbestos control plan developed under paragraph (b).
- (2) A plan developed under paragraph (1)(b) must be in writing and include
- (a) the emergency procedures to be used in case of an uncontrolled release of asbestos, including

- (i) the means to protect exposed workers,
- (ii) the methods to confine and control the release of asbestos, and
- (iii) the decontamination procedures to be used;
- (b) the asbestos processes that workers could undertake;
- (c) the training of workers in asbestos processes the workers could be required or permitted to undertake;
- (d) the methods to control the release of asbestos dust;
- (e) the personal protective equipment that workers could be required to use;
- (f) the decontamination procedures for
  - (i) the work site, and
  - (ii) the workers who undertake asbestos processes; and
- (g) the inspection and maintenance schedule for all asbestos-containing materials.

(3) An employer shall make a copy of the plan developed under paragraph (1)(b) readily available to workers at the work site.

- (4) If an asbestos process is undertaken, an employer shall ensure that
- (a) the area is effectively isolated or otherwise enclosed to prevent the escape of asbestos dust to any other part of the work site;
  - (b) a warning notice is conspicuously displayed indicating that asbestos work is in progress;
  - (c) all asbestos-containing materials removed are placed in appropriate receptacles that are impervious to asbestos and that are clearly labelled "Asbestos"; and
  - (d) the receptacles referred to in paragraph (c) are handled and transported in a manner that will protect them from physical damage.

#### Ventilation Equipment

- 373.** (1) If exhaust ventilation equipment is used to contain asbestos dust, an employer shall ensure that the equipment is
- (a) equipped with a HEPA filter;
  - (b) inspected regularly for defects;
  - (c) maintained; and
  - (d) certified by a competent individual not less than once each year as being able to function safely and effectively.

(2) If exhaust ventilation equipment will exhaust into the interior of a work site that is occupied by workers, an employer shall ensure that the equipment is tested in an approved manner by a competent individual before beginning an asbestos process to ensure that the equipment is able to function safely and effectively.



### Personal Protective Equipment

- 374.** (1) If effective local exhaust ventilation equipment is not used and an asbestos process results in the production of asbestos dust, an employer shall ensure that each worker who could be exposed is provided with and uses
- (a) an approved respiratory protective device that is appropriate to the level of risk of the asbestos process and that meets the requirements of Part 7; and
  - (b) approved protective clothing that, when worn, will exclude asbestos dust.
- (2) An employer shall ensure that protective clothing is
- (a) disposed of as asbestos waste after use in accordance with section 375; or
  - (b) kept, maintained and cleaned in a safe manner each time it is used.

### Asbestos Waste

- 375.** (1) Subject to subsection (3), an employer shall ensure that asbestos waste or dust produced at a work site is cleaned away promptly, and not less than once each day, by vacuum cleaning equipment equipped with a HEPA filter to prevent the escape of asbestos dust into the air or, if vacuum cleaning is not possible, by wet methods.
- (2) An employer shall ensure that the vacuum cleaning equipment is
- (a) inspected regularly for defects;
  - (b) maintained; and
  - (c) certified by a competent individual not less than once each year as being able to function safely and effectively.
- (3) Subsection (1) does not apply to vacuum cleaning equipment used within an effectively isolated enclosure that is being used to control the release of asbestos dust.
- (4) An employer shall ensure that workers who work in the disposal of asbestos wastes are adequately trained in the safe means of handling those wastes and the proper disposal of those wastes in a manner that will not create a hazard to the health or safety of workers or other individuals at the disposal site.

### Warning of Health Risks

- 376.** An employer shall ensure that workers who are likely to work in an asbestos process or are likely to be exposed to asbestos dust are informed that
- (a) the inhalation of asbestos could cause
    - (i) pneumoconiosis,
    - (ii) lung cancer, or
    - (iii) mesothelioma; and

- (b) the risk of injury to health caused by the inhalation of asbestos is increased by smoking.

### Training

**377.** (1) An employer shall ensure that workers who could be exposed to asbestos dust resulting from an asbestos process are provided with training in the safe handling of asbestos that is appropriate to the level of risk of the asbestos process as set out in Schedule X.

(2) A worker shall not work in an asbestos process unless the worker has completed the training provided under subsection (1).

### High Risk Asbestos Processes

**378.** (1) If a high risk asbestos process is in progress or has been completed, an employer shall ensure that workers are not required or permitted to enter the affected area without an approved respiratory protective device.

(2) Notwithstanding subsection (1), an employer may require or permit workers to enter an affected area without approved respirators if a competent individual determines

- (a) there are no visible signs of debris in that area; and
- (b) air monitoring verifies that airborne asbestos fibre concentrations are less than 0.01 fibres per cubic centimetre of air.

### Medical Examinations

**379.** (1) This section applies to a worker who regularly works in an asbestos process.

(2) Not less than once every two years and if a worker consents, the employer shall

- (a) arrange for the worker to have a medical examination during the worker's normal working hours; and
- (b) reimburse the worker for any part of the cost of the medical examination that the worker cannot recover.

(3) If a worker cannot attend a medical examination referred to in subsection (2) during the worker's normal working hours, an employer shall credit the worker's attendance at the examination as time at work and ensure that the worker does not lose pay or benefits.

(4) A medical examination arranged under subsection (2) must include

- (a) a comprehensive medical history and physical examination with special attention to the respiratory system;
- (b) lung function tests, including forced vital capacity and forced expiratory volume at one second; and

- (c) any further medical investigations that are necessary for the diagnosis of an asbestos-related disease.

PART 25  
SILICA AND ABRASIVE BLASTING

Interpretation

**380.** In this Part,

"abrasive blasting" means the cleaning, smoothing, roughening or removing of part of the surface of an article by the use of a jet of sand, metal shot, grit or other material; (*décapage par projection d'abrasif*)

"blasting enclosure" means a chamber, barrel, cabinet or other similar enclosure designed for the purpose of the abrasive blasting of articles; (*enceinte de décapage*)

"silica flour" means material produced by the milling and grinding of siliceous rocks or other siliceous substances; (*farine de silice*)

"silica process" means a process that could release uncombined silica, as defined in subsection 389(1), in a crystalline form in concentrations likely to exceed the contamination limits set out in Schedule O, such as

- (a) sandblasting as defined in subsection 390(1),
- (b) the freeing of the castings from adherent sand or other substance containing more than 5% uncombined silica, such as the removal of cores and the general smoothing of the castings when that freeing is done, but excluding the freeing of castings from scale formed during annealing or heat treatment,
- (c) the abrasive blasting, grinding or dressing of a surface containing more than 5% uncombined silica, including the engraving or abrasive cleaning of gravestones or structures,
- (d) the getting, cutting, splitting, crushing, grinding, milling, drilling, sieving or other mechanical manipulation of gravel or other siliceous stone or rock containing more than 5% uncombined silica,
- (e) a process where silica flour is used, or
- (f) the manufacture of silica-containing bricks and the dismantling or repair of silica-containing refractory linings of furnaces. (*travaux de silice*)

### Application of Part

**381.** This Part applies to a work site where a silica process is used.

### Warning of Workers

**382.** An employer shall warn workers who are likely to be engaged in a silica process or are likely to be exposed to silica dust of the dangers to health from the inhalation of dust containing silica.

### Cleaning of Blasting Equipment

**383.** An employer shall take reasonable steps to prevent the inhalation of silica dust or the dissemination of silica dust into the air at the work site during the cleaning or maintenance of blasting equipment, blasting enclosure, ventilating system or separating equipment.

### Cleaning of Work Sites

**384.** An employer shall ensure that a work site, where dust from a silica process could affect the health or safety of a worker, is regularly cleaned using a vacuum that has a HEPA filter on the exhaust or, if such cleaning is not reasonably possible, by using wet methods.

### Silica Processes Other than Abrasive Blasting

**385.** (1) If a silica process other than abrasive blasting is carried on, an employer shall ensure that the entry of dust released into the air, where workers could be present, is prevented to the extent that is reasonably possible, by the provision of

- (a) total or partial enclosure of the process;
- (b) effective local exhaust ventilation;
- (c) jets or sprays of a suitable wetting agent; or
- (d) any other method that provides equivalent protection to the workers.

(2) An employer shall ensure that an enclosure, apparatus or exhaust-ventilation equipment provided under subsection (1) is

- (a) maintained in accordance with subsections 71(2) and (3);
- (b) inspected daily when in use; and
- (c) certified as safe and effective by a competent person not less than once each year.

(3) An employer shall ensure that air discharged from a ventilation system provided under subsection (1) is not recirculated in the work site unless the air is passed through an effective dust removal system equipped with a device that will provide a warning to workers when the system is not working effectively.

### Isolation from Air Containing Dust

**386.** If it is not reasonably possible to prevent the entry into the air of dust from a silica process, an employer shall, if reasonably possible, provide for the isolation of workers from the air containing the dust.

### Personal Protective Equipment

**387.** (1) An employer shall provide, and require a worker to wear, a respiratory protective device and other personal protective equipment that meet the requirements of Part 7 if

- (a) the protective measures required by sections 385 and 386 are not reasonably possible; or
- (b) the worker carries out cleaning and maintenance work and could be exposed to dust from a silica process.

(2) For workers engaged in abrasive blasting, an employer shall provide and maintain approved blasting hoods supplied with air

- (a) of a volume of not less than 170 L per minute at a pressure of not more than 140 kPa; and
- (b) that is clean and at a reasonable temperature.

(3) For workers who could be exposed to dust resulting from abrasive blasting, an employer shall provide and maintain respiratory protective devices that meet the requirements of Part 7.

### Blasting Enclosures

**388.** (1) An employer shall ensure that a blasting enclosure is

- (a) constructed, operated and maintained to prevent the escape of dust;
- (b) provided with an effective, dust-extraction system, that is operated continuously whenever the blasting enclosure is in use, whether or not abrasive blasting is actually taking place; and
- (c) provided with effective equipment for separating the abrasive from the dust, to the extent that is reasonably possible.

(2) An employer shall ensure that an abrasive is not reintroduced into a blasting apparatus until the abrasive has been separated from the dust.

- (3) An employer shall ensure that
- (a) a blasting enclosure is inspected daily when in use;
  - (b) a blasting enclosure, the equipment connected with the enclosure and the ventilating system associated with the enclosure are thoroughly examined and tested regularly by a competent person; and
  - (c) defects identified are remedied without delay.
- (4) A competent person who carries out examinations and testing under paragraph (3)(b) shall record the results of those examinations and tests.

#### Use of Blasting Enclosures

**389.** (1) In this section, "uncombined silica" means silica that is not combined chemically with other elements or compounds. (*silice libre*)

- (2) An employer shall ensure that
- (a) to the extent that is reasonably possible, abrasive blasting of articles that are likely to give rise to dust containing uncombined silica is only done in a blasting enclosure;
  - (b) if reasonably possible, sand or any other substance containing more than 1% by weight of uncombined silica is not used for abrasive blasting in a blasting enclosure; and
  - (c) work is not performed in a blasting enclosure unless the work is
    - (i) abrasive blasting and work incidental to abrasive blasting, and
    - (ii) cleaning and maintenance of the blasting enclosure, the equipment associated with the blasting enclosure and the ventilation system.

#### Sandblasting

**390.** (1) In this section, "sandblasting" means an abrasive blasting process that uses sand as an abrasive. (*sablage par jet*)

(2) An employer shall ensure that sandblasting is not done to an article outside a blasting enclosure, if it is reasonably possible to introduce the article into a blasting enclosure.

- (3) An employer shall ensure that sandblasting is not done inside a structure or confined space without
- (a) first obtaining the written permission of the Chief Safety Officer; and
  - (b) complying with any conditions that the Chief Safety Officer specifies.

### Silica Flour

- 391.** An employer shall ensure that silica flour is not used
- (a) if a less hazardous substance could be substituted; or
  - (b) in the manufacture of scouring powder or abrasive soaps or as an abrasive.

### Medical Examinations

- 392.** (1) This section applies to a worker who regularly works in a silica process.
- (2) An employer shall, not less than once every two years and with the consent of the worker,
- (a) arrange for the worker to have a medical examination during the worker's normal working hours; and
  - (b) reimburse the worker for the cost of the medical examination that the worker cannot recover.
- (3) If a worker cannot attend a medical examination referred to in subsection (2) during the worker's normal working hours, the employer shall credit the worker's attendance at the examination as time at work and ensure that the worker does not lose pay or benefits.
- (4) A medical examination arranged under subsection (2) must include
- (a) a comprehensive medical history and physical examination with special attention to the respiratory system;
  - (b) lung function tests, including forced vital capacity and forced expiratory volume at one second; and
  - (c) any further medical investigations that are necessary for the diagnosis of a silica-related disease.

## PART 26 FIRE AND EXPLOSION HAZARDS

### Interpretation

- 393.** In this Part,

"combustible liquid" means a liquid that has a flashpoint at or above 37.8°C and below 93.3°C; (*liquide combustible*)

"container" includes a tank, tank car, tank truck, cylinder or other stationary or portable vessel used to contain a flammable substance; (*conteneur*)

"flammable liquid" means a liquid that has a flashpoint below 37.8°C and has a vapour pressure not exceeding 275.8 kPa at 37.8°C; (*liquide inflammable*)

"flammable substance" means

- (a) a flammable or combustible liquid or gas,
- (b) a solid that is combustible, or
- (c) dust that is capable of creating an explosive atmosphere when suspended in air in concentrations within the explosive limit of the dust; (*substance inflammable*)

"hot work" means work that produces arcs, sparks, flames, heat or other sources of ignition. (*travail à chaud*)

### Fire Safety Plan

- 394.** (1) An employer shall
- (a) take reasonable steps to prevent the outbreak of fire at a work site and to provide effective means to protect workers from a fire that could occur; and
  - (b) develop and implement a written fire safety plan that provides for the safety of workers in the event of a fire.
- (2) A fire safety plan developed under subsection (1) must include
- (a) emergency procedures to be used in case of fire, including
    - (i) sounding the fire alarm,
    - (ii) notifying the fire department, and
    - (iii) evacuating endangered workers, with special provisions for workers with disabilities;
  - (b) quantities, locations and storage methods of flammable substances present at the work site;
  - (c) provisions that designate individuals to carry out the plan and the duties of those individuals;
  - (d) provisions that outline the training of individuals designated under paragraph (c) and of workers in their responsibilities for fire safety;
  - (e) provisions that indicate when fire drills are held; and
  - (f) provisions that outline how fire hazards are controlled.
- (3) An employer shall ensure that
- (a) individuals designated under paragraph (2)(c) and workers who have been assigned fire safety duties are adequately trained in, and implement, the fire safety plan;
  - (b) the fire safety plan is posted in a conspicuous place for reference by workers; and
  - (c) a fire drill is held not less than once a year.



### Fire Extinguishers

**395.** (1) An employer shall ensure that portable fire extinguishers are selected, located, inspected, maintained and tested so that the health and safety of workers at the work site is protected.

(2) An employer shall ensure that portable fire extinguishers are placed not more than 9 m from

- (a) an industrial open-flame portable heating device, tar pot or asphalt kettle that is in use; and
- (b) a welding or cutting operation that is in progress.

### Garbage as Fire Hazard

**396.** (1) In this section, "garbage" does not include waste that is being processed at a waste disposal facility. (*rebut*)

(2) If garbage constitutes a fire hazard at a work site, an employer shall provide covered receptacles for the garbage that are suitable to the nature of the hazard.

### Procedures for Flammable Substances

**397.** (1) If a flammable substance is or is intended to be handled, used, stored, produced or disposed of at a work site, an employer shall develop written procedures to ensure the health and safety of workers who

- (a) handle, use, store, produce or dispose of a flammable substance that could spontaneously ignite or ignite when in combination with other substance; or
- (b) perform hot work if there is a risk of fire.

(2) An employer shall ensure that workers who are required or permitted to perform work referred to in subsection (1) are trained in, and use, the procedures developed under subsection (1).

(3) Workers who perform work referred to in subsection (1) shall use the procedures developed under subsection (1).

### Receptacles for Materials Contaminated by Flammable Liquids

**398.** (1) An employer shall ensure that materials contaminated by flammable liquids are placed in receptacles that are

- (a) non-combustible and have close-fitting metal covers;
- (b) labelled "flammable"; and
- (c) located not less than 1 m away from other flammable liquids.

(2) An employer shall ensure that a receptacle required under subsection (1) has a flanged bottom or legs that are not less than 50 mm high, if the surface on which the receptacle is placed is combustible.

(3) A worker shall place materials contaminated by flammable liquids and garbage that constitute a fire hazard into the appropriate receptacle required by this section or by section 396.

#### Receptacles for Combustible or Flammable Liquids

**399.** (1) In this section, "National Fire Code" means the *National Fire Code of Canada 2010/Code nationale de prévention des incendies du Canada 2010*, as amended from time to time. (*Code nationale de prévention des incendies*)

(2) The National Fire Code is adopted.

(3) An employer shall ensure that flammable and combustible liquids are stored in accordance with the National Fire Code.

#### Activities Involving Combustible or Flammable Liquids

**400.** (1) An employer shall ensure that

- (a) gasoline is not used to start a fire, or used as a cleaning agent; and
- (b) workers are not required or permitted
  - (i) to replenish a tank on a heating device with a combustible or flammable liquid while the device is in operation or is hot enough to ignite the liquid, or
  - (ii) to place a tar pot, while in use, within 3 m of an entrance to or exit from a building.

(2) A worker shall not

- (a) use gasoline to start a fire or use gasoline as a cleaning agent; or
- (b) replenish a tank on a heating device with a flammable or combustible liquid while the device is in operation or is hot enough to ignite the liquid.

#### Control of Ignition Sources and Static Charges

**401.** An employer shall ensure that

- (a) suitable procedures are developed and implemented to prevent the ignition of flammable liquids or explosive dust that are present at a work site;
- (b) sources or potential sources of ignition are eliminated or controlled if an explosive atmosphere exists or is likely to exist; and

- (c) static charge accumulations during transfer of flammable liquids or explosive substances from one container to another are prevented by electrically bonding the containers.

#### Flammable Liquids, Gases or Explosive Substances in Vehicles

- 402.** (1) An employer shall ensure that a worker does not undertake servicing or maintenance of a vehicle while a flammable liquid or gas or an explosive substance is
- (a) loaded into or unloaded from the vehicle; or
  - (b) present in the vehicle in a place other than the fuel tank.

(2) If reasonably possible, a worker who operates a vehicle that contains a flammable liquid or gas or an explosive substance shall ensure that the engine of the vehicle is shut off during the connection or disconnection of the lines for the loading or unloading of the flammable liquid, gas or explosive substance.

#### Flammable or Explosive Substance in Atmosphere

**403.** (1) If a flammable or explosive substance is present in the atmosphere of a work site at a level that is more than 20% of the lower explosive limit of that substance, an employer shall not require or permit a worker to enter into or work at the work site.

- (2) Subsection (1) does not apply to
- (a) a fire fighter who has been trained under section 479; or
  - (b) a competent worker who meets the requirements of subsection (3) and who is acting in an emergency situation at the work site.
- (3) An employer shall ensure that
- (a) a competent worker referred to in paragraph (2)(b) is trained, equipped and works according to an approved standard;
  - (b) the training required by paragraph (a) is provided by a competent person; and
  - (c) a written record is kept of training delivered to a worker under paragraph (a).

#### Hot Work

- 404.** (1) If a flammable substance as defined in section 393 is or could be present at a work site, an employer shall ensure that hot work is not performed until
- (a) suitable tests have been conducted that
    - (i) indicate whether the atmosphere contains a flammable substance in a quantity sufficient to create an explosive atmosphere, and
    - (ii) confirm that the work can be safely performed; and

- (b) the work procedures developed under paragraph 397(1)(b) have been implemented to ensure continuous safe performance of the work.

(2) While hot work is being performed, an employer shall conduct the tests referred to in paragraph (1)(a) at intervals appropriate to the work being performed and record the results of those tests.

(3) An employer shall not require or permit hot work to be performed in the vicinity of a material that constitutes a fire hazard until appropriate steps have been taken to reduce the risk of fire.

(4) An employer shall ensure that a container or piping that contains or has contained a flammable substance is purged using an effective method to remove the flammable substance from the container or piping before hot work is begun on that container or piping.

(5) An employer shall not require or permit welding or cutting of metal that has been cleaned with a flammable or combustible liquid until the metal has thoroughly dried.

#### Compressed and Liquified Gas Systems

**405.** (1) In this section, "system" means a system into which compressed or liquified gases are delivered and stored and from which compressed or liquified gas is discharged in the liquid or gaseous form, and includes containers, pressure regulators, pressure relief devices, manifolds, interconnecting piping and controls. (*système*)

(2) An employer shall

- (a) develop and implement written procedures for the safe installation, use and maintenance of a system;
- (b) make readily available to workers the procedures developed under paragraph (a) before requiring or permitting use of the system; and
- (c) ensure that workers are trained in and use the procedures developed under paragraph (a).

(3) A worker who performs work on a system shall use the procedures developed under paragraph (2)(a).

(4) An employer shall ensure that

- (a) a system
  - (i) is not exposed to temperatures that could result in the failure of the system or explosion of the contents of the system,

- (ii) is maintained in a clean state, free from oil, grease or other contaminant that could cause a failure of the system or that could burn or explode if the contaminant comes into contact with the contents of the system, and
  - (iii) is located, guarded and handled during filling, transportation, use and storage so that the system is protected from damage;
  - (b) service valve outlets and the extensions of service valve outlets of containers that are not connected to an apparatus are capped; and
  - (c) if equipment is designed for use with a particular compressed or liquified gas,
    - (i) only that gas is used in the equipment, and
    - (ii) the equipment is clearly labelled as being only for that use.
- (5) A worker shall
- (a) take reasonable steps to ensure that sparks, flames or other sources of ignition do not come into contact with a system;
  - (b) maintain a system in a clean state, free from oil, grease or other contaminants; and
  - (c) secure caps in place before transporting a container.

### Oxygen

**406.** (1) An employer shall ensure that oil, grease or other contaminants do not make contact with a cylinder, valve, regulator or any other fitting of an oxygen-using apparatus or an oxygen distribution or generating system.

(2) An employer shall ensure that oxygen is not used as a substitute for compressed air

- (a) in pneumatic tools;
  - (b) to create pressure;
  - (c) for ventilating purposes; or
  - (d) to blow out a pipeline.
- (3) A worker shall not use oxygen as a substitute for compressed air
- (a) in pneumatic tools;
  - (b) to create pressure;
  - (c) for ventilating purposes; or
  - (d) to blow out a pipeline.

### Gas Burning and Welding Equipment

**407.** (1) If gas burning or welding equipment is in use, an employer shall ensure that

- (a) approved flashback devices are installed on both hoses at the regulator end; and

- (b) acetylene and liquified gas containers are used and stored in an upright position.

(2) A worker shall shut off the container valve and release the pressure in the hose of gas burning or welding equipment if the worker

- (a) is not likely to use the equipment; or
- (b) leaves the equipment unattended.

### Piping

**408.** (1) If workers are required or permitted to work on piping that could contain harmful substances or substances under pressure, an employer, in consultation with the Committee or representative, shall develop written procedures to protect the workers from contact with those substances.

(2) The procedures developed under subsection (1) must include

- (a) the installation of a blank that is appropriate for the proper pressure in the piping;
- (b) the closing of two blocking valves installed in the piping and the opening of a bleed-off valve installed between the blocking valves;
- (c) the installation of an approved safety device; or
- (d) if the procedures referred to in paragraphs (a), (b) and (c) are not reasonably possible, other procedures that are adequate to protect the health and safety of the workers.

(3) An employer shall ensure that workers are trained in and implement the procedures developed under subsection (1).

(4) An employer shall ensure that

- (a) piping referred to in paragraph (2)(a) is clearly marked to indicate that a blank has been installed; or
- (b) the two blocking valves referred to in paragraph (2)(b) or the approved safety device referred to in paragraph (2)(c) are
  - (i) locked in the closed position and the bleed-off valve is locked in the open position, and
  - (ii) tagged to indicate that the valves must not be activated until the tags are removed by a worker designated by the employer for that purpose.

(5) An employer shall ensure that a worker designated under subparagraph (4)(b)(ii)

- (a) monitors the valves to ensure that they are not activated while a worker is working on the piping; and
- (b) records on the tag referred to in subparagraph (4)(b)(ii) the date and time of each monitoring and signs the tag each time the worker monitors the valves.

(6) An employer shall ensure that a valve installed on piping referred to in this section is clearly marked to indicate the open and closed positions.

#### Pigging and Testing of Pipelines

**409.** (1) A person who is not directly involved in a pigging and testing operation shall not be in the immediate area of piping exposed during the operation.

(2) An employer shall ensure that

- (a) a pigcatcher on a pipeline is isolated from the pipeline and depressurized before the pig is removed; and
- (b) workers are not at the end of the pipe or in the immediate vicinity of the pigcatcher if the pipe or pigcatcher is under pressure during the operation.

### PART 27 EXPLOSIVES

#### Application of Part

**410.** Nothing in this Part affects the application of the *Explosives Use Act* or regulations made under that Act.

#### Qualifications of Workers

**411.** (1) An employer who plans to conduct blasting activities shall ensure that a worker who is to undertake a blasting operation

- (a) has been thoroughly trained in
  - (i) the estimation of the amount of explosives required, and in placing, priming and initiating the charge,
  - (ii) the appropriate procedures to be followed to ensure the safety of other workers,
  - (iii) the procedures to be followed in the event of a misfire, and
  - (iv) the examination of the site after blasting to ensure that it is safe to return to the work site;
- (b) has demonstrated competence to carry out the procedures referred to in paragraph (a);
- (c) has a thorough knowledge of federal and territorial statutes, regulations and codes of practice pertaining to the safe use of explosives that are relevant to the blasting operation in question; and
- (d) holds a written authorization to blast signed by the worker's employer.

- (2) A worker shall not undertake a blasting activity until the worker
- (a) possesses the written authorization to blast referred to in paragraph (1)(d);
  - (b) is the holder of a valid permit under the *Explosives Use Act*; and
  - (c) is a competent supervisor or is under the supervision of a competent supervisor, who also holds a valid permit under the *Explosives Use Act*.

#### Written Procedures

**412.** (1) An employer shall ensure that appropriate written procedures are provided to a worker who conducts a blasting operation to ensure the safety of the worker and other individuals in the vicinity of the blasting operation.

(2) A worker who undertakes a blasting activity shall follow the procedures provided by the employer as required by subsection (1).

#### Equipment

**413.** An employer shall provide a worker who is to undertake a blasting operation with suitable testing and detonating equipment.

#### Storage and Transportation of Explosives

- 414.** (1) An employer shall ensure that all explosives are stored or transported
- (a) in suitable sealed containers that are conspicuously marked "Danger- Explosives"; and
  - (b) in a manner that prevents the explosives from coming into contact with a flammable substance or other agent that could cause the explosives to detonate.

(2) An employer shall ensure that explosives are kept in a secure location that is accessible only to authorized workers.

### PART 28 DEMOLITION WORK

#### Interpretation

**415.** In this Part, "demolition" means the tearing down, destroying, breaking up or razing of a structure, and includes the demolition of a major part of a structure that involves outer walls or principal supporting members. (*démolition*)



### Before Demolition Begins

- 416.** (1) Before demolition begins, an employer shall ensure that
- (a) hazardous chemical or biological substances are removed from the structure;
  - (b) glass is removed from the structure; and
  - (c) subject to subsection (2), gas, electrical, telecommunications, sewer and water services connected to the structure are disconnected.

(2) If power is required for illumination or other purposes, an employer shall provide a suitably located temporary power service.

### Stability of Adjacent Structures

- 417.** If demolition could affect the stability of an adjoining structure, an employer shall ensure that
- (a) the demolition is carried out in accordance with procedures certified by a professional engineer; and
  - (b) a copy of the procedures required by paragraph (a) is kept at the work site during demolition.

### Duties of Employer

- 418.** During demolition, an employer shall
- (a) appoint a competent supervisor to be in charge of the demolition while the work is in progress;
  - (b) ensure that workers or equipment are located clear of falling material; and
  - (c) if a worker is or could be present in a building during its demolition, ensure that the demolition is performed floor by floor from the top downward.

### Demolition Procedures

- 419.** During demolition, an employer shall ensure that
- (a) dust from the demolition is controlled to the extent that is reasonably possible;
  - (b) materials and debris are not allowed to accumulate in an area to the extent that the materials and debris cause overloading of a structure that could result in its collapse;
  - (c) openings or holes in a floor, roof or other surface, where workers are required or permitted to walk or stand, are guarded or covered as required by section 130;
  - (d) a free-standing scaffold is used in the demolition of a building shaft from the inside;

- (e) steel structures are dismantled column length by column length and tier by tier from the top downward; and
- (f) walls or other parts of the structure being demolished are not left in an unstable condition or in danger of accidental collapse, other than during the actual demolition of those walls or parts of the structure.

#### Material Chutes

**420.** (1) An employer shall ensure that a material chute steeper than 45° from the horizontal is constructed to enclose the material placed in the chute.

(2) If a material chute could endanger workers, an employer shall ensure that a guardrail is installed around the top of the chute to prevent workers from falling into the chute.

#### Structural Members

**421.** (1) An employer shall ensure that structural members that are being removed are not under stress from other than the member's own weight, and are secured or supported to prevent unexpected movement.

(2) If a structural member is being hoisted by a crane or other similar lifting device from a structure being demolished or from the demolition rubble, an employer shall ensure that the hoisting line is in a vertical position and is over the centre of gravity of the load in a manner that will reduce the danger to workers from a swinging or uncontrolled load.

#### Use of Powered Mobile Equipment

**422.** (1) Before powered mobile equipment is placed on a floor, roof or other surface where workers are required or permitted to walk or stand for the purpose of demolishing a structure, an employer shall ensure that the floor, roof or other surface is capable of supporting the load that could be placed on the floor, roof or other surface.

(2) If powered mobile equipment is used for the purpose of demolishing a structure, an employer shall ensure that safe work procedures are developed and implemented.

#### Use of Explosives

**423.** If a structure is to be demolished by explosives, an employer shall

- (a) ensure that a competent person develops a demolition procedures to protect the health and safety of workers;

- (b) submit a copy of the procedures referred to in paragraph (a) to the Chief Safety Officer not less than 30 days before the proposed date of the demolition; and
- (c) ensure that the worker who undertakes the blasting activity meets the requirements of section 411.

PART 29  
FORESTRY AND MILL OPERATIONS

Interpretation

**424.** In this Part,

"chicot" means a dead or damaged tree or a dead or damaged limb of a tree; (*chicot*)

"felling" means cutting a tree from the tree's stump and bringing the tree to the ground; (*abattage*)

"forestry operation" means the cutting or harvesting of trees, and includes the transporting of logs and the preparing of sites for tree planting and seeding; (*exploitation forestière*)

"lodged tree" means a tree that has not fallen to the ground after being partly or wholly separated from the tree's stump or displaced from the tree's natural position; (*arbre encroué*)

"mill operation" means the operation of

- (a) a pulp mill, paper mill, sawmill, plywood mill, wafer-board mill or strand-board mill, or
- (b) the operation of equipment that is designed to manufacture or process wood products such as pulp, pulpwood, paper, veneer, plywood, lumber, timber, poles, posts, chips, wafers, sawdust and other products; (*exploitation d'usine de transformation du bois*)

"skidding" means moving logs or trees by pulling the logs or trees across terrain; (*débusquage*)

"skidder operator" means a worker who operates a skidder or who operates any other powered mobile equipment to perform the work of a skidder; (*conducteur de débusqueuse*)

"snag" means material or an object that could interfere with the safe movement of a tree or log or that could endanger a worker; (*saillie*)

"stake" means a wooden or metal post or a post made of other material of equivalent strength that is used to support and prevent the lateral movement of logs; (*piquet*)

"windfall" means a tree blown down by wind. (*chablis*)

#### Application of Part

**425.** This Part applies to forestry operations and mill operations.

#### First Aid Attendant

**426.** Notwithstanding section 58, if a worker is cutting or skidding, an employer shall ensure that a first aid attendant who holds not less than a Level 2 qualification is readily available.

#### Cutting and Skidding-General Requirements

- 427.** (1) During cutting and skidding operations, an employer shall ensure that
- (a) a worker who does not have duties associated with cutting and skidding is not required or permitted to enter the area where those operations are carried out;
  - (b) a worker fells any hazardous timber that is adjacent to a proposed landing or other worksite;
  - (c) a worker does not fell a tree within range of a travelled road unless effective means are taken to stop traffic until the tree has been felled and the tree and other debris have been removed;
  - (d) a worker closely limbs trees
    - (i) before the trees are placed on a rollway, or
    - (ii) if the limbs could create a risk to the health or safety of a worker.
- (2) An employer shall ensure that
- (a) an individual does not enter a felling area unless the worker engaged in felling has advised the individual entering the area that it is safe to enter;
  - (b) each worker is instructed in, and complies with, the duties set out in subsection (3), subsection 154(4), sections 428 and 429, subsections 430(3), 432(3) and 433(2), section 435 and subsection 436(11);
  - (c) each worker who engages in conventional logging, within six months after commencing the work, successfully completes an approved course in conventional logging safety; and
  - (d) a worker who completes an approved course as required by paragraph (c) maintains his or her designations or certifications earned through completing that course.
- (3) A worker shall not work on a hillside below a cutting or skidding operation if a tree or log rolling or moving downhill could endanger the worker.

### Cutting

- 428.** During cutting operations, a worker shall
- (a) remove a chicot or other debris hazardous to workers that is in the vicinity of the work site before trees are felled;
  - (b) remain at a safe distance from, and not fell a tree onto, another tree that is lodged or that could endanger the worker; and
  - (c) move quickly to a predetermined safe position when a tree starts to fall.

### Felling

- 429.** (1) Before starting to fell a tree, a worker shall
- (a) clear away adjacent brush to provide sufficient room to work and to provide a path to a safe position, at a 45° angle from the direction opposite to the planned direction of fall; and
  - (b) ensure that other workers are not less than 60 m from the tree being felled.

(2) Before a felling cut is begun on a tree with a trunk that has a diameter of 15 cm or more, a worker shall

- (a) undercut the trunk to control the direction of the fall; and
- (b) ensure that
  - (i) the depth of the undercut is not less than one third of the diameter of the tree trunk at that point, and
  - (ii) both cuts that form the undercut meet at the depth referred to in subparagraph (i).

(3) After making an undercut, a worker shall

- (a) remove the wood from the undercut before the back cut is started and leave sufficient holding wood in the back cut side to control the direction of the fall of the tree; and
- (b) ensure that the back cut is above the undercut by not more than 100 mm from the undercut.

(4) If a worker cannot safely complete the felling of a tree or a tree that a worker is felling becomes unsafe, the worker shall

- (a) remain in the area in a safe location; and
- (b) do no further work until a skidder operator fells the tree.

### Partially Cut Trees

- 430.** (1) Subject to subsection (2), if a tree is partially cut, an employer shall ensure that a worker completes the felling of the tree without delay.

(2) If a partially cut tree cannot be completely felled or sits back on the stump, an employer shall ensure that a worker who remains in the area is in a safe location and does no further work until a skidder operator assists the worker to safely fell the tree.

(3) A worker shall not fell a tree or undertake any other activity at or in the vicinity of a work site if a tree or partially cut tree that sits back on its stump is at or in the vicinity of the work site.

#### Lodged Trees

**431.** (1) If there is a lodged tree, an employer shall ensure that

- (a) a skidder operator fells the tree without delay;
- (b) a worker does not climb the tree;
- (c) a worker does not lower the tree by felling another tree onto the lodged tree; and
- (d) a worker does not remove the lodged tree by cutting the supporting tree.

(2) An employer shall ensure that a worker does not enter an area where there is a lodged tree unless the worker is required to fell the lodged tree.

#### Mechanized Fellers and Limbers

**432.** (1) An employer shall ensure that

- (a) a mechanized feller or limber is provided with
  - (i) adequate protection for the operator, including protection against a falling tree or part of a tree, and
  - (ii) a cab for the operator with not less than two exits through which the operator can readily escape; and
- (b) a mechanized feller is designed and equipped to direct the fall of the tree away from the mechanized feller.

(2) An employer shall ensure that

- (a) a worker does not operate a mechanized feller or limber in a location where the stability of the machine cannot be assured; and
- (b) a worker does not operate a mechanized feller within 60 m of a worker who could be endangered by a falling tree or part of a tree.

(3) A worker shall not

- (a) operate a mechanized feller or limber in a location where the stability of the machine cannot be assured; or
- (b) operate a mechanized feller within 60 m of a worker who could be endangered by a falling tree or part of a tree.

### Bucking and Limbing

**433.** (1) In this section,

"bucking" means sawing a log or felled tree into smaller lengths; (*tronçonnage*)

"limbing" means removing limbs from a tree that has been felled. (*ébranchage*)

- (2) If a worker is bucking or limbing, an employer shall ensure that the worker
- (a) clears away brush or objects that are hazardous to workers;
  - (b) does not move forward while limbing a tree or log unless the worker is limbing on the side of the tree or log that is opposite to the side of the tree or log where the worker is located;
  - (c) remains not less than 60 m from a tree being felled;
  - (d) remains in a location safe from a tree or log being skidded or moved; and
  - (e) works only on the uphill side of a log that is lying on an incline.

- (3) While bucking or limbing, a worker shall
- (a) clear away brush or objects that are hazardous to workers;
  - (b) not move forward while limbing a tree or log unless the worker is limbing on the side of the tree or log that is opposite to the side of the tree or log on which the worker is located;
  - (c) remain not less than 60 m from a tree being felled;
  - (d) remain in a location safe from a tree or log being skidded or otherwise moved; and
  - (e) work only on the uphill side of a log that is lying on an incline.

### Skidding

- 434.** (1) During skidding operations, an employer shall ensure that
- (a) snags, chicots, lodged trees or windfall that could endanger workers and that are located along or adjacent to a skid trail, haul road or landing, are removed; and
  - (b) a skidder operator, without delay, pulls down trees that are lodged or dangerous when the lodged or dangerous trees are reported to the skidder operator.

(2) An employer shall ensure that if a winching machine is used, it is equipped with suitable safeguards to protect the operator from flying objects.

- (3) An employer shall ensure that
- (a) a worker other than a skidder operator is not required or permitted to ride on a skidder unless the skidder is provided with a second seat that is adequately protected;

- (b) a skidder operator is required to discontinue operating if the operation of the skidder could endanger another worker until it is possible for the operation to proceed without danger to the other worker;
- (c) a skidder operator does not operate a skidder within 60 m of a worker who is felling a tree until the worker has signalled that it is safe to operate the skidder; and
- (d) a skidder operator does not operate a skidder near the edge of a bank, fill, excavation, incline or any other place where the skidder cannot safely be controlled.

(4) An employer shall ensure that the skidder operator applies the brakes and, if the terrain is uneven, lowers the blade to the ground when the skidder operator temporarily gets off the skidder.

(5) If a skidder operator parks a skidder, an employer shall ensure that the skidder operator parks the skidder on even ground and lowers the blade to the ground.

#### Skidder Operators' Responsibilities

- 435.** (1) A skidder operator shall
- (a) remove snags, chicots, lodged trees or windfall that could be hazardous or that are located along or adjacent to a skid trail, haul road or landing; and
  - (b) if advised that a tree is lodged or dangerous, remove the tree without delay.
- (2) A skidder operator shall not operate the winch at an angle that could cause the skidder to overturn.
- (3) A skidder operator shall
- (a) keep loose winch cables wound up on the winch drum and chokers clear of the ground during travel;
  - (b) ensure that a worker is not located under or near the winch cable or choker cables, or in a position to be struck by a winch cable or choker cable if the cable breaks or comes loose; and
  - (c) attach choker cables applied to a log not more than 1m from the end of the log.
- (4) Before moving a log, a skidder operator shall ensure that other workers are not endangered by moving the log.
- (5) A skidder operator shall
- (a) not operate the skidder winch other than from the seat provided, unless a remote control device is provided and used from a safe winching position; and



- (b) operate the skidder at a speed and in a manner that prevents the skidder from overturning.

(6) When skidding a log to a landing, a skidder operator shall winch the drag up tight to the rear of the skidder to prevent uncontrolled movement of the log.

(7) If a worker is attaching a choker to a log on sloping ground, a skidder operator shall lower the blade of the skidder to the ground.

(8) When temporarily getting off a skidder, a skidder operator shall apply the brakes and, if the terrain is uneven, lower the blade to the ground.

(9) When parking a skidder, a skidder operator shall park the skidder on even ground and lower the blade to the ground.

#### Loading, Unloading and Hauling Logs

**436.** (1) If a worker is loading or unloading logs, an employer shall ensure that the loading and unloading areas are suitably graded and maintained appropriately for the equipment that is being used.

(2) If a worker is loading or unloading logs with a crane or other type of mechanical loader, an employer shall ensure that a worker is not required or permitted to stand or work under the path of the bucket, grapple or load.

(3) If a worker is or could be endangered by logs suspended over or near the cab of a vehicle, an employer shall ensure that the worker is not required or permitted to remain in the cab.

(4) An employer shall ensure that a worker who is not actively engaged in a loading or unloading operation

- (a) remains at a safe distance from the operation in clear view of the operator; or
- (b) if the hazardous situation referred to in subsection (3) does not exist, remains in the cab of the vehicle.

(5) If a worker operates a loader equipped with a clam, an employer shall ensure that the jaws of the clam secure the entire load.

(6) If a loader is equipped with a fork, an employer shall ensure that rear stoppers are provided that are designed and sufficiently strong to prevent a log from falling back on the operator.

(7) An employer shall ensure that

- (a) a log yard is constructed, arranged, maintained and operated so that a worker is not endangered by a moving log or equipment; and

- (b) a worker does not build a log pile to a height that cannot be safely handled by the equipment used in the stacking and breaking down of the log deck.

(8) An employer shall ensure that workers are not required or permitted to work on, under or beside a haul unit during loading or unloading.

(9) If an operator does not have a clear view of the entire loading or unloading operation, an employer shall ensure that a signaller with a clear view of the operation and visible to the operator is designated in accordance with section 138.

(10) An employer shall ensure that a worker

- (a) restrains the top log on the outside edge of a vehicle by no fewer than two stakes; and
- (b) secures the log load on a vehicle
  - (i) to the vehicle body with tie-downs of sufficient size and strength to restrain the logs,
  - (ii) between each set of stakes, and
  - (iii) by no fewer than two tie-downs at the rear of the load.

(11) A worker engaged in loading or unloading logs shall,

- (a) before shutting down and leaving the loader, lower the clam or forks, put the loader in neutral and apply the brakes;
- (b) while manually loading, unloading, decking or breaking piles, work only at the end of the logs; and
- (c) while loading or unloading logs, work in a safe position in clear view of the operator or signaller, if one is required by subsection (9).

#### Vehicles Used to Haul Logs

**437.** An owner of a vehicle used to haul logs shall ensure that

- (a) the vehicle is equipped with a bulkhead installed between the cab and the load that is of sufficient size and strength to resist impact caused by a shifting load;
- (b) stakes used to restrain logs on the vehicle are designed, constructed and installed to safely support the load placed against the stakes; and
- (c) stake extensions are of a strength equivalent to the strength of the stake and positively secured to the stake to prevent inadvertent detachment.

#### Log Carriages

**438.** (1) If sawmill log carriages are used, an employer shall ensure that workers are not required or permitted to ride on a log carriage.

(2) If the area immediately behind a log carriage is used as a walkway, an employer shall ensure that a guardrail is installed between the walkway and the carriage for the full extent of the carriage travel.

- (3) An employer shall ensure that, in respect of a log carriage,
- (a) suitable devices are installed to stop the log carriage at the end of its travel in each direction;
  - (b) the log carriage is equipped with a headblock and dogs used to secure logs during the sawing operation;
  - (c) the log carriage is provided with a safety device that will ensure that headblocks cannot be moved to a position within 30 mm of the saw blade;
  - (d) sweepers are provided in front and at the back of the log carriage to remove obstructions from the track;
  - (e) if a power-driven log carriage is used, it is propelled by a wire rope that is
    - (i) of sufficient strength to propel the log carriage safely, and
    - (ii) maintained;
  - (f) a sawyer's lever used to operate the carriage drive mechanism is designed and installed so that the movement of the lever is in the opposite direction to the carriage travel, unless the sawyer's position and controls are enclosed or isolated from the carriage; and
  - (g) means are provided to securely lock a sawyer's log turning and carriage control levers.

(4) An employer shall ensure that a sawyer engages the carriage control lever lock before leaving the sawyer's position.

### Sawmill Head Rigs

**439.** (1) In this section, "husk" means a head saw framework on a circular mill. (*table de sciage*)

- (2) If a sawmill head rig is operated, an employer shall ensure that
- (a) a circular blade sawmill is equipped with suitable saw guides that can only be adjusted from outside the husk;
  - (b) husks are completely enclosed and are provided with a substantial, securely hinged cover;
  - (c) a solid splitter is provided that
    - (i) has a leading edge that is adjacent to and conforms to the curvature of the saw blade, and
    - (ii) extends above the carriage deck a distance not less than one-quarter of the diameter of the saw blade in use;

- (d) a substantial safeguard is provided over the lower portion of the head saw blade under the carriage tracks and extends not less than 15 cm below the bottom of the largest size saw blade in use;
- (e) a substantial heavy-mesh screen or other suitable material is securely placed between the saw blade and the sawyer's position to protect the sawyer from throw-backs from the saw;
- (f) mesh screens required by paragraph (e) are backed by a small-mesh screen or other effective safeguard located on the sawyer's side of the heavy screen to protect the sawyer from small flying particles;
- (g) a power unit driving a sawmill is equipped with an emergency stopping device located within immediate reach of the sawyer; and
- (h) the yard end of an elevated log deck rollway is equipped with a device that will prevent logs from rolling back into the mill yard.

(3) An employer shall ensure that the support structure for a top saw is of sufficient size and strength to withstand forces imposed on the saw.

#### Trimmer Saws

**440.** An employer shall ensure that a trimmer saw blade is equipped with a safeguard that allows the passage of material being cut, exposes a minimum amount of the saw blade and protects workers from flying debris.

#### Edgers

**441.** (1) An employer shall ensure that

- (a) the top of an edger is covered effectively to control flying debris;
- (b) the roll of an edger is kept in contact with the material being cut; and
- (c) an edger is equipped with an effective kickback device to protect workers from material thrown from either end of the edger.

(2) An employer shall ensure that an overhead or double arbour saw edger is provided with a safeguard to protect workers from material thrown from the infeed rolls or the outfeed rolls.

#### Bandsaws

**442.** An employer shall ensure that

- (a) the saw blades of a bandsaw are enclosed or guarded between the top guideroll and the table, other than on the working side of the blade;
- (b) bandsaw wheels are fully enclosed; and
- (c) bandsaw machines are provided with an effective automatic tension control device.

## Feedrolls of Resaws

**443.** An employer shall ensure that the feedrolls of a resaw are protected with semi-cylindrical metal guards to prevent workers' hands from coming in contact with the roll.

## Dry Kilns

**444.** An employer shall ensure that

- (a) before the heating process is begun, workers do not remain in a dry kiln; and
- (b) a dry kiln is equipped with a readily identifiable escape door or kick out panel with dimensions of not less than 600 mm by 600 mm.

## PART 30

## ADDITIONAL PROTECTION FOR ELECTRICAL WORKERS

**445.** (1) In this Part,

"electrical equipment" means electrical equipment as defined in subsection 1(1) of the *Electrical Protection Act*; (*matériel électrique*)

"electrical work" means electrical work as defined in subsection 1(1) of the *Electrical Protection Act*; (*travaux d'électricité*)

"guarded" means covered, shielded, fenced, enclosed or otherwise protected by suitable covers, casings, barriers, rails, screens, mats, platforms or other equally effective means; (*protégé*)

"high voltage" means a voltage over 750 V; (*haute tension*)

"lamp" means an artificial source of electric light; (*ampoule électrique*)

"luminaire" means a complete lighting unit that is designed to accommodate a lamp and to connect the lamp to an electrical power supply; (*appareil d'éclairage*)

"qualified electrical worker" means a qualified electrical worker as defined in subsection 1(1) of the *Electrical Protection Act*; (*électricien qualifié*)

"readily accessible" means capable of being reached quickly for operation, renewal, or inspection, without requiring a worker to climb over or remove obstacles or to resort to portable means of access. (*facile d'accès*)

- (2) Nothing in this Part is to be construed as authorizing
- (a) the performance of work by a person if it is unlawful for the person to perform that work under the *Electrical Protection Act* or any other enactment;
  - (b) the use of electrical equipment if it is unlawful to use that equipment under the *Electrical Protection Act* or any other enactment; or
  - (c) the performance of work in a particular manner if it is unlawful to perform the work in that manner under the *Electrical Protection Act* or any other enactment.
- (3) This Part does not apply to electrical work carried on by a qualified electrical worker
- (a) in power houses, substations or other facilities
    - (i) in which electricity is produced or from which electricity is distributed, and
    - (ii) from which some or all of the electricity referred to in paragraph (a) is sold;
  - (b) on railway cars or locomotives or street railway cars or locomotives; or
  - (c) on transmission lines or distribution systems of electric utilities.

#### Electrical Workers

**446.** (1) An employer shall not require or permit a worker to engage in electrical work unless he or she is a qualified electrical worker.

- (2) An employer may require or permit a competent worker
- (a) to operate powered mobile equipment and perform non-electrical work on or near de-energized electrical equipment;
  - (b) to extend a portable power cable for routine advancement by interconnection of approved cord connectors, cord caps or similar devices;
  - (c) to change light bulbs or tubes;
  - (d) to insert or replace an approved fuse, to a maximum of 750 V, that controls circuits or equipment; or
  - (e) to connect and use portable electrical equipment that operates at less than 750 V to supply circuits by means of attachment plug, without overloading the circuit conductors.

#### Electrical Equipment

- 447.** (1) An employer shall ensure that electrical equipment used by workers is
- (a) approved for its intended use and location;
  - (b) maintained; and
  - (c) tested in accordance with the manufacturer's specifications.

(2) If defects or unsafe conditions are identified in electrical equipment, an employer shall ensure that

- (a) steps are taken without delay to inform and protect the health and safety of workers who could be endangered until the defects are repaired or the conditions are corrected; or
- (b) the defects are repaired or the conditions are corrected as soon as is reasonably possible.

#### Covers for Switches, Receptacles and Connections

**448.** An employer shall ensure that

- (a) switches, receptacles, luminaires and junction boxes are fitted with a covers that are approved for the intended use;
- (b) wire joints or connections are
  - (i) fitted with an approved caps or other approved covers,
  - (ii) enclosed in approved boxes, or
  - (iii) if the wire joints or connections are not permanently installed, protected from damage by another approved means; and
- (c) dead, abandoned or disused conductors or equipment are removed or disconnected and secured to prevent inadvertent energization.

#### Electrical Equipment in Tunnel or Manhole

**449.** If electrical equipment is installed in a tunnel or manhole, an employer shall ensure that, if reasonably possible,

- (a) the tunnel or manhole is kept clear of water; and
- (b) the electrical equipment is protected from physical or mechanical damage.

#### Luminaires

**450.** An employer shall ensure that a luminaire that is located at a height of less than 2.1 m above a working or walking surface, is protected against physical or mechanical damage.

#### Extension and Power Supply Cords

**451.** An employer shall ensure that an electrical extension or power supply cord used for supplying energy to electrical equipment is

- (a) approved for the intended use and location;
- (b) fitted with an approved cord end attachment device that is installed in an approved manner;
- (c) provided with a grounding conductor; and
- (d) maintained and protected from physical or mechanical damage.

### Portable Power Cables and Cable Couplers

- 452.** (1) An employer shall ensure that portable power cables and cable couplers are
- (a) protected from physical or mechanical damage; and
  - (b) inspected by a competent person at intervals that are sufficient to protect the health and safety of workers.
- (2) An employer shall ensure that
- (a) if an unsafe condition is identified in a portable power cable or cable coupler, the cable or coupler is repaired or taken out of service; and
  - (b) splices in a portable power cable are sufficiently strong and adequately insulated to retain the mechanical and dielectric strength of the original cable.
- (3) A worker shall take reasonable steps not to drive equipment over, or otherwise damage, a portable power cable or cable coupler.

### Portable Luminaires

- 453.** (1) If a portable luminaire is used, an employer shall ensure that
- (a) the electrical extension cord and fittings are approved for the intended use and are properly maintained; and
  - (b) the electrical extension cord is not used to supply power to equipment other than the portable luminaire, unless the cord meets the requirements of section 451.
- (2) An employer shall ensure that a portable luminaire used in a damp location or in a metallic enclosure, including a drum, tank, vessel or boiler,
- (a) is operated at a potential of not more than 12 V; or
  - (b) is supplied by a circuit that is protected by a Class A ground fault circuit interrupter.

### Exposed Metal Parts

- 454.** An employer shall ensure that exposed metal parts of portable electrical equipment that are not designed to carry electrical current are connected to ground unless
- (a) the equipment is of an approved, double-insulated type and is clearly marked as such;
  - (b) power is supplied to the equipment through an isolating transformer having a non-grounded secondary of not more than 50 V potential;
  - (c) power is supplied to the equipment through a Class A ground fault circuit interrupter; or



- (d) power is supplied to the equipment from a battery of not over 50 V potential.

#### Portable Electric Power Plants

- 455.** (1) An employer or supplier shall ensure that
- (a) a portable electric power plant that is operated at voltages exceeding 240 V to ground or is rated in excess of 12.0 kVA is connected to ground in a manner required by the *Electrical Protection Act* or its regulations; and
  - (b) electrical equipment connected to an ungrounded portable electric power plant is
    - (i) of the double insulated type, and
    - (ii) clearly marked as being of the double insulated type or is supplied from a Class A ground fault interrupting device.

(2) Subsection (1) does not apply if the electrical energy is used for electric arc welding.

#### Electrical Panels

- 456.** An employer shall ensure that electrical panels are
- (a) approved for their intended use and location;
  - (b) protected from physical or mechanical damage;
  - (c) readily accessible; and
  - (d) fitted with an approved cover that has an approved filler in an unused opening.

#### High Voltage Switchgear and Transformers

**457.** (1) An employer shall ensure that a place where electrical switchgear or transformers operating at high voltage are housed is

- (a) guarded;
- (b) kept free of extraneous material; and
- (c) adequately ventilated.

(2) An employer shall post a warning sign where high voltage switchgear or transformers are housed.

- (3) A warning sign required by subsection (2) must
- (a) indicate the highest voltage in use; and
  - (b) state that access is restricted to authorized persons only.

## Fire Extinguishers

**458.** An employer shall ensure that a fire extinguisher approved for Class C fires is readily available to workers working on or near energized high voltage electrical equipment.

## Grounding of Equipment Before Work Begins

**459.** Before work, other than work referred to in subsection 460(7), begins on a conductor or electrical equipment and during the progress of that work, an employer shall ensure that

- (a) the conductor or equipment is isolated, locked out and connected to ground; or
- (b) other effective procedures are taken to ensure the safety of workers.

## Proximity to Exposed Energized High Voltage Conductors

**460.** (1) In this section, "utility tree trimmer" means a worker who has successfully completed approved training in respect of trimming trees while working near energized high voltage conductors. (*ébrancheur d'arbres de services publics*)

(2) An employer shall ensure that a qualified electrical worker who will be exposed to energized high voltage conductors has received approved training in high voltage safety prior to exposure.

(3) A qualified electrical worker shall not undertake high voltage electrical work unless he or she has

- (a) written proof of having received approved training in high voltage safety; and
- (b) the written proof referred to in paragraph (a) readily accessible while working near energized high voltage conductors.

(4) An employer shall ensure that workers do not work, that material is not piled, stored or handled, that scaffolds are not erected or dismantled and that equipment or powered mobile equipment is not used or operated, within the minimum distance from an exposed energized conductor set out in column 1 of Schedule Y.

(5) Subsection (4) does not apply to a worker who undertakes a specific one-time activity under the direct supervision of a qualified electrical worker.

(6) An employer shall ensure that a worker at ground potential does not approach an exposed energized conductor closer than the minimum distance set out in column 2 of Schedule Y.

(7) An employer shall ensure that a worker does not work closer to an exposed energized conductor than the minimum distance set out in column 2 of Schedule Y, unless the worker is a qualified electrical worker.

(8) If a qualified electrical worker works closer to an exposed energized conductor than the minimum distance set out in column 2 of Schedule Y, the employer shall ensure that

- (a) the qualified electrical worker
  - (i) performs the work in accordance with written instructions for a safe work procedure that have been developed and signed by a competent person who has been appointed by the employer for that purpose,
  - (ii) uses equipment that is approved for intended use, and
  - (iii) uses personal protective equipment that meets the requirements of Part 7; or
- (b) the conductor is operating at 25 kV or less and is fitted with rubber and rubber-like insulating barriers that meet the requirements of an approved standard.

(9) An employer shall ensure that

- (a) no part of a vehicle is operated on a public road, highway, street, lane or alley within the minimum distance from an exposed energized conductor set out in column 3 of Schedule Y; and
- (b) no part of a vehicle's load comes within the minimum distance referred to in paragraph (a).

(10) An employer shall ensure that utility tree trimmers do not work within the minimum distance from an exposed energized conductor set out in

- (a) column 4 of Schedule Y, for utility tree trimmers using conducting objects exposed to energized parts;
- (b) column 5 of Schedule Y, for utility tree trimmers using rated tools exposed to energized parts; and
- (c) column 6 of Schedule Y, for utility tree trimmers using rated insulating booms.

#### Exposed Energized Conductors Operating at Certain Voltages

**461.** If work is carried out in proximity to exposed energized conductors operating at 31 to 750 V, an employer shall ensure that the work is carried out so that accidental contact with the energized conductor is prevented.

### Emergency Program

**462.** (1) If an electrical worker could come in contact with an exposed energized conductor and that contact could endanger the worker, an employer shall develop and implement an emergency program that sets out the procedures to be followed in the event of that contact.

(2) An emergency program developed under subsection (1) must include procedures to

- (a) rescue a worker who has come into contact with a live conductor;
- (b) administer first aid to a worker who has sustained an electric shock; and
- (c) obtain medical assistance.

(3) An employer shall ensure that workers are adequately trained to implement an emergency program developed and implemented under this section.

### PART 31 ADDITIONAL PROTECTION FOR HEALTH CARE WORKERS

#### Interpretation

**463.** In this Part,

"health care facility" means

- (a) a health care facility as defined in subsection 1(1) of the *Workers' Compensation Act*,
- (b) a health facility as defined in section 1 of the *Hospital Insurance and Health and Social Services Administration Act*,
- (c) a hospital as defined in subsection 1(1) of the *Hospital Standards Regulations*,
- (d) a laboratory facility that is located in, or that provides services to a health care facility,
- (e) a work site that provides testing, diagnosis, treatment or care to a patient, resident or client for the purpose of improving or maintaining the physical or mental health of the patient, resident or client,
- (f) a laundry facility that is located in, or that provides services to a health care facility,
- (g) an air ambulance or other ambulance service,
- (h) a medical office or clinic where persons practise medicine as defined in section 1 of the *Medical Profession Act* or practise nursing as defined in section 1 of the *Nursing Act*,
- (i) a dental office or clinic where dentistry as defined in section 1 of the *Dental Profession Act* is practised,

- (j) a veterinary office or clinic where veterinary surgery as defined in section 1 of the *Veterinary Profession Act* is practised,
- (k) a post-mortem facility for humans or animals, or
- (l) a facility that processes human anatomical waste, including a funeral home or crematorium; (*établissement de soins de santé*)

"percutaneous" means a route of entry that is through the skin or mucous membrane, and includes subcutaneous, intramuscular and intravascular routes of entry; (*percutané*)

"waste" means biomedical or pharmaceutical material or substances that

- (a) are hazardous to the health or safety of a worker, and
- (b) require special handling precautions, decontamination procedures or disposal, such as
  - (i) human anatomical waste,
  - (ii) animal anatomical waste,
  - (iii) microbiological laboratory waste,
  - (iv) blood and body fluid waste, and
  - (v) used or contaminated needles, syringes, blades, clinical glass and other clinical items that are capable of causing a cut or puncture. (*déchets*)

#### Application of Part

**464.** This Part applies to health care facilities.

#### Patient Moving and Handling

**465.** (1) If workers are required or permitted to lift, hold, turn or transfer patients, residents or clients, an employer shall

- (a) in consultation with the Committee or representative, develop
  - (i) written procedures to be used in assessing whether a patient, resident or client requires assistance to move, and
  - (ii) written procedures that workers must use when lifting, holding, turning or transferring a patient, resident or client;
- (b) implement the procedures developed under paragraph (a);
- (c) make readily available for reference by workers a copy of the procedures developed under paragraph (a);
- (d) if the procedures developed under paragraph (a) requires the use of mechanical devices, provide mechanical devices, sufficient in quantity and quality, to protect the health and safety of workers to assist with lifting, holding, turning or transferring patients, residents or clients;
- (e) ensure that workers use and maintain the mechanical devices provided under paragraph (d) according to the manufacturer's specifications; and

- (f) ensure that workers
  - (i) are instructed in the causes of injuries resulting from lifting, holding, turning or transferring patients, residents or clients, and the means to prevent those injuries,
  - (ii) are trained in and use the procedures for lifting, holding, turning and transferring patients, residents or clients, and
  - (iii) are trained in the use of the mechanical devices provided under paragraph (d).

(2) If a patient, resident or client has been assessed as requiring assistance to move, an employer shall ensure that the status of the patient, resident or client, and that appropriate techniques to lift, hold, turn or transfer the patient, resident or client are clearly identified in writing or by other visual means at or near the location of the patient, resident or client.

(3) An employer, in consultation with the Committee or representative or, if no Committee or representative is available, the workers, shall review injuries resulting from lifting, holding, turning or transferring patients, residents or clients, to determine the causes of the injuries.

(4) An employer shall take appropriate action to prevent future occurrence of injuries similar to those reviewed under subsection (3).

(5) If procedures developed under paragraph (1)(a) specify the use of a mechanical device or the assistance of another worker, an employer shall not require or permit a worker to lift, hold, turn or transfer a patient, resident or client without the use of the device or the assistance of the other worker.

#### Cytotoxic Drugs

**466.** (1) In this section, "cytotoxic drugs" means drugs that

- (a) inhibit or prevent the functions of cells; and
- (b) are manufactured, sold or represented for use in treating neoplastic or other conditions. (*médicaments cytotoxiques*)

(2) An employer shall, to the extent that is reasonably possible, take steps to minimize the exposure of workers to cytotoxic drugs or to materials or equipment contaminated with cytotoxic drugs.

(3) If workers prepare parenteral cytotoxic drugs on a frequent and continuing basis, an employer shall provide and maintain an approved biological safety cabinet in accordance with subsection (4) and ensure that workers use the cabinet safely.

- (4) A biological safety cabinet must be
  - (a) inspected and certified by a competent person not less than once each a year, and when the biological safety cabinet is moved; and

- (b) used and maintained according to an approved procedure or the manufacturer's specifications.

(5) If workers are required or permitted to prepare, administer, handle or use cytotoxic drugs or are likely to be exposed to cytotoxic drugs, an employer, in consultation with the Committee or representative, shall develop a written program to protect the health and safety of workers who could be exposed to cytotoxic drugs or to materials or equipment contaminated with cytotoxic drugs.

- (6) A program developed under subsection (5) must include
  - (a) measures to be taken to identify, store, prepare, administer, handle, use, transport and dispose of cytotoxic drugs and materials contaminated with cytotoxic drugs;
  - (b) emergency steps to be followed in the event of
    - (i) a spill or leak of a cytotoxic drug, or
    - (ii) worker exposure to cytotoxic drugs by a puncture of the skin, absorption through the skin, contact with an eye, inhalation of drug dust or ingestion of a contaminated substance;
  - (c) methods to be followed in maintaining and disposing of equipment contaminated with cytotoxic drugs;
  - (d) details of engineering controls, work practices, hygiene practices and facilities, approved respiratory protective devices, approved eye or face protectors and other personal protective equipment and decontamination materials and equipment that are appropriate in the circumstances; and
  - (e) details of approved biological safety cabinets for the preparation of cytotoxic drugs and the methods to be followed in maintaining the cabinets.
- (7) An employer shall, in respect of a program developed under subsection (5),
  - (a) implement the program;
  - (b) ensure that workers who could be exposed to cytotoxic drugs or to materials or equipment contaminated with cytotoxic drugs are trained in the program; and
  - (c) make copies of the program readily available for reference by workers.

#### Waste

- 467.** (1) If exposure to waste is likely to endanger the health or safety of a worker, an employer shall develop and implement a process that ensures the waste is
- (a) segregated at the place where the waste is located or produced;
  - (b) contained in a secure, clearly labelled package or container that holds the contents safely until it is cleaned, decontaminated or disposed of; and

- (c) cleaned, decontaminated or disposed of in a manner that will not endanger the health or safety of workers.

(2) An employer shall ensure that a worker who generates, collects, transports, cleans, decontaminates or disposes of waste or launders contaminated laundry as defined in subsection 470(1)

- (a) is trained in safe work practices and procedures;
- (b) is provided with personal protective equipment that is appropriate to the worker's work; and
- (c) uses the safe work practices and procedures and the personal protective equipment referred to in paragraphs (a) and (b).

#### Equipment Contaminated with Waste

**468.** An employer shall ensure that, if reasonably possible, equipment that has been contaminated with waste is inspected and decontaminated before it is repaired or shipped for repair.

#### Waste Needles

**469.** (1) An employer shall provide readily accessible containers for waste needles, syringes, blades, clinical glass and any other clinical items that are capable of causing a cut or puncture, and shall ensure that workers use those containers.

(2) The containers required by subsection (1) must

- (a) have a fill line;
- (b) be clearly identified as containing hazardous waste; and
- (c) be sturdy enough to resist puncture under normal conditions of use and handling until the containers are disposed of.

(3) An employer shall ensure that workers do not manually clip, bend, break or recap waste needles.

#### Contaminated Laundry

**470.** (1) In this section, "contaminated laundry" means laundry that has been contaminated by waste. (*linge contamin *)

(2) An employer shall ensure that workers handle contaminated laundry as little as possible to prevent gross microbial contamination of the air and of the workers handling the laundry.

(3) An employer shall ensure that an area where contaminated laundry is sorted is separated from an area where clean laundry is sorted by one or more of the following:

- (a) a physical barrier;
- (b) a negative air pressure system in the contaminated laundry area;



- (c) a positive air flow from the clean laundry area through the contaminated laundry area.

#### Selecting Needle-Safe Devices

- 471.** (1) In this section and in section 472, "contaminated" means contaminated with
- (a) human blood,
  - (b) fluids containing visible amounts of human blood, or
  - (c) any of the following potentially infectious human bodily fluids:
    - (i) semen,
    - (ii) vaginal secretions,
    - (iii) cerebrospinal fluid,
    - (iv) synovial fluid,
    - (v) pleural fluid,
    - (vi) pericardial fluid,
    - (vii) peritoneal fluid,
    - (viii) amniotic fluid,
    - (ix) saliva,
    - (x) breast milk,
    - (xi) fluids from unfixed tissue or organs, other than intact skin, from a human, living or dead,
    - (xii) cell, tissue or organ cultures, or other solutions, that could contain a human blood-borne infectious organism, or
    - (xiii) fluids from tissues of experimental animals infected with a blood-borne infectious organism from a human source; (*contaminé*)

"needles with engineered sharps injury protections" means hollow bore needles or devices with hollow bore needles that

- (a) are commercially available,
- (b) are approved as medical devices by Health Canada under the *Food and Drugs Act* (Canada),
- (c) have a built-in safety feature or mechanism that eliminates or minimizes the risk of a percutaneous injury, and
- (d) are used for purposes that include
  - (i) withdrawing bodily fluids,
  - (ii) accessing a vein or artery, and
  - (iii) administering medications or other fluids; (*aiguilles dotées de mesures de protection techniques contre les blessures par objets pointus et tranchants*)

"needleless system" means a commercially available device approved as a medical device by Health Canada under the *Food and Drugs Act* (Canada) and that replaces a hollow bore needle for use in

- (a) the collection of bodily fluids,

- (b) the withdrawal of bodily fluids after initial venous or arterial access is established,
- (c) the administering of medication or fluids, or
- (d) any other procedure where it is reasonably anticipated that a worker could suffer a percutaneous injury with a contaminated hollow bore needle; (*système sans aiguille*)

"public health emergency" means

- (a) an emergency where a declaration of a state of emergency or of a state of local emergency is made under subsection 11(1) or 16(1) of the *Emergency Measures Act*, or
- (b) where a public welfare emergency is proclaimed under subsection 6(1) of the *Emergencies Act* (Canada), that involves
  - (i) an epidemic or pandemic disease, or
  - (ii) a novel and fatal infectious agent or associated biological toxin. (*urgence de santé publique*)

(2) This section and section 472 also applies to

- (a) correctional centres as defined in section 1 of the *Corrections Act*; and
- (b) youth custody facilities as defined in subsection 2(1) of the *Youth Criminal Justice Act* (Canada).

(3) Subject to subsection (4), for tasks and procedures where it is reasonably anticipated that a worker could suffer a percutaneous injury from a contaminated hollow bore needle, an employer shall

- (a) identify, evaluate and select needles with engineered sharps injury protections or needleless systems, in consultation with the Committee or representative; and
- (b) ensure that the needles with engineered sharps injury protections and needleless systems selected under paragraph (a) are used.

(4) Subsection (3) does not apply

- (a) if the employer can demonstrate that needles with engineered sharps injury protections or needleless systems pose an additional risk to a worker;
- (b) to biological or antibiotic products in injection-ready needle devices that are present in Nunavut;
- (c) to needles or needle devices that are obtained before or during a public health emergency; or
- (d) if a needle with engineered sharps injury protections or a needleless system requires Health Canada's approval for use in a national program, including blood collection and vaccination programs, until the day on which Health Canada approves a needle with engineered sharps injury protections or a needleless system for use in a national program.

### Injury Log

**472.** (1) An employer shall maintain an injury log for exposures involving a percutaneous injury with a sharp.

- (2) Entries in the injury log maintained under subsection (1) must
- (a) protect the confidentiality of the exposed worker; and
  - (b) contain
    - (i) the type and brand of the device involved in the exposure incident,
    - (ii) the department or work area in which the exposure occurred, and
    - (iii) an explanation of how the exposure occurred.

### Anaesthetic Gases

**473.** If workers are required or permitted to handle or use anaesthetic gases and vapours or are likely to be exposed to anaesthetic gases and vapours, an employer shall

- (a) develop safe work practices and procedures to eliminate or reduce the concentration of anaesthetic gases and vapours in the air of the room during the administration of the anaesthetic gases;
- (b) train workers in the safe work practices and procedures developed under paragraph (a) and ensure that workers use those safe work practices and procedures;
- (c) ensure that anaesthetic gas hoses, connections, tubing, bags and associated equipment are inspected for leakage before each use and not less than once each week;
- (d) ensure that rooms where anaesthetic gases are administered are, if reasonably possible, ventilated at a rate of 15 air changes per hour;
- (e) on or before handling or use, install an effective waste anaesthetic gas scavenging system to collect, remove and dispose of waste anaesthetic gases and vapours;
- (f) ensure that leakage from a waste anaesthetic gas scavenging system installed under paragraph (e) is less than 100 mL per minute when tested according to an approved standard; and
- (g) ensure that the waste anaesthetic gas scavenging system and the equipment used to administer anaesthetic gases are maintained.

### Ethylene Oxide Sterilizers

**474.** (1) In this section,

"CSA sterilizer standard" means Canadian Standards Association standard CAN/CSA-Z314.1-09 *Ethylene Oxide Sterilizers for Health Care Facilities*, as amended from time to time; (*norme de la CSA sur les stérilisateurs*)

"CSA installation standard" means the Canadian Standards Association standard CAN/CSA-Z314.9-09 *Installation, Ventilation, and Safe Use of Ethylene Oxide Sterilizers in Health Care Facilities*, as amended from time to time. (*norme d'installation de la CSA*)

- (2) The CSA installation standard and CSA sterilizer standard are adopted.
- (3) An employer shall ensure that, to the extent that is reasonably possible, ethylene oxide sterilizers at a work site are operated and maintained in accordance with the CSA installation standard.
- (4) An employer shall, in consultation with the Committee or representative or, if there is no Committee or representative available, the workers, develop
  - (a) safe work practices and policies that meet the requirements of the CSA installation standard; and
  - (b) an emergency response program to detect, control and respond to leaks or spills of ethylene oxide that meets the requirements of the CSA installation standard.
- (5) An employer shall
  - (a) implement the safe work practices and policies and the emergency response program developed under subsection (4); and
  - (b) ensure that workers who operate ethylene oxide sterilizers and workers who could come into contact with ethylene oxide
    - (i) are trained in accordance with the CSA installation standard, and
    - (ii) follow the safe work practices and policies and the emergency response program developed under subsection (4).
- (6) An employer shall ensure that an area where ethylene oxide is used or stored has clearly legible signs posted that state "Ethylene Oxide Area, Potential Cancer and Reproductive Hazard, Authorized Personnel Only".
- (7) An employer shall ensure that records of equipment maintenance and accidental ethylene oxide leakages are kept for five years in a log book located in the ethylene oxide sterilization area.
- (8) An employer shall ensure that an ethylene oxide sterilizer
  - (a) is constructed in accordance with the CSA sterilizer standard;
  - (b) is installed in accordance with and meets the ventilation requirements of the CSA installation standard; and

- (c) if reasonably possible, is a sterilizer with in-chamber aeration that allows sterilization and aeration to take place without manually transferring the items that are being sterilized and aerated from one piece of equipment to another.
- (9) An employer shall ensure that portable ethylene oxide sterilizers are
- (a) operated in a fume cabinet; or
  - (b) placed in a self-contained room that is unoccupied during the sterilization process and is ventilated clear of the work site at a minimum rate of 10 air changes per hour to prevent the accumulation of the gas in the room.

#### Review of Programs

**475.** (1) An employer shall ensure that programs, training, work practices, procedures and policies developed in accordance with this Part are reviewed and, if necessary, revised not less than once every three years and whenever there is a change of circumstances that could affect the health or safety of workers.

(2) An employer shall carry out the review and revision referred to in subsection (1) in consultation with the Committee or representative or, if there is no Committee or representative available, the workers.

### PART 32 ADDITIONAL PROTECTION FOR FIREFIGHTERS

#### Interpretation

**476.** In this Part,

"firefighter" has the meaning assigned to it by subsection 14.1(1) of the *Workers' Compensation Act*; (*pompier*)

"firefighting vehicle" means a specialized vehicle that carries an assortment of tools and equipment for use by firefighters; (*véhicule de lutte contre les incendies*)

"Fire Marshal" means the Fire Marshal appointed under paragraph 2(1)(a) of the *Fire Prevention Act*. (*commissaire aux incendies*).

#### Application of Part

**477.** (1) The Chief Safety Officer may, at the request of the Fire Marshal, exempt a volunteer fire department from being required to comply with any provision of this Part.

(2) If an exemption is given under subsection (1), it shall expire one year after the exemption is given.

### Plan for Response to Emergency Incident

**478.** (1) In this section, "standard operating procedure" means an operational directive prepared by an employer that establishes a standard course of action for firefighters to follow in respect of emergency incidents to which firefighters could respond. (*procédure opérationnelle normalisée*)

(2) An employer, in consultation with the Committee or representative or, if there is no Committee or representative available, the firefighters, shall develop a written plan that establishes procedures to be followed by firefighters in fighting fires.

- (3) A plan required by subsection (2) must include
- (a) identification of standard firefighting functions, including functions that must be performed simultaneously;
  - (b) the minimum number of firefighters required to perform safely each identified firefighting function, based on written standard operating procedures;
  - (c) the number and types of firefighting vehicles and firefighters required for the initial response to each type of incident;
  - (d) the total complement of firefighting vehicles and firefighters to be dispatched in response to each type of incident;
  - (e) a description of typical emergency operations, including alarm time, response time, arrival sequence and responsibility for initiating standard operating procedures necessary to protect the health and safety of firefighters;
  - (f) a description of the incident management system; and
  - (g) a description of the personnel accountability system.
- (4) An employer shall
- (a) ensure that a plan developed under subsection (2) is implemented; and
  - (b) make copies of the plan readily available to firefighters.

### Training of Firefighters

**479.** (1) An employer shall ensure that

- (a) a firefighter receives training necessary to ensure that the firefighter is able to safely carry out his or her duties;
- (b) training required by paragraph (a) is provided by competent persons; and
- (c) written records are kept of training delivered to each firefighter.

(2) An employer shall ensure that each firefighting vehicle used is operated by a competent operator.

### General Standards for Vehicles and Equipment

**480.** An employer shall ensure that firefighting vehicles and other equipment for use in emergency operations are designed, constructed and operated so as to protect adequately the health and safety of firefighters and are maintained.

#### Securing of Equipment in Vehicles

**481.** If equipment or personal protective equipment is carried within a seating area of a firefighting vehicle, an employer shall ensure that

- (a) the equipment is secured
  - (i) by a positive mechanical means of holding the item in a stowed position, or
  - (ii) in a compartment with a positive latching door; and
- (b) the compartment referred to in subparagraph (a)(ii) is designed to minimize injury to firefighters in the seating area of the vehicle.

#### Inspection of Firefighting Vehicles and Equipment

**482.** An employer shall ensure that

- (a) firefighting vehicles and firefighting equipment are inspected by a competent person for defects and unsafe condition as often as is necessary to ensure that the vehicles and equipment can be safely operated;
- (b) if a defect or unsafe condition is identified in a firefighting vehicle or firefighting equipment,
  - (i) steps are taken, without delay, to protect the health and safety of firefighters who could be endangered until the defect is repaired or the condition is corrected, and
  - (ii) as soon as is reasonably possible, the defect is repaired or the condition is corrected; and
- (c) written records are, in respect of inspections carried out under paragraph (a),
  - (i) signed by the competent person who performed the inspection, and
  - (ii) kept at the work site and made readily available to the Committee or representative and the firefighters.

#### Repair of Firefighting Vehicles

**483.** An employer shall ensure that

- (a) repairs to firefighting vehicles are made in accordance with the vehicle manufacturer's specifications and by qualified individuals; and

- (b) written records are, in respect of repairs made under paragraph (a), kept at the work site and made readily available to the Committee or representative and the firefighters.

#### Transportation of Firefighters

- 484.** (1) Subject to subsection (3), an employer shall ensure that
- (a) firefighting vehicles are provided with safe crew accommodations within the body of the vehicle and are equipped with properly secured seats and seat belts;
  - (b) while a firefighting vehicle is transporting firefighters, each firefighter is seated and uses a seat belt when the vehicle is in motion; and
  - (c) firefighters do not ride on the tailstep, side steps, running boards or in any other exposed position on a firefighting vehicle.

(2) If there is an insufficient number of seats available for the number of firefighters who are assigned to or expected to ride on a firefighting vehicle, an employer shall ensure that there is a safe alternate means of transportation for those firefighters.

(3) Paragraphs (1)(b) and (c) do not apply if a firefighter is fighting a forest, prairie, grassland or crop fire, and the employer ensures that

- (a) a restraining device is used to prevent the firefighter from falling from the firefighting vehicle;
- (b) an effective means of communication between the firefighter and the operator of the firefighting vehicle is provided; and
- (c) a firefighter does not operate the firefighting vehicle at a speed that exceeds 20 km/h.

#### Personal Protective Equipment

**485.** An employer shall provide to a firefighter and ensure that the firefighter uses approved personal protective equipment, that is

- (a) appropriate to the hazards that the firefighter could encounter; and
- (b) adequate to protect the health and safety of the firefighter.

#### Interior Structural Firefighting

**486.** (1) In this section, "interior structural firefighting" means fighting fires inside buildings or enclosed structures. (*lutte contre les incendies intérieurs de bâtiment*)

(2) If firefighters are required or permitted to engage in interior structural firefighting, an employer shall ensure that

- (a) the firefighters work in teams; and



- (b) a suitably equipped rescue team is readily available outside the structure to rescue any endangered firefighter should a firefighter's SCBA fail or the firefighter become incapacitated for any other reason.

#### Personal Alert Safety System

- 487.** (1) If a firefighter is required or permitted to enter a structure, an employer shall
- (a) provide the firefighter with an approved personal alert safety system device; and
  - (b) ensure that the firefighter uses the device.

(2) An employer shall ensure that each personal alert safety system device is tested not less than once each month and before each use, and maintained in accordance with the manufacturer's specifications.

#### Safety Ropes, Harnesses and Hardware

- 488.** An employer shall provide for use by firefighters and ensure that the firefighters use approved safety ropes, harnesses and hardware that are
- (a) appropriate to the nature of the conditions that the firefighter is expected to encounter; and
  - (b) adequate to protect the health and safety of the firefighter.

### PART 33 REPEAL AND COMMENCEMENT

#### Repeal

- 489.** The following regulations are repealed:
- (a) *Asbestos Safety Regulations*, established by regulation numbered **R-016-92**;
  - (b) *Environmental Tobacco Smoke Work Site Regulations*, established by regulation numbered **R-027-2003**;
  - (c) *General Safety Regulations*, R.R.N.W.T. 1990,c.S-1;
  - (d) *Safety Forms Regulations*, established by regulation numbered **R-102-91**;
  - (e) *Silica Sandblasting Safety Regulations*, established by regulation numbered **R-015-92**;
  - (f) *Work Site Hazardous Materials Information System Regulations*, R.R.N.W.T. 1990,c.S-2.

## SCHEDULE A (Sections 1 and 58(2))

## Minimum Requirements for Level 1 First Aid Qualification

1. First aid training course:
  - (1) Course duration: 14 - 16 hours
  - (2) Course Content:
    - (a) the role of the first aid attendant;
    - (b) interaction with higher-level trained personnel and with medical care agencies;
    - (c) medico-legal aspects of first aid;
    - (d) responsibilities of the first aid attendant;
    - (e) knowledge of the ambulance system;
    - (f) basic anatomy and physiology: how the body systems work;
    - (g) patient assessment: primary and secondary surveys;
    - (h) assessment and monitoring of basic vital signs;
    - (i) respiratory emergencies: respiratory system review, management of airways;
    - (j) chest injuries: pneumothorax, flail chest, sucking chest wound;
    - (k) circulatory system review, heart attack, stroke;
    - (l) bleeding: wounds, control of bleeding and bandaging;
    - (m) barrier devices to prevent the transmission of pathogens;
    - (n) shock: signs and symptoms;
    - (o) abdominal injuries: system review by quadrant;
    - (p) stabilization: head, spine and pelvis injuries;
    - (q) upper and lower extremity injuries;
    - (r) medical emergencies: epilepsy, diabetes;
    - (s) assessment and treatment of burns;
    - (t) assessment and treatment of poisonings and acute effects of abused drugs;
    - (u) problems of heat and cold;
    - (v) emotional problems;
    - (w) movement of a casualty;
    - (x) situation simulations, reporting on the patient to higher-level trained personnel;
    - (y) understanding of and familiarity with relevant provisions of the *Safety Act* and *Occupational Health and Safety Regulations*.
2. Cardiopulmonary resuscitation training course:
  - (1) Course duration: 4 - 6 hours

- (2) Course Content:
  - (a) risk factors;
  - (b) signals and actions of heart attack and stroke;
  - (c) airway obstruction: prevention, causes, recognition;
  - (d) entrance into the emergency medical services system;
  - (e) one rescuer cardiopulmonary resuscitation (adult);
  - (f) treatment of an adult with an obstructed airway;
  - (g) turning of the casualty into the recovery position.

SCHEDULE B                      (*Sections 1, subsection 58(2)*  
*and section 426*)

Minimum Requirements for Level 2 First Aid Qualification

1. First aid training course:
  - (1) Course duration: 60 - 80 hours
    - (a) It is recommended that the review and practice time should be not less than 20 hours.
  - (2) Course Content:
    - (a) roles and responsibility: knowledge of emergency medical system, the place of the first aid attendant in the system, and other skill levels in the system;
    - (b) the different phases of emergency medical care;
    - (c) adequate training in the use of first aid equipment;
    - (d) primary and secondary survey of the casualty;
    - (e) monitoring and assessment of vital signs;
    - (f) bleeding: wounds, control of bleeding and bandaging;
    - (g) barrier devices to prevent the transmission of pathogens;
    - (h) airway management and use of relevant equipment (e.g. bag valve, mask resuscitator, oxygen equipment);
    - (i) assessment and treatment of common medical emergencies;
    - (j) assessment and treatment of shock;
    - (k) trauma to head, spine, chest, abdomen and pelvis;
    - (l) injuries to extremities;
    - (m) environmental emergencies;
    - (n) crisis intervention: provision of psychological support;
    - (o) first on the scene management skills, triage;
    - (p) assessment and treatment of burns;
    - (q) obstetrics: emergency delivery and post-partum haemorrhage;
    - (r) recognition of the acute signs and symptoms of drug abuse and treatment of the casualty;
    - (s) assessment and treatment of the acute (e.g. distended or tender) abdomen;
    - (t) basic extrication of the casualty from immediate danger;
    - (u) record keeping: preservation of information necessary for subsequent action;
    - (v) understanding of and familiarity with relevant provisions of the *Safety Act* and *Occupational Health and Safety Regulations*.

2. Cardiopulmonary resuscitation training course:

- (1) Course duration: 8 - 10 hours
- (2) Course Content:
  - (a) risk factors;
  - (b) signals and actions of heart attack and stroke;
  - (c) airway obstruction: prevention, causes, recognition;
  - (d) entrance into the emergency medical services system;
  - (e) one rescuer cardiopulmonary resuscitation;
  - (f) two rescuer cardiopulmonary resuscitation;
  - (g) treatment of an adult with an obstructed airway;
  - (h) mouth-to-mask resuscitation;
  - (i) spinal injuries;
  - (j) turning of the casualty into the recovery position.

SCHEDULE C

*(Section 1)*

Activities that Constitute High Hazard Work

1. Building construction
2. Power line construction and maintenance
3. Quarrying and crushing of rocks
4. Local and territorial hauling and trucking
5. Road construction, earth working, tunneling, trenching and excavating
6. Iron and steel processing and fabrication
7. Logging
8. Manufacturing of concrete block, brick, artificial stone and other clay and cement products
9. Swilling

SCHEDULE D (Section 1)

First Aid Services Authorized by a Level 1 Qualification

1. Primary and secondary assessment
2. Cardiopulmonary resuscitation
3. Bandaging and splinting
4. Monitoring vital signs
5. Basic management of medical emergencies
6. Spine stabilization
7. Any other service for which the holder of the Level 1 qualification has acquired additional training from an approved agency

SCHEDULE E

*(Section 1)*

First Aid Services Authorized by a Level 2 Qualification

1. Primary and secondary assessment
2. Cardiopulmonary resuscitation
3. Bandaging and splinting
4. Monitoring vital signs
5. Basic management of medical emergencies
6. Airway management, the use of suction device and bag-valve mask
7. Proper procedures and conditions for the administration of oxygen
8. Use of spinal immobilization devices
9. Psychological support measures
10. Any other service for which the holder of the Level 2 qualification has acquired additional training from an approved agency



## SCHEDULE F (Subsection 10(2))

## Notifiable Medical Conditions Resulting from Occupational Exposure

1. Acute, sub-acute or chronic disease of an organ resulting from exposure to lead, arsenic, beryllium, phosphorus, manganese, cadmium or mercury or their compounds or alloys
2. Neoplasia of the skin or mucous membrane resulting from exposure to tar, pitch, bitumen, mineral or cutting oils or arsenic or their compounds, products or residue
3. Neoplasia of the renal tract in a worker who works in rubber compounding, in dyestuff manufacture or mixing or in a laboratory
4. Pneumoconiosis resulting from exposure to silica or silicate, including asbestos, talc, mica or coal
5. Toxic jaundice resulting from exposure to tetrachloromethane or nitro- or amidoderivatives of benzene or other hepato-toxic or haemato-toxic substances
6. Neoplasia or any form of sickness resulting from internal or external exposure to ionizing radiation or electro-magnetic radiation
7. Poisoning by the anti-cholinesterase action of an organophosphorous or carbamate compound
8. Any form of decompression illness
9. Toxic anaemia resulting from exposure to trinitrotoluene, or any other haematogenic poison, including chronic poisoning by benzene
10. Mesothelioma of the pleura or peritoneum
11. Angiosarcoma of the liver
12. Malignant neoplasm of the nasal cavities resulting from exposure to chromium or its compounds, wood dust or formaldehyde
13. Malignant neoplasm of the scrotum resulting from exposure to petroleum products
14. Malignant neoplasm of lymphatic or haematopoietic tissue resulting from exposure to benzene
15. Cataract resulting from exposure to ionizing radiation, electro-magnetic radiation or nitrophenols

16. Male infertility resulting from exposure to glycol ethers, lead or pesticides
17. Spontaneous abortion resulting from exposure to ethylene oxide or antineoplastic drugs
18. Inflammatory and toxic neuropathy resulting from exposure to organic solvents
19. Asthma resulting from exposure to isocyanates, red cedar, amines, acid anhydride, epoxy resin systems, reactive dyes, metal fumes or salts, enzymes or bisulphites
20. Extrinsic allergic alveolitis resulting from exposure to mould or organic dust

SCHEDULE G(*Subsections 58(1) and (4)*)

## Summary of First Aid Requirements

1. Minimum: Each work site must have a first aid box containing supplies as set out in Schedule H, a manual, a register and emergency information. Additional requirements are listed below:

<b>Number of Workers at Work Site</b>	<b>Close Work Site</b> (½ hour or less to medical facility)	<b>Distant Work Site</b> (½ - 2 hours to medical facility)	<b>Isolated Work Site</b> (More than 2 hours by surface transport to medical facility or by aircraft if normal mode of transport is by aircraft)
1	minimum	minimum	minimum
2 - 4	minimum	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies for high hazard work</li> <li>blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies for high hazard work</li> <li>blankets, stretcher and splints</li> </ul>
5 - 9	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies for high hazard work</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> <li>blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> <li>blankets, stretcher and splints</li> </ul>
10 - 20	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> <li>blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> <li>blankets, stretcher and splints</li> </ul>
21 - 40	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 1 qualification and supplies</li> <li>blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>one first aid attendant with Level 2 qualification and supplies for high hazard work</li> <li>one first aid attendant with Level 1 qualification and supplies for other than high hazard work</li> <li>blankets, stretcher and splints</li> </ul>

41 - 99	minimum plus <ul style="list-style-type: none"> <li>• one first aid attendant with Level 1 qualification and supplies</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>• one first aid attendant with Level 2 qualification and supplies for high hazard work</li> <li>• one first aid attendant with Level 1 qualification and supplies for other than high hazard work</li> <li>• blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>• one EMT for high hazard work</li> <li>• one first aid attendant with Level 2 qualification and supplies for high hazard work</li> <li>• one first aid attendant with Level 1 qualification for other than high hazard work</li> <li>• blankets, stretcher and splints</li> </ul>
100 +	minimum plus <ul style="list-style-type: none"> <li>• two first aid attendants with Level 1 qualification supplies</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>• First aid room</li> <li>• one EMT and one first aid attendant with Level 2 qualification and supplies for high hazard work</li> <li>• two first aid attendants with Level 1 qualification and supplies for other than high hazard work</li> <li>• blankets, stretcher and splints</li> </ul>	minimum plus <ul style="list-style-type: none"> <li>• one EMT for high hazard work</li> <li>• one first aid attendant with Level 2 qualification and supplies for high hazard work</li> <li>• two first aid attendants with Level 2 qualification and supplies for other than hazard work</li> <li>• two first aid attendants with Level 1 qualification and supplies for low high hazard work</li> <li>• blankets, stretcher and splints</li> </ul>

SCHEDULE H *(Subsection 58(4);  
paragraph 60(1)(a) and  
section 63)*

Required Contents of First Aid Box

1. Amounts or quantities of the following supplies and equipment adequate for the expected emergencies, contained in a well-marked container:
  - (1) Antiseptic, wound solution or antiseptic swabs
  - (2) Bandage – triangular, 100 cm folded, and safety pins
  - (3) Bandage – gauze roller, various sizes
  - (4) Bandage – adhesive strips and hypoallergenic adhesive tape
  - (5) Disposable latex or vinyl gloves
  - (6) Dressing – sterile and wrapped gauze pads and compresses, various sizes including abdominal pad size
  - (7) Dressing – self-adherent roller, various sizes
  - (8) Forceps – splinter
  - (9) Pad with shield or tape for eye
  - (10) Pocket mask with disposable one-way re-breathe valves
  - (11) Scissors – bandage
  - (12) Soap

SCHEDULE I

*(Subsection 58(4) and  
paragraph 64(2)(a))*

Additional Supplies and Equipment Level 1 Qualification

1. Bag – ice or cold water
2. Bag – hot water or hot pack
3. Bandage – elastic, 5 cm and 10 cm widths
4. Sterile burn sheet
5. Any other first aid supplies and equipment that are appropriate to the dangers and other circumstances of the work site and commensurate with the training of the first aid attendant

SCHEDULE J

*(Subsection 58(4) and  
paragraph 64(2)(b))*

Additional Supplies and Equipment – Level 2 Qualification

1. Bag – hot water or hot pack
2. Bag – ice or cold water
3. Bag valve and mask resuscitator
4. Bandage – elastic, 5 cm and 10 cm widths
5. Emergency oxygen system
6. Sphygmomanometer
7. Sterile burn sheet
8. Stethoscope with a bell
9. Thermometer
10. Where there are potential causes of spinal injury, short and long spine boards with adequate restraining straps and medium and large cervical collars
11. Any other first aid supplies and equipment that are appropriate to the dangers and other circumstances of the work site and commensurate with the training of the first aid attendant

SCHEDULE K      (*Subsections 75(2), (3) and  
(5)*)

1.      Minimum Number of Toilets Facilities at Work Site

<b>Number of Workers</b>	<b>Number of Toilets</b>
1 to 10	1
11 to 25	2
26 to 50	3
51 to 75	4
76 to 100	5
Add one toilet for each additional unit of 30 workers	



SCHEDULE L (Section 184(1))

1. Minimum Dimensions of Members of Light Duty Wooden<sup>1</sup> Scaffolds  
(Height less than 6m)

Dimensions of Members of Single-  
pole Scaffolds

1	Uprights	38 mm x 89 mm
2	Bearers	2 – 19 mm x 140 mm
3	Ledgers	19 mm x 140 mm
4	Braces	19 mm x 140 mm

Dimensions of Members of Double-pole Scaffolds

1	Uprights	38 mm x 89 mm;
2	Bearers	2 – 19 mm x 140 mm
3	Ledgers	19 mm x 140 mm
4	Braces	19 mm x 140 mm

Dimensions of Members of Bracket Scaffolds

1	Uprights	38 mm x 89 mm
2	Bearers	38 mm x 89 mm
3	Braces	38 mm x 89 mm
4	Gusset <sup>2</sup>	19 mm plywood

<sup>1</sup> Number 1 structural grade spruce lumber or material of equivalent or greater strength.

<sup>2</sup> "Gusset" means a brace or angle bracket that is used to stiffen a corner or angular piece of work.

## SCHEDULE M

*(Section 210(1))*

## Minimum Training Requirements for Competent Operator of a Crane

## 1. Course Content

- (1) Occupational Health and Safety Regulations, Related to Cranes:
  - (a) Duties of employers and operators
  - (b) Protection of workers
  - (c) Approved standards for cranes
  - (d) Operation of cranes
  - (e) Maintenance of cranes
  - (f) Signalling
- (2) Types of Cranes:
  - (a) Terminology
  - (b) Types of cranes
  - (c) Specific design of crane to be operated
  - (d) Basic geometry of cranes, including effect of configuration changes and operating in different quadrants
- (3) Site Evaluation:
  - (a) Check route of travel, clearances and ground conditions, including the presence of structures, power lines or other equipment that could constitute a hazard
  - (b) Check site of operation, including the nature of ground, gradients, stabilizers, tire pressure and blocking under outriggers
  - (c) Identify potentially dangerous situations and the appropriate response
- (4) Crane Controls:
  - (a) Identify and use controls
  - (b) Pre-start check
  - (c) Start-up
  - (d) Shut-down
  - (e) Post-operating check
  - (f) Perform operating adjustments
- (5) Operation of Crane:
  - (a) Movement to location
  - (b) Set-up; extend stabilizers and outriggers
  - (c) Change configuration; insert boom sections; extensions; jibs; counterweights
  - (d) Check for safety of other persons before movement
  - (e) Safety precautions while crane is unattended, in storage or in transit

- (6) Load Estimation:
    - (a) Load gauge incorporated in the crane
    - (b) Calculation of load from material density and volume
    - (c) Incorporate weight of attachments, hook, block and headache ball
  
  - (7) Establish Capability of Crane:
    - (a) Implications of moments, leverage and mechanical advantage on capability
    - (b) Use of load charts to determine capability
    - (c) Effect of boom length, angle and load radius
    - (d) Effect of configuration changes, boom extension and jib
    - (e) Centre of gravity
    - (f) Abnormal loading; wind velocity
    - (g) Multi-crane hoists
  
  - (8) Rigging:
    - (a) Inspection of ropes and rigging equipment
    - (b) Reeving: sheaves; spools; drums; wire ropes
    - (c) Rigging loads: hooks; safety catches; shackles; end fittings and connections
    - (d) Rigging slings: configurations; angles; safe working loads
    - (e) Safety factors for loads and workers
  
  - (9) Signalling:
    - (a) Designated signaller: position; visibility; number
    - (b) Methods of signaling: hand; radio
    - (c) Standard hand signals
  
  - (10) Maintenance of Crane:
    - (a) Maintenance schedule; planned preventative maintenance
    - (b) Inspection and repair procedures
    - (c) Blocking and the safe position of parts during maintenance
    - (d) Wire rope inspection and maintenance
  
  - (11) Log Books:
    - (a) Record inspections, maintenance, calibrations and work activities
    - (b) Hours of service
    - (c) Signed by employer and person performing inspection, maintenance and calibration
2. Course Duration:
- (1) Overhead travelling crane or hoist: 40 hours, classroom and practical.
  - (2) Tower or mobile crane: 100 hours, classroom and practical.

- (3) Crane used to raise or lower a worker in a personnel-lifting unit on a hoist line: 20 hours of classroom and 200 hours of practical experience operating the crane in addition to the requirements set out in subsections (1) and (2).

SCHEDULE N

(Paragraphs 269(2)(a) and 270(2)(a))

Excavation and Trench Shoring

Trench or Excavation Depth	Soil Type	Uprights	Braces				Wales
			Width of Excavation or Trench at Brace Location		Brace Spacing		
			1.8 m to 3.6 m	Up to 1.8 m	Vertical	Horizontal	
3.0 m or less	1234	50 mm x 200 mm at 1.2 m o/c* 50 mm x 200 mm at 1.2 m o/c* 50 mm x 200 mm at 10 mm gap 75 mm x 200 mm at 10 mm gap	200 mm x 200 mm 200 mm x 200 mm 200 mm x 200 mm 250 mm x 250 mm	150 mm x 150 mm 150 mm x 150 mm 200 mm x 200 mm 200 mm x 200 mm	1.2 m 1.2 m 1.2 m 1.2 m	2.4 m 2.4 m 2.4 m 2.4 m	**200 mm x 200 mm **200 mm x 200 mm 250 mm x 250 mm 300 mm x 300 mm
Over 3.0 m to 4.5 m	123	50 mm x 200 mm at 10 mm gap 50 mm x 200 mm at 10 mm gap 50 mm x 200 mm at 10 mm gap	200 mm x 200 mm 200 mm x 200 mm 250 mm x 250 mm	150 mm x 150 mm 200 mm x 200 mm 250 mm x 250 mm	1.2 m 1.2 m 1.2 m	2.4 m 2.4 m 2.4 m	200 mm x 200 mm 250 mm x 250 mm 250 mm x 250 mm
Over 3.0 m to 4.0 m***	4	75 mm x 200 mm at 10 mm gap	300 mm x 300 mm	300 mm x 300 mm	1.2 m	2.4 m	300 mm x 300 mm
Over 4.5 m to 6.0 m***	123	50 mm x 200 mm at 10 mm gap 50 mm x 200 mm at 10 mm gap 50 mm x 200 mm at 10 mm gap	200 mm x 200 mm 200 mm x 200 mm 200 mm x 200 mm	200 mm x 200 mm 250 mm x 250 mm 300 mm x 300 mm	1.2 m 1.2 m 1.2 m	2.4 m 2.4 m 2.4 m	200 mm x 200 mm 250 mm x 250 mm 300 mm x 300 mm

\* Note: "o/c" means or closer.

\*\* Note: for excavations and trenches to 3 m depth in soil types 1 and 2, the wales can be omitted if the braces are used at 1.2 m horizontal spacings.

\*\*\* For depths exceeding 4 m for soil type 4 and depths exceeding 6 m for other soil types, see subsection 280(3).

SCHEDULE O *(Paragraph 281(3)(a) and sections 314, 316 and 380)*

Contamination Limits

Also check Schedules P and Q for substances  
(such as asbestos and benzene) with additional requirements

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
75-07-0	Acetaldehyde	**C25 ppm		Schedule R
64-19-7	Acetic acid	10 ppm	15 ppm	
108-24-7	Acetic anhydride	5 ppm	10 ppm	
67-64-1	Acetone	500 ppm	750 ppm	
75-86-5	Acetone cyanohydrin, as CN	**C5 mg/m <sup>3</sup>		Skin
75-05-8	Acetonitrile	20 ppm	30 ppm	Skin
98-86-2	Acetophenone	10 ppm	15 ppm	
79-27-6	Acetylene tetrabromide	1 ppm	3 ppm	
50-78-2	Acetylsalicylic acid	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
107-02-8	Acrolein	**C0.1 ppm		Skin
79-06-1	Acrylamide (inhalable fraction and vapour)	0.03 mg/m <sup>3</sup>	0.09 mg/m <sup>3</sup>	Schedule R, Skin
79-10-7	Acrylic acid	2 ppm	4 ppm	Skin
107-13-1	Acrylonitrile	2 ppm	4 ppm	Skin, Schedule R
124-04-9	Adipic acid	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
111-69-3	Adiponitrile	2 ppm	4 ppm	Skin
309-00-2	Aldrin	0.25 mg/m <sup>3</sup>	0.75 mg/m <sup>3</sup>	Skin
	Aliphatic hydrocarbon gases, Alkane [C1-C4]	1000 ppm	1250 ppm	
107-18-6	Allyl alcohol	0.5 ppm	1.5 ppm	Skin
107-05-1	Allyl chloride	1 ppm	2 ppm	
106-92-3	Allyl glycidyl ether (AGE)	1 ppm	3 ppm	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
2179-59-1	Allyl propyl disulphide	0.5 ppm	1.5 ppm	SEN
7429-90-5	Aluminum and compounds (as Al):			
-	Metal dust	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Pyro powders	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
-	Soluble salts	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
-	Alkyls, not otherwise specified	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
1344-28-1	Aluminum oxide	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
504-29-0	2-Aminopyridine	0.5 ppm	1.0 ppm	
61-82-5	Amitrole	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Schedule R
7664-41-7	Ammonia	25 ppm	35 ppm	
3734642	Ammonium chloride fume	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
3825-26-1	Ammonium perfluorooctanoate	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Skin
2145220	Ammonium sulphamate (Ammate)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
994-05-8	tert-Amyl methyl ether (TAME)	20 ppm	30 ppm	
62-53-3	Aniline	2 ppm	4 ppm	Skin
90-04-0	o-Anisidine	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin, Schedule R
104-94-9	p-Anisidine	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
7440-36-0	Antimony and compounds, (as Sb)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
86-88-4	ANTU (alpha-Naphthyl thiourea)	0.3 mg/m <sup>3</sup>	0.9 mg/m <sup>3</sup>	
7440-38-2	Arsenic, and inorganic compounds, (as As)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Schedule R
7784-42-1	Arsine	0.05 ppm	0.15 ppm	
8052-42-4	Asphalt (bitumen) fume, as benzene soluble aerosol (inhalable fraction)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
1912-24-9	Atrazine	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Schedule R
86-50-0	Azinphos-methyl (inhalable fraction and vapour)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin; SEN
7440-39-3	Barium and soluble compounds, (as Ba)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
7727-43-7	Barium sulphate	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
17804-35-2	Benomyl	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
98-07-7	Benzotrichloride	**C0.1 ppm		Skin, Schedule R
98-88-4	Benzoyl chloride	**C0.5 ppm		Schedule R
94-36-0	Benzoyl peroxide	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
140-11-4	Benzyl acetate	10 ppm	20 ppm	
100-44-7	Benzyl chloride	1 ppm	2 ppm	Schedule R
7440-41-7	Beryllium and compounds, (as Be)	0.002 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup>	Schedule R
92-52-4	Biphenyl (diphenyl)	0.2 ppm	0.6 ppm	
3033-62-3	Bis (2-dimethylaminoethyl) ether (DMAE E)	0.05 ppm	0.15 ppm	Skin
1304-82-1	Bismuth telluride			
-	Undoped	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Se-doped, as Bi <sub>2</sub> Te <sub>3</sub>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
1330-43-4; 1303-96-4; 10043-35-3; 12179-04-3	Borate compounds, inorganic (inhalable fraction)	2 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
1303-86-2	Boron oxide	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
10294-33-4	Boron tribromide	**C1 ppm		
2095578	Boron trifluoride	**C1 ppm		
314-40-9	Bromacil	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
7726-95-6	Bromine	0.1 ppm	0.2 ppm	
7789-30-2	Bromine pentafluoride	0.1 ppm	0.3 ppm	



CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
74-97-5	Bromochloromethane (Chlorobromomethane)	200 ppm	250 ppm	
75-25-2	Bromoform	0.5 ppm	1.5 ppm	Skin
106-94-5	1-Bromopropane	10 ppm	20 ppm	
106-99-0	1,3-Butadiene	2 ppm	4 ppm	Schedule R
106-97-8; 75-28-5	Butane, All isomers	See Aliphatic hydrocarbon gases [C1-C4]		
111-76-2	2-Butoxyethanol (Butyl Cellosolve or EGBE)	20 ppm	30 ppm	
112-07-2	2-Butoxyethyl acetate (EGBEA)	20 ppm	30 ppm	
123-86-4	n-Butyl acetate	150 ppm	200 ppm	
105-46-4	sec-Butyl acetate	200 ppm	250 ppm	
540-88-5	tert-Butyl acetate	200 ppm	250 ppm	
141-32-2	n-Butyl acrylate	2 ppm	4 ppm	SEN
71-36-3	n-Butyl alcohol (n-butanol)	20 ppm	30 ppm	
78-92-2	sec-Butyl alcohol (sec-butanol)	100 ppm	125 ppm	
75-65-0	tert-Butyl alcohol (tert-butanol)	100 ppm	125 ppm	
109-73-9	n-Butylamine	**C5 ppm		Skin
1189-85-1	tert-Butyl chromate, (as CrO <sub>3</sub> )	**C0.1 mg/m <sup>3</sup>		Skin
192336	n-Butyl glycidyl ether (BGE)	3 ppm	6 ppm	Skin, SEN
138-22-7	n-Butyl lactate	5 ppm	10 ppm	
109-79-5	n-Butyl mercaptan	0.5 ppm	1.5 ppm	
89-72-5	o-sec-Butylphenol	5 ppm	7 ppm	Skin
98-51-1	p-tert-Butyltoluene	1 ppm	2 ppm	
7440-43-9	Cadmium, and compounds, (as Cd):			Schedule R
-	(total fraction)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	(respirable fraction)	0.002 mg/m <sup>3</sup>	0.006 mg/m <sup>3</sup>	
1317-65-3	Calcium carbonate	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
13765-19-0	Calcium chromate, (as Cr)	0.001 mg/m <sup>3</sup>	0.003 mg/m <sup>3</sup>	
156-62-7	Calcium cyanamide	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
1305-62-0	Calcium hydroxide	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
1305-78-8	Calcium oxide	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
1344-95-2	Calcium silicate, synthetic nonfibrous	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
76-22-2	Camphor, synthetic	2 ppm	3 ppm	
105-60-2	Caprolactam (inhalable fraction and vapour)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
191905	Captafol	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin, Schedule R
133-06-2	Captan (inhalable fraction)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	SEN
63-25-2	Carbaryl	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
1563-66-2	Carbofuran (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
1333-86-4	Carbon black	3.5 mg/m <sup>3</sup>	7 mg/m <sup>3</sup>	
124-38-9	Carbon dioxide	5000 ppm	30,000 ppm	
75-15-0	Carbon disulphide	10 ppm	15 ppm	Skin
630-08-0	Carbon monoxide	25 ppm	190 ppm	
558-13-4	Carbon tetrabromide	0.1 ppm	0.3 ppm	
75-44-5	Carbonyl chloride (Phosgene)	0.1 ppm	0.3 ppm	
353-50-4	Carbonyl fluoride	2 ppm	5 ppm	
120-80-9	Catechol (Pyrocatechol)	5 ppm	7.8 ppm	Skin
9004-34-6	Cellulose (paper fibre)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
21351-79-1	Cesium hydroxide	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
57-74-9	Chlordane	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
8001-35-2	Chlorinated camphene	0.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	Skin, Schedule R

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
31242-93-0	o-Chlorinated diphenyl oxide	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
7782-50-5	Chlorine	0.5 ppm	1 ppm	
2976453	Chlorine dioxide	0.1 ppm	0.3 ppm	
7790-91-2	Chlorine trifluoride	**C 0.1 ppm		
107-20-0	Chloroacetaldehyde	**C1 ppm		
78-95-5	Chloroacetone	**C1 ppm		Skin
532-27-4	alpha-Chloroacetophenone (Phenacyl chloride)	0.05 ppm	0.15 ppm	
79-04-9	Chloroacetyl chloride	0.05 ppm	0.15 ppm	Skin
108-90-7	Chlorobenzene (Monochlorobenz ene)	10 ppm	15 ppm	
2698-41-1	o-Chlorobenzylidene malononitrile	**C0.05 ppm		Skin
126-99-8	2-Chloro-1,3-butadiene (beta- Chloroprene)	10 ppm	15 ppm	Skin
75-45-6	Chlorodifluoromethane	1000 ppm	1250 ppm	
53469-21-9	Chlorodiphenyl (42% chlorine)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Skin
11097-69-1	Chlorodiphenyl (54% chlorine)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
107-07-3	2-Chloroethanol (Ethylene chlorohydrin)	**C1.0 ppm		Skin
600-25-9	1-Chloro-1-nitropropane	2 ppm	4 ppm	
76-15-3	Chloropentafluoroethane	1000 ppm	1250 ppm	
76-06-2	Chloropicrin	0.1 ppm	0.3 ppm	
127-00-4; 78-89-7	1-Chloro-2-propanol and 2Chloro-1-propanol	1 ppm	3 ppm	Skin
598-78-7	2-Chloropropionic acid	0.1 ppm	0.3 ppm	Skin
2039-87-4	o-Chlorostyrene	50 ppm	75 ppm	
95-49-8	o-Chlorotoluene	50 ppm	65 ppm	
2921-88-2	Chlorpyrifos, (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
7440-47-3	Chromium metal and inorganic compounds, (as Cr):			
	Metal and Cr (III) compounds	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
-	Water soluble Cr (VI) compounds	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Schedule R
-	Insoluble Cr (VI) compounds	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Schedule R
14977-61-8	Chromyl chloride	0.025 ppm	0.07 ppm	
2971-90-6	Clopidol	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Coal dust:			
-	Anthracite (respirable fraction)	0.4 mg/m <sup>3</sup>	1.2 mg/m <sup>3</sup>	
-	Bituminous (respirable fraction)	0.9 mg/m <sup>3</sup>	2.7 mg/m <sup>3</sup>	
65996-93-2	Coal tar pitch volatiles, as benzene soluble aerosol (See Particulate polycyclic aromatic hydrocarbons)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Schedule R
7440-48-4	Cobalt and inorganic compounds, (as Co)	0.02 mg/m <sup>3</sup>	0.06 mg/m <sup>3</sup>	Schedule R
10210-68-1	Cobalt carbonyl, (as Co)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
5457516	Cobalt hydrocarbonyl, (as Co)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
7440-50-8	Copper, (as Cu):			
-	Fume	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	
-	dusts and mists	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
-	Cotton dust, raw	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	
1319-77-3	Cresol, all isomers	5 ppm	10 ppm	Skin
4170-30-3	Crotonaldehyde	**C 0.3 ppm		Skin
299-86-5	Crufomate	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
98-82-8	Cumene	50 ppm	74 ppm	
420-04-2	Cyanamide	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
460-19-5	Cyanogen	10 ppm	15 ppm	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
506-77-4	Cyanogen chloride	**C0.3 ppm		
110-82-7	Cyclohexane	100 ppm	150 ppm	
108-93-0	Cyclohexanol	50 ppm	62 ppm	Skin
108-94-1	Cyclohexanone	20 ppm	50 ppm	Skin
110-83-8	Cyclohexene	300 ppm	375 ppm	
108-91-8	Cyclohexylamine	10 ppm	15 ppm	
121-82-4	Cyclonite (RDX)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
542-92-7	Cyclopentadiene	75 ppm	94 ppm	
287-92-3	Cyclopentane	600 ppm	900 ppm	
13121-70-5	Cyhexatin	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
94-75-7	2,4-D (2,4-Dichlorophenoxy-acetic acid)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
50-29-3	DDT (Dichlorodiphenyltrichloro-ethane)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Schedule R
17702-41-9	Decaborane	0.05 ppm	0.15 ppm	Skin
8065-48-3	Demeton (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
919-86-8	Demeton-S-methyl, (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin, SEN
123-42-2	Diacetone alcohol (4-hydroxy- 4methyl-2-	50 ppm	60 ppm	
333-41-5	Diazinon, (inhalable fraction and vapour)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Skin
334-88-3	Diazomethane	0.2 ppm	0.6 ppm	Schedule R
19287-45-7	Diborane	0.1 ppm	0.3 ppm	
102-81-8	2-N-Dibutylaminoethanol	0.5 ppm	1 ppm	Skin
2528-36-1	Dibutyl phenyl phosphate	0.3 ppm	0.6 ppm	Skin
107-66-4	Dibutyl phosphate	1 ppm	2 ppm	
84-74-2	Dibutyl phthalate	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
79-43-6	Dichloroacetic acid	0.5 ppm	1.5 ppm	Skin, Schedule R
7572-29-4	Dichloroacetylene	**C0.1 ppm		
95-50-1	o-Dichlorobenzene	25 ppm	50 ppm	
106-46-7	p-Dichlorobenzene	10 ppm	15 ppm	Schedule R
764-41-0	1,4-Dichloro-2-butene	0.005 ppm	0.015 ppm	Skin, Schedule R
75-71-8	Dichlorodifluoromethane	1000 ppm	1250 ppm	
118-52-5	1,3-Dichloro-5,5-dimethyl hydantoin	0.2 mg/m <sup>3</sup>	0.4 mg/m <sup>3</sup>	
75-34-3	1,1-Dichloroethane	100 ppm	125 ppm	
540-59-0; 156-59-2; 156-60-5	1,2-Dichloroethylene, all isomers	200 ppm	250 ppm	
111-44-4	Dichloroethyl ether	5 ppm	10 ppm	Skin
75-43-4	Dichlorofluoromethane	10 ppm	15 ppm	
75-09-2	Dichloromethane	50 ppm	75 ppm	Schedule R
594-72-9	1,1-Dichloro-1-nitroethane	2 ppm	4 ppm	
542-75-6	1,3-Dichloropropene	1 ppm	2 ppm	Skin, Schedule R
75-99-0	2,2-Dichloropropionic acid, (inhalable fraction)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
76-14-2	Dichlorotetrafluoroethane	1000 ppm	1250 ppm	
62-73-7	Dichlorvos (DDVP), (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin, SEN, Schedule R
141-66-2	Dicrotophos, (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
77-73-6	Dicyclopentadiene	5 ppm	8 ppm	
102-54-5	Dicyclopentadienyl iron	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
60-57-1	Dieldrin	0.25 mg/m <sup>3</sup>	0.75 mg/m <sup>3</sup>	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
683334-30-5; 68476-30-2; 68476-31-3; 68476-34-6; 77650-28-3	Diesel fuel as total hydrocarbons, (vapour)	100 mg/m <sup>3</sup>	150 mg/m <sup>3</sup>	Skin
111-42-2	Diethanolamine	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	Skin
109-89-7	Diethylamine	5 ppm	15 ppm	Skin
100-37-8	2-Diethylaminoethanol	2 ppm	4 ppm	Skin
111-40-0	Diethylene triamine	1 ppm	2 ppm	Skin
96-22-0	Diethyl ketone	200 ppm	300 ppm	
84-66-2	Diethyl phthalate	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
75-61-6	Difluorodibromomethane	100 ppm	125 ppm	
2238-7-5	Diglycidyl ether (DGE)	0.1 ppm	0.3 ppm	
108-83-8	Diisobutyl ketone	25 ppm	30 ppm	
108-18-9	Diisopropylamine	5 ppm	7 ppm	Skin
127-19-5	N,N-Dimethylacetamide	10 ppm	15 ppm	Skin
124-40-3	Dimethylamine	5 ppm	15 ppm	
121-69-7	Dimethylaniline (N,N-Dimethylaniline)	5 ppm	10 ppm	Skin
14857-34-2	Dimethylethoxysilane	0.5 ppm	1.5 ppm	
68-12-2	Dimethylformamide	10 ppm	15 ppm	Skin, Schedule R
57-14-7	1,1-Dimethylhydrazine	0.01 ppm	0.03 ppm	Skin, Schedule R
131-11-3	Dimethylphthalate	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
77-78-1	Dimethyl sulphate	0.1 ppm	0.3 ppm	Skin, Schedule R
75-18-3	Dimethyl sulphide	10 ppm	20 ppm	
148-1-6	Dinitolmide	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
528-29-0; 99-65-0; 100-25-4; 25154-54-5	Dinitrobenzene (all isomers)	0.15 ppm	0.30 ppm	Skin
534-52-1	Dinitro-o-cresol	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin
25321-14-6	Dinitrotoluene	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin, Schedule R
123-91-1	1,4-Dioxane	20 ppm	30 ppm	Skin, Schedule R
78-34-2	Dioxathion (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
646-06-0	1,3-Dioxolane	20 ppm	30 ppm	
122-39-4	Diphenylamine	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
34590-94-8	Dipropylene glycol methyl ether (DPGME)	100 ppm	150 ppm	Skin
123-19-3	Dipropyl ketone	50 ppm	60 ppm	
2764-72-9; 85-00-7; 6385-62-2	Diquat: (inhalable fraction) (respirable fraction)	0.5 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup>	Skin
117-81-7	Di-sec, octyl phthalate (Di-2ethylhexyl phthalate or DEHP)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Schedule R
97-77-8	Disulphiram	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
298-04-4	Disulphoton, (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
128-37-0	2,6-Di-tert-butyl-p-cresol (butylated hydroxytoluene or BHT) (inhalable fraction and vapour)	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
330-54-1	Diuron	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
1321-74-0	Divinyl benzene	10 ppm	15 ppm	
112-55-0	Dodecyl mercaptan	0.1 ppm	0.3 ppm	SEN
1302-74-5	Emery	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
115-29-7	Endosulphan	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin



CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
72-20-8	Endrin	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
13838-16-9	Enflurane	75 ppm	100 ppm	
106-89-8	Epichlorohydrin	0.5 ppm	1.5 ppm	Skin, Schedule R
2104-64-5	EPN (inhalable fraction)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
74-84-0	Ethane	See Aliphatic hydrocarbon gases [C1-C4]		
64-17-5	Ethanol	1000 ppm	1250 ppm	
141-43-5	Ethanolamine	3 ppm	6 ppm	
563-12-2	Ethion, (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
110-80-5	2-Ethoxyethanol (Glycol monoethyl ether)	5 ppm	7 ppm	Skin
111-15-9	2-Ethoxyethyl acetate (Cellosolve acetate)	5 ppm	8 ppm	Skin
141-78-6	Ethyl acetate	400 ppm	500 ppm	
140-88-5	Ethyl acrylate	5 ppm	15 ppm	Schedule R
75-04-7	Ethylamine	5 ppm	15 ppm	Skin
541-85-5	Ethyl amyl ketone (5-Methyl-3heptanone)	25 ppm	30 ppm	
100-41-4	Ethyl benzene	100 ppm	125 ppm	Schedule R
74-96-4	Ethyl bromide	5 ppm	7 ppm	Skin
637-92-3	Ethyl tert-butyl ether	5 ppm	10 ppm	
106-35-4	Ethyl butyl ketone (3-Heptanone)	50 ppm	75 ppm	
75-00-3	Ethyl chloride	100 ppm	125 ppm	Skin
7085-85-0	Ethyl cyanoacrylate	0.2 ppm	0.6 ppm	
74-85-1	Ethylene	200 ppm	250 ppm	
107-15-3	Ethylenediamine	10 ppm	15 ppm	Skin
107-06-2	Ethylene dichloride	10 ppm	20 ppm	
107-21-1	Ethylene glycol, (as an aerosol)	**C 100 mg/m <sup>3</sup>		
628-96-6	Ethylene glycol dinitrate (EGDN)	0.05 ppm	0.15 ppm	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
75-21-8	Ethylene oxide	1 ppm	2 ppm	Schedule R
151-56-4	Ethylenimine	0.5 ppm	1.5 ppm	Skin, Schedule R
60-29-7	Ethyl ether	400 ppm	500 ppm	
109-94-4	Ethyl formate	100 ppm	150 ppm	
149-57-5	2-Ethylhexanoic acid, (inhalable fraction and vapour)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
16219-75-3	Ethylidene norbornene	**C5 ppm		
75-08-1	Ethyl mercaptan	0.5 ppm	1.5 ppm	
100-74-3	N-Ethylmorpholine	5 ppm	8 ppm	Skin
78-10-4	Ethyl silicate	10 ppm	15 ppm	
22224-92-6	Fenamiphos	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
115-90-2	Fensulphothion (inhalable fraction and vapour)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Ski
55-38-9	Fenthion	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin
14484-64-1	Ferbam	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
12604-58-9	Ferrovandium dust	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
-	Flour dust	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	SEN
-	Fluoride, (as F)	2.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	
7782-41-4	Fluorine	1 ppm	2 ppm	
944-22-9	Fonofos	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
50-00-0	Formaldehyde	**C0.3 ppm		SEN, Schedule R
75-12-7	Formamide	10 ppm	15 ppm	Skin
64-18-6	Formic acid	5 ppm	10 ppm	
98-01-1	Furfural	2 ppm	4 ppm	Skin
98-00-0	Furfuryl alcohol	10 ppm	15 ppm	Skin
36547	Gallium arsenide (respirable fraction)	0.0003 mg/m <sup>3</sup>	0.0009 mg/m <sup>3</sup>	

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86290-81-5	Gasoline	300 ppm	500 ppm	
7782-65-2	Germanium tetrahydride	0.2 ppm	0.6 ppm	
111-30-8	Glutaraldehyde, activated and inactivated	**C0.05 ppm		SEN
56-81-5	Glycerin mist	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
556-52-5	Glycidol	2 ppm	4 ppm	
107-22-2	Glyoxal, (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	SEN
-	Grain dust (oat, wheat, barley)	4 mg/m <sup>3</sup>	8 mg/m <sup>3</sup>	
7782-42-5	Graphite, natural-all forms except graphite fibres (respirable fraction)	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
7778-18-9	Gypsum (Calcium sulphate)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
7440-58-6	Hafnium and compounds, (as Hf)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
151-67-7	Halothane	50 ppm	60 ppm	
76-44-8; 1024-57-3	Heptachlor and Heptchlor epoxide	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin, Schedule R
142-82-5	Heptane (n-Heptane)	400 ppm	500 ppm	
118-74-1	Hexachlorobenzene	0.002 mg/m <sup>3</sup>	0.006 mg/m <sup>3</sup>	Skin, Schedule R
87-68-3	Hexachlorobutadiene	0.02 ppm	0.06 ppm	Skin, Schedule R
77-47-4	Hexachlorocyclopentadiene	0.01 ppm	0.03 ppm	
67-72-1	Hexachloroethane	1 ppm	2 ppm	Skin, Schedule R
1335-87-1	Hexachloronaphthalene	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin
684-16-2	Hexafluoroacetone	0.1 ppm	0.3 ppm	Skin
85-42-7; 13149-00-3; 14166-21-3	Hexahydrophthalic anhydride, (inhalable fraction and vapour), all isomers	**C0.005 mg/m <sup>3</sup>		SEN
822-06-0	Hexamethylene diisocyanate	0.005 ppm	0.015 ppm	

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110-54-3	Hexane (n-Hexane)	50 ppm	62.5 ppm	Skin
-	Hexane (other isomers)	500 ppm	1000 ppm	
124-09-4	Hexanediamine	0.5 ppm	1.0 ppm	
592-41-6	1-Hexene	50 ppm	75 ppm	
108-84-9	sec-Hexyl acetate	50 ppm	60 ppm	
107-41-5	Hexylene glycol	**C25 ppm		
302-01-2	Hydrazine	0.01 ppm	0.03 ppm	Skin, Schedule R
61788-32-7	Hydrogenated terphenyls (nonirradiated)	0.5 ppm	1.5 ppm	
10035-10-6	Hydrogen bromide	**C2 ppm		
2099048	Hydrogen chloride	**C2 ppm		
-	Hydrogen cyanide and cyanide salts, (as CN):			
74-90-8	Hydrogen cyanide	**C4.7 ppm		Skin
592-01-8; 151-50-8; 143-33-9	Cyanide salts	**C 5 mg/m <sup>3</sup>		Skin
7664-39-3	Hydrogen fluoride, (as F)	0.5 ppm	**C 2 ppm	
7722-84-1	Hydrogen peroxide	1 ppm	2 ppm	
2148906	Hydrogen selenide, (as Se)	0.05 ppm	0.15 ppm	
2148875	Hydrogen sulphide	10 ppm	15 ppm	
123-31-9	Hydroquinone	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
999-61-1	2-Hydroxypropyl acrylate	0.5 ppm	1 ppm	Skin, SEN
95-13-6	Indene	10 ppm	15 ppm	
7440-74-6	Indium and Compounds, (as In)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Schedule R (Indium phosphide)
7553-56-2	Iodine	**C0.1 ppm		
75-47-8	Iodoform	0.6 ppm	1.2 ppm	

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1309-37-1	Iron oxide fume, (dust and fume) (Fe <sub>2</sub> O <sub>3</sub> , as Fe)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
13463-40-6	Iron pentacarbonyl, (as Fe)	0.1 ppm	0.2 ppm	
	Iron salts, soluble, (as Fe)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
123-51-3	Isoamyl alcohol	100 ppm	125 ppm	
110-19-0	Isobutyl acetate	150 ppm	188 ppm	
78-83-1	Isobutyl alcohol	50 ppm	60 ppm	
542-56-3	Isobutyl nitrite, (inhalable fraction and vapour)	**C1 ppm		
26952-21-6	Isooctyl alcohol	50 ppm	60 ppm	Skin
78-59-1	Isophorone	**C5 ppm		
4098-71-9	Isophorone diisocyanate	0.005 ppm	0.015 ppm	
109-59-1	2-Isopropoxyethanol	25 ppm	38 ppm	Skin
108-21-4	Isopropyl acetate	100 ppm	200 ppm	
67-63-0	Isopropyl alcohol	200 ppm	400 ppm	
75-31-0	Isopropylamine	5 ppm	10 ppm	
768-52-5	N-Isopropylaniline	2 ppm	4 ppm	Skin
108-20-3	Isopropyl ether	250 ppm	310 ppm	
4016-14-2	Isopropyl glycidyl ether (IGE)	50 ppm	75 ppm	
1332-58-7	Kaolin (respirable fraction)	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
8008-20-6; 64742-81-0	Kerosene /Jet fuels, as total hydrocarbon vapour	200 mg/m <sup>3</sup>	250 mg/m <sup>3</sup>	Skin
463-51-4	Ketene	0.5 ppm	1.5 ppm	
7439-92-1	Lead and inorganic compounds, (as Pb)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Schedule R
3687-31-8	Lead arsenate, (as Pb <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> )	0.15 mg/m <sup>3</sup>	0.45 mg/m <sup>3</sup>	
7758-97-6	Lead chromate, (as Pb)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Schedule R

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
7758-97-6	Lead chromate, (as Cr)	0.012 mg/m <sup>3</sup>	0.036 mg/m <sup>3</sup>	Schedule R
1317-65-3; 471-34-1	Limestone (calcium carbonate)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
58-89-9	Lindane	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
7580-67-8	Lithium hydride	0.025 mg/m <sup>3</sup>	0.075 mg/m <sup>3</sup>	
68476-85-7	L.P.G. (liquified petroleum gas)	See Aliphatic hydrocarbon gases [C1-C4]		
546-93-0	Magnesite	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
1309-48-4	Magnesium oxide (inhalable fraction)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
121-75-5	Malathion, (inhalable fraction and vapour)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Skin
108-31-6	Maleic anhydride	0.1 ppm	0.3 ppm	SEN
7439-96-5	Manganese and inorganic compounds, (as Mn)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	
12079-65-1	Manganese cyclopentadienyl tricarbonyl, (as Mn)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
7439-97-6	Mercury, (as Hg):			
-	Alkyl compounds	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Skin
-	Aryl compounds	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
-	Inorganic forms, including metallic mercury	0.025 mg/m <sup>3</sup>	0.075 mg/m <sup>3</sup>	Skin
141-79-7	Mesityl oxide	15 ppm	25 ppm	
79-41-4	Methacrylic acid	20 ppm	30 ppm	
74-82-8	Methane	See Aliphatic hydrocarbon gases [C1-C4]		
16752-77-5	Methomyl	2.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	
72-43-5	Methoxychlor	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
109-86-4	2-Methoxyethanol (Methyl cellosolve-EGME)	5 ppm	8 ppm	Skin
110-49-6	2-Methoxyethyl acetate (Methyl cellosolve acetate-EGMEA)	5 ppm	8 ppm	Skin
150-76-5	4-Methoxyphenol	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
79-20-9	Methyl acetate	200 ppm	250 ppm	
74-99-7	Methyl acetylene	1000 ppm	1250 ppm	
59355-75-8	Methyl acetylene-propadiene mixture (MAPP)	1000 ppm	1250 ppm	
96-33-3	Methyl acrylate	2 ppm	4 ppm	Skin, SEN
126-98-7	Methylacrylonitrile	1 ppm	2 ppm	Skin
109-87-5	Methylal (dimethoxy methane)	1000 ppm	1250 ppm	
67-56-1	Methyl alcohol (methanol)	200 ppm	250 ppm	Skin
74-89-5	Methylamine	5 ppm	15 ppm	
110-43-0	Methyl n-amyl ketone (2-Heptanone)	50 ppm	60 ppm	
100-61-8	N-Methylaniline	0.5 ppm	1 ppm	Skin
74-83-9	Methyl bromide	1 ppm	3 ppm	Skin
596899	Methyl tert-butyl ether (MTBE)	50 ppm	75 ppm	
591-78-6	Methyl n-butyl ketone	5 ppm	10 ppm	Skin
74-87-3	Methyl chloride	50 ppm	100 ppm	Skin
137-05-3	Methyl 2-cyanoacrylate	0.2 ppm	0.6 ppm	
108-87-2	Methylcyclohexane	400 ppm	500 ppm	
25639-42-3	Methylcyclohexanol	50 ppm	60 ppm	
583-60-8	o-Methylcyclohexanone	50 ppm	75 ppm	Skin
3728761	2-Methylcyclopentadienyl manganese tricarbonyl, (as Mn)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin
2236015	Methyl demeton	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
101-68-8	Methylene bisphenyl isocyanate (MDI)	0.005 ppm	0.015 ppm	
101-14-4	4,4'-Methylene bis (2-chloroaniline) (MBOCA, MOCA)	0.01 ppm	0.03 ppm	Skin, Schedule R
37010	Methylene bis (4-cyclohexylisocyanate)	0.005 ppm	0.015 ppm	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
75-09-2	Methylene choride (dichloromethane)	50 ppm	63 ppm	
101-77-9	4,4'-Methylene dianiline	0.1 ppm	0.3 ppm	Skin, Schedule R
78-93-3	Methyl ethyl ketone (MEK)	200 ppm	300 ppm	
1338-23-4	Methyl ethyl ketone peroxide	**C0.2 ppm		
107-31-3	Methyl formate	100 ppm	150 ppm	
60-34-4	Methyl hydrazine	0.01 ppm	0.03 ppm	Skin, Schedule R
74-88-4	Methyl iodide	2 ppm	4 ppm	Skin, Schedule R
110-12-3	Methyl isoamyl ketone	50 ppm	60 ppm	
108-11-2	Methyl isobutyl carbinol	25 ppm	40 ppm	Skin
108-10-1	Methyl isobutyl ketone	50 ppm	75 ppm	
624-83-9	Methyl isocyanate	0.02 ppm	0.06 ppm	Skin
563-80-4	Methyl isopropyl ketone	200 ppm	250 ppm	
74-93-1	Methyl mercaptan	0.5 ppm	1.5 ppm	
80-62-6	Methyl methacrylate	50 ppm	100 ppm	SEN
298-00-0	Methyl parathion	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Skin
107-87-9	Methyl propyl ketone	200 ppm	250 ppm	
681-84-5	Methyl silicate	1 ppm	2 ppm	
98-83-9	alpha-Methyl styrene	50 ppm	100 ppm	
78-94-4	Methyl vinyl ketone	**C0.2 ppm		Skin, SEN
21087-64-9	Metribuzin	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
7786-34-7	Mevinphos (inhalable fraction and vapour)	0.01mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Skin
12001-26-2	Mica (respirable fraction)	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
7439-98-7	Molybdenum, (as Mo):			
-	Soluble compounds, (respirable fraction)	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	



CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	Metal and insoluble compounds, (inhalable fraction)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Metal and insoluble compounds, (respirable fraction)	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
6923-22-4	Monocrotophos (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
110-91-8	Morpholine	20 ppm	30 ppm	Skin
300-76-5	Naled, (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin, SEN
91-20-3	Naphthalene	10 ppm	15 ppm	Skin
8006-14-2	Natural gas	See Aliphatic hydrocarbon gases: Alkane [C1-C4]		
2595507	Natural rubber latex (as total proteins), (inhalable fraction)	0.001 mg/m <sup>3</sup>	0.003 mg/m <sup>3</sup>	Skin, SEN
36571	Nickel, (as Ni):			
-	Elemental (inhalable fraction)	1.5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Schedule R
-	Soluble inorganic compounds, (not otherwise specified) (inhalable fraction)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
-	Insoluble inorganic, (as not otherwise specified) (inhalable fraction)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	
12035-72-2	Nickel subsulphide, (as Ni), (inhalable fraction)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Schedule R
13463-39-3	Nickel carbonyl, (as Ni)	0.05 ppm	0.15 ppm	
54-11-5	Nicotine	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
1929-82-4	Nitrapyrin	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
7697-37-2	Nitric acid	2 ppm	4 ppm	
10102-43-9	Nitric oxide	25 ppm	38 ppm	
100-01-6	p-Nitroaniline	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	Skin
98-95-3	Nitrobenzene	1 ppm	2 ppm	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
100-00-5	p-Nitrochlorobenzene	0.1 ppm	0.3 ppm	Skin
79-24-3	Nitroethane	100 ppm	125 ppm	
10102-44-0	Nitrogen dioxide	3 ppm	5 ppm	
7783-54-2	Nitrogen trifluoride	10 ppm	20 ppm	
55-63-0	Nitroglycerin (NG)	0.05 ppm	0.15 ppm	Skin
75-52-5	Nitromethane	20 ppm	30 ppm	
108-03-2	1-Nitropropane	25 ppm	40 ppm	
79-46-9	2-Nitropropane	10 ppm	20 ppm	Schedule R
88-72-2; 99-08-1; 99-99-0	Nitrotoluene isomers	2 ppm	3 ppm	Skin
10024-97-2	Nitrous oxide	50 ppm	75 ppm	
111-84-2	Nonane, all isomers	200 ppm	250 ppm	
2234-13-1	Octachloronaphthalene	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
111-65-9	Octane, all isomers	300 ppm	375 ppm	
8012-95-1	Oil mist, mineral	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
20816-12-0	Osmium tetroxide, (as Os)	0.0002 ppm	0.0006 ppm	
144-62-7	Oxalic acid	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	
80-51-3	p,p'-Oxybis(benzenesulphonyl hydrazide), (inhalable fraction)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
7783-41-7	Oxygen difluoride	**C0.05 ppm		
10028-15-6	Ozone	0.05 ppm	0.15 ppm	
8002-74-2	Paraffin wax fume	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
4685-14-7	Paraquat, total dust	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
-	Paraquat, (respirable fraction)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
56-38-2	Parathion, (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	Particulate polycyclic aromatic hydrocarbons (PPAH), as benzene solubles, See Coal tar pitch volatiles	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Schedule R
-	Particles (Insoluble or Poorly Soluble) Not Otherwise Specified:			
-	Inhalable fraction	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Respirable fraction	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
19624-22-7	Pentaborane	0.005 ppm	0.015 ppm	
1321-64-8	Pentachloronaphthalene	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
82-68-8	Pentachloronitrobenzene	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
87-86-5	Pentachlorophenol	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	Skin
115-77-5	Pentaerythritol	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
78-78-4; 109-66-0; 463-82-1	Pentane, all isomers	600 ppm	750 ppm	
628-63-7; 626-38-0; 123-92-2; 625-16-1; 624-41-9; 620-11-1	Pentyl acetate, all isomers	50 ppm	100 ppm	
594-42-3	Perchloromethyl mercaptan	0.1 ppm	0.3 ppm	
7616-94-6	Perchloryl fluoride	3 ppm	6 ppm	
19430-93-4	Perfluorobutyl ethylene	100 ppm	150 ppm	
382-21-8	Perfluoroisobutylene	**C0.01 ppm		
93763-70-3	Perlite	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Persulphates, as persulphate	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
108-95-2	Phenol	5 ppm	7.5 ppm	Skin
92-84-2	Phenothiazine	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
95-54-5; 108-45-2; 106-50-3	Phenylene diamine isomers	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
101-84-8	Phenyl ether (vapour)	1 ppm	2 ppm	
122-60-1	Phenyl glycidyl ether (PGE)	0.1 ppm	0.3 ppm	Skin, SEN, Schedule R
100-63-0	Phenyl hydrazine	0.1 ppm	0.3 ppm	Skin, Schedule R
108-98-5	Phenyl mercaptan	0.1 ppm	0.3 ppm	Skin
638-21-1	Phenylphosphine	**C0.05 ppm		
298-02-2	Phorate (inhalable fraction and vapour)	0.05 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	Skin
75-44-5	Phosgene (Carbonyl chloride)	0.1 ppm	0.3 ppm	
7803-51-2	Phosphine	0.3 ppm	1 ppm	
7664-38-2	Phosphoric acid	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
12185-10-3	Phosphorus (yellow)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
10025-87-3	Phosphorous oxychloride	0.1 ppm	0.3 ppm	
10026-13-8	Phosphorous pentachloride	0.1 ppm	0.3 ppm	
1314-80-3	Phosphorous pentasulphide	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
7719-12-2	Phosphorous trichloride	0.2 ppm	0.5 ppm	
85-44-9	Phthalic anhydride	1 ppm	2 ppm	SEN
626-17-5	m-Phthalodinitrile	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
6606	Picloram	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
88-89-1	Picric acid	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
83-26-1	Pindone	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
142-64-3	Piperazine dihydrochloride	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
7778-18-9	Plaster of Paris (Calcium sulphate)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
38153	Platinum:			
-	metal	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	soluble salt, (as Pt)	0.002 mg/m <sup>3</sup>	0.006 mg/m <sup>3</sup>	
65997-15-1	Portland cement	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
1310-58-3	Potassium hydroxide	**C2 mg/m <sup>3</sup>		
74-98-6	Propane	See Aliphatic hydrocarbon gases [C1-C4]		
107-19-7	Propargyl alcohol	1 ppm	3 ppm	Skin
57-57-8	beta-Propiolactone	0.5 ppm	1 ppm	Schedule R
123-38-6	Propionaldehyde	20 ppm	30 ppm	
79-09-4	Propionic acid	10 ppm	15 ppm	
114-26-1	Propoxur	0.5 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
109-60-4	n-Propyl acetate	200 ppm	250 ppm	
71-23-8	Propyl alcohol (n-propanol)	200 ppm	400 ppm	
78-87-5	Propylene dichloride	75 ppm	110 ppm	
6423-43-4	Propylene glycol dinitrate	0.05 ppm	0.15 ppm	Skin
107-98-2	Propylene glycol monomethyl ether (PGME or 1-methoxy-2-propanol)	100 ppm	150 ppm	
75-56-9	Propylene oxide	2 ppm	4 ppm	SEN, Schedule R
75-55-8	Propylenimine	2 ppm	4 ppm	Skin, Schedule R
627-13-4	n-Propyl nitrate	25 ppm	40 ppm	
8003-34-7	Pyrethrum	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
110-86-1	Pyridine	1 ppm	3 ppm	
106-51-4	Quinone	0.1 ppm	0.3 ppm	
108-46-3	Resorcinol	10 ppm	20 ppm	
7440-16-6	Rhodium, (as Rh):			
-	Metal and insoluble compounds	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
-	Soluble compounds	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	
299-84-3	Ronnel	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
83-79-4	Rotenone (commercial)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
-	Rouge	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
8030-30-6	Rubber solvent (Naphtha)	400 ppm	500 ppm	
7782-49-2	Selenium and compounds, (as Se)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	
7783-79-1	Selenium hexafluoride, (as Se)	0.05 ppm	0.15 ppm	
136-78-7	Sesone	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Silica Amorphous:			
61790-53-2	Diatomaceous earth (uncalcined) (inhalable fraction)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
61790-53-2	Diatomaceous earth (uncalcined) (respirable fraction)	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
112926-00-8	Precipitated silica and silica gel	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
69012-46-2	Silica, fume (respirable fraction)	2 mg/m <sup>3</sup>		
60676-86-0	Silica, fused (respirable fraction)	0.1 mg/m <sup>3</sup>		
-	Silica - Crystalline#:			
14464-46-1	Cristobalite (respirable fraction)	0.05 mg/m <sup>3</sup>		
14808-60-7	Quartz (respirable fraction)	0.05 mg/m <sup>3</sup>		Schedule R
1317-95-9	Tripoli, as quartz (respirable fraction)	0.1 mg/m <sup>3</sup>		
7440-21-3	Silicon	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
409-21-2	Silicon Carbide			
-	Nonfibrous, (inhalable fraction)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Nonfibrous, (respirable fraction)	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
-	Fibrous (including whiskers), (respirable fibres)	0.1 f/cc##		Schedule R
7803-62-5	Silicon tetrahydride (Silane)	5 ppm	10 ppm	
7440-22-4	Silver, metal	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	Silver soluble compounds, (as Ag)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	
-	Soapstone (total dust)	6 mg/m <sup>3</sup>		
-	Soapstone (respirable fraction)	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
39559	Sodium azide:			
-	as Sodium azide	**C0.29 mg/m <sup>3</sup>		
-	as Hydrazoic acid vapour	**C0.11 ppm		
7631-90-5	Sodium bisulphite	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
62-74-8	Sodium fluoroacetate	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
1310-73-2	Sodium hydroxide	**C2 mg/m <sup>3</sup>		
7681-57-4	Sodium metabisulphite	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
9005-25-8	Starch	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
-	Stearates	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
7803-52-3	Stibine (Antimony hydride)	0.1 ppm	0.3 ppm	
8052-41-3	Stoddard solvent	100 ppm	125 ppm	
2151065	Strontium chromate, (as Cr)	0.0005 mg/m <sup>3</sup>	0.0015 mg/m <sup>3</sup>	Schedule R
57-24-9	Strychnine	0.15 mg/m <sup>3</sup>	0.45 mg/m <sup>3</sup>	
100-42-5	Styrene, monomer	20 ppm	40 ppm	Schedule R
1395-21-7; 9014-01-1	Subtilisins, (as crystalline active enzyme)	**C0.00006 mg/m <sup>3</sup>		
57-50-1	Sucrose	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
3689-24-5	Sulphotep (TEDP) (inhalable fraction and vapour)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
38616	Sulphur dioxide	2 ppm	5 ppm	
2551-62-4	Sulphur hexafluoride	1000 ppm	1250 ppm	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
7664-93-9	Sulphuric acid, (thoracic fraction)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Schedule R, strong acid mists only
10025-67-9	Sulphur monochloride	**C1 ppm		
5714-22-7	Sulphur pentafluoride	**C0.01 ppm		
7783-60-0	Sulphur tetrafluoride	**C0.1 ppm		
2699-79-8	Sulphuryl fluoride 5 ppm	5 ppm	10 ppm	
35400-43-2	Sulprofos	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
-	Synthetic Vitreous Fibres:			
-	Continuous filament glass fibres, (respirable fibres)	1 f/cc##	3 f/cc	
-	Continuous filament glass fibres, (inhalable fraction)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
-	Glass wool fibres, (respirable fibres)	1 f/cc	3 f/cc	
-	Rock wool fibres, (respirable fibres)	1 f/cc	3 f/cc	
-	Slag wool fibres, (respirable fibres)	1 f/cc	3 f/cc	
-	Special purpose glass fibres, (respirable fibres)	1 f/cc	3 f/cc	
-	Refractory ceramic fibres, (respirable fibres)	0.2 f/cc		Schedule R
93-76-5	2,4,5-T	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
14807-96-6	Talc, (respirable fraction)	2 mg/m <sup>3</sup>		
7440-25-7	Tantalum metal and oxide, (as Ta)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
7783-80-4	Tellurium hexafluoride, (as Te)	0.02 ppm	0.03 ppm	



CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
13494-80-9	Tellurium and other tellurium compounds, (as Te) excluding hydrogen telluride	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
3383-96-8	Temephos, (inhalable fraction and vapour)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Skin
13071-79-9	Terbufos, (inhalable fraction and vapour)	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Skin
100-21-0	Terephthalic acid	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
26140-60-3	Terphenyls	**C5 mg/m <sup>3</sup>		
76-11-9	1,1,1,2-Tetrachloro-2,2-difluoroethane	500 ppm	625 ppm	
76-12-0	1,1,2,2-Tetrachloro-1,2-difluoroethane	500 ppm	625 ppm	
79-34-5	1,1,2,2-Tetrachloroethane	1 ppm	2 ppm	Skin
127-18-4	Tetrachloroethylene (Perchloroethylene)	25 ppm	100 ppm	Schedule R
1335-88-2	Tetrachloronaphthalene	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
78-00-2	Tetraethyl lead, (as Pb)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
107-49-3	Tetraethyl pyrophosphate (TEPP)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	Skin
116-14-3	Tetrafluoroethylene	2 ppm	4 ppm	Schedule R
109-99-9	Tetrahydrofuran	50 ppm	100 ppm	Skin
-	Tetrakis (hydroxymethyl) phosphonium salts:			
124-64-1	Tetrakis (hydroxymethyl) phosphonium chloride	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
55566-30-8	Tetrakis (hydroxymethyl) phosphonium sulphate	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	SEN
75-74-1	Tetramethyl lead, (as Pb)	0.15 mg/m <sup>3</sup>	0.45 mg/m <sup>3</sup>	Skin
3333-52-6	Tetramethyl succinonitrile	0.5 ppm	1 ppm	Skin
509-14-8	Tetranitromethane	0.005 ppm	0.015 ppm	Schedule R
7722-88-5	Tetrasodium pyrophosphate	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
479-45-8	Tetryl (2,4,6-trinitrophenyl-methyl nitramine)	1.5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
7440-28-0	Thallium and soluble compounds, (as Tl)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
96-69-5	4,4'-Thiobis (6-tert-butyl-m-cresol)	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
68-11-1	Thioglycolic acid	1 ppm	2 ppm	Skin
2125594	Thionyl chloride	**C1 ppm		
137-26-8	Thiram	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
7440-31-5	Tin, (as Sn):			
-	metal	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
-	oxide and inorganic compounds except SnH <sub>4</sub>	2 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>	
-	organic compounds	0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	Skin
13463-67-7	Titanium dioxide	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
108-88-3	Toluene (toluol)	50 ppm	60 ppm	Skin
584-84-9; 91-08-7	Toluene-2,4- or 2,6-diisocyanate (TDI)	0.005 ppm	0.02 ppm	SEN
95-53-4	o-Toluidine	2 ppm	4 ppm	Skin, Schedule R
108-44-1	m-Toluidine	2 ppm	4 ppm	Skin
106-49-0	p-Toluidine	2 ppm	4 ppm	Skin, Schedule R
126-73-8	Tributyl phosphate	0.2 ppm	0.4 ppm	
76-03-9	Trichloroacetic acid	1 ppm	2 ppm	
120-82-1	1,2,4-Trichlorobenzene	**C5 ppm		
71-55-6	1,1,1-Trichloroethane	350 ppm	450 ppm	
79-00-5	1,1,2-Trichloroethane	10 ppm	15 ppm	Skin
79-01-6	Trichloroethylene	50 ppm	100 ppm	
75-69-4	Trichlorofluoromethane	**C1000 ppm		
1321-65-9	Trichloronaphthalene	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Skin

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
96-18-4	1,2,3-Trichloropropane	10 ppm	15 ppm	Skin
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000 ppm	1250 ppm	
52-68-6	Trichlorphon, (inhalable fraction)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
102-71-6	Triethanolamine	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
121-44-8	Triethylamine	1 ppm	3 ppm	Skin
75-63-8	Trifluorobromomethane	1000 ppm	1200 ppm	
2451-62-9	1,3,5-Triglycidyl-s-triazinetrione	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	
552-30-7	Trimellitic anhydride	**C0.04 mg/m <sup>3</sup>		
75-50-3	Trimethylamine	5 ppm	15 ppm	
25551-13-7	Trimethyl benzene (mixed isomer)	25 ppm	30 ppm	
121-45-9	Trimethyl phosphite	2 ppm	4 ppm	
118-96-7	2,4,6-Trinitrotoluene (TNT)	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
78-30-8	Triorthocresyl phosphate	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	Skin
603-34-9	Triphenylamine	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
115-86-6	Triphenyl phosphate	3 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	
7440-33-7	Tungsten, (as W):			
-	metal and insoluble compounds	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
-	soluble compounds	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
8006-64-2; 80-56-8; 127-91-3; 13466-78-9	Turpentine and selected monoterpenes	20 ppm	30 ppm	SEN
7440-61-1	Uranium (natural)			
-	Soluble and insoluble compounds, (as U)	0.2 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	Schedule R
110-62-3	n-Valeraldehyde	50 ppm	60 ppm	

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
1314-62-1	Vanadium pentoxide, as V <sub>2</sub> O <sub>5</sub> , dust and fume (respirable fraction)	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>	
-	Vegetable oil mists	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	
108-05-4	Vinyl acetate	10 ppm	15 ppm	
593-60-2	Vinyl bromide	0.5 ppm	1.5 ppm	Schedule R
100-40-3	4-Vinyl cyclohexene	0.1 ppm	0.3 ppm	Schedule R
106-87-6	Vinyl cyclohexene dioxide	0.1 ppm	0.3 ppm	Skin, Schedule R
75-02-5	Vinyl fluoride	1 ppm	3 ppm	Schedule R
88-12-0	N-Vinyl-2-pyrrolidone	0.05 ppm	0.15 ppm	
75-35-4	Vinylidene chloride	5 ppm	10 ppm	
75-38-7	Vinylidene fluoride	500 ppm	625 ppm	
25013-15-4	Vinyl toluene	50 ppm	100 ppm	
8032-32-4	VM and P Naphtha	300 ppm	375 ppm	
81-81-2	Warfarin	0.1 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	
-	Welding fumes	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
-	Wood dust:			
-	Softwoods	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Schedule R (certain species), SEN* (certain species, see list at end of table)

CAS* Number	Substance	8 hour average contamination limit mg/m <sup>3</sup> or ppm	15 minute average contamination limit mg/m <sup>3</sup> or ppm	Notation
-	Certain hardwoods such as beech and oak	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Schedule R (certain species), SEN* (certain species, see list at end of table)
1330-20-7; 95-47-6; 108-38-3; 106-42-3	Xylene (o, m-, p-isomers)	100 ppm	150 ppm	
1477-55-0	m-Xylene alpha, alpha'-diamine	**C0.1 mg/m <sup>3</sup>		Skin
1300-73-8	Xylidine, mixed isomers (inhalable fraction and vapour)	0.5 ppm	1 ppm	Schedule R, Skin
7440-65-5	Yttrium metal and compounds, (as Y)	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
7646-85-7	Zinc chloride fume	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	
13530-65-9; 11103-86-9; 37300-23-5	Zinc chromates, as Cr	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	Schedule R
1314-13-2	Zinc oxide, fume and dust (respirable fraction)	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
7440-67-7	Zirconium and compounds, (as Zr)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	

**Notes:**

- \* "CAS" means the Chemical Abstracts Service Division of the American Chemical Society
- \*\*mg/m<sup>3</sup> or ppm means milligrams of substance per cubic metre of air; ppm - parts (volume) of substance per million parts (volume) of air
- \*\*C - ceiling limit
- # - Trydimite removed
- ## - Fibres per cubic centimetre of air

**Explanation of Notations:**

- Schedule Q - Substance is also listed in Schedule Q and subject to sections to referred to in that Schedule
- Skin - Potentially harmful after absorption through the skin or mucous membranes
- SEN - Well demonstrated potential to produce sensitization
- SEN\* - Wood species suspected of inducing sensitization (see Table D)

**Table A**Inhalable fraction:

For the application of this limit, inhalable fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

<b>Particle Aerodynamic Diameter (<math>\mu\text{m}</math>)</b>	<b>Inhalable Particulate Mass (IPM) (%)</b>
	100
1	97
2	94
5	87
10	77
20	65
30	58
40	54.5
50	52.5
100	50

**Table B**Respirable fraction:

For the application of this limit, respirable fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

<b>Particle Aerodynamic Diameter (<math>\mu\text{m}</math>)</b>	<b>Respirable Particulate Mass (RPM) (%)</b>
0	100
1	97
2	91
3	74
4	50
5	30
6	17
7	9
8	5
10	1

**Table C**Thoracic fraction:

For the application of this limit, thoracic fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

Particle Aerodynamic Diameter ( $\mu\text{m}$ )	Thoracic Particulate Mass (TPM)(%)
0	100
2	94
4	89
6	80.5
8	67
10	50
12	35
14	23
16	15
18	9.5
20	6
25	2

**Table D**

## Commercially Important Tree Species Suspected of Inducing Sensitization

Wood Type	Common	Latin
Softwood	California redwood	<i>Sequoia sempervirens</i>
	Eastern white cedar	<i>Thuja occidentalis</i>
	Pine	<i>Pinus</i>
	Western red cedar	<i>Thuja plicata</i>
Hardwood	Ash	<i>Fraxinus americana</i>
	Aspen/Poplar/Cottonwood	<i>Populus</i>
	Beech	<i>Fagus</i>
	Oak	<i>Quercus</i>
Tropical Wood	Abirucana	<i>Pouteria</i>
	African zebra	<i>Microberlinia</i>
	Antiaris	<i>Antiaris africana</i> <i>Antiaris toxicara</i>
	Cabreuva	<i>Myrocarpus fastigiatus</i>
	Cedar of Lebanon	<i>Cedra libani</i>
	Central American walnut	<i>Juglans olanchana</i>
	Cocabolla	<i>Dalbergia retusa</i>
	African ebony	<i>Diospyros crassiflora</i>
	Fernam bouc	<i>Caesalpinia</i>
	Honduras rosewood	<i>Dalbergia stevensonii</i>
	Iroko or kambala	<i>Chlorophora excelsa</i>
	Kejaat	<i>Pterocarpus angolensis</i>
	Kotobe	<i>Nesorgordonia papaverifera</i>
	Limba	<i>Terminalia superba</i>
	Mahogany (African)	<i>Khaya spp.</i>
	Makore	<i>Tieghemella heckelii</i>
	Mansonia/Beté	<i>Mansonia altissima</i>
	Nara	<i>Pterocarpus indicus</i>
	Obeche/African maple/Samba	<i>Triplochiton scleroxylon</i>

Palisander/Brazilian rosewood/Tulip wood/Jakaranda	<i>Dalbergia nigra</i>
Pau marfim	<i>Balfourdendron riedelianum</i>
Ramin	<i>Gonystylus bancanus</i>
Soapbark dust	<i>Quillaja saponaria</i>
Spindle tree wood	<i>Euonymus europaeus</i>



## SCHEDULE P

(Section 289)

## Hours of Work and Rest Periods for Work in Compressed or Rarefied Air

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Air pressure for one working period	max. hours of work per 24 hours	max. hours of work, 1st period	min hours of rest, 1st period	max hours of work, 2nd period	min. hours of rest, 2nd period
Less than 96 kPa	7.5	3.75	1.25	3.25	0.25
96 kPa or more but less than 138 kPa	6	3	2.25	3	0.75
138 kPa or more but less than 180 kPa	4	2	3.5	2	1.5
180 kPa or more but less than 220 kPa	3	1.5	4.5	1.5	1.5
220 kPa or more but less than 262 kPa	2	1	5	1	2
262 kPa or more but less than 303 kPa	1.5	0.75	5.5	0.75	2
303 kPa or more but less than 345 kPa	1	0.5	6	0.5	2

SCHEDULE Q *(Section 312 and subsection 318(1))*

Notifiable Chemical and Biological Substances

1. Any of the following chemical substances or any mixture containing more than 1% of any of them:

CAS* Number	Chemical Substance
92-67-1	4-Aminobiphenyl
492-80-8	Auromine
92-87-5	Benzidine
542-88-1	bis (Chloromethyl) ether
119-94-1	o-Dianisidine
91-94-1	3,3'-Dichlorobenzidine
107-30-2	Methyl chloromethyl ether
50-60-2	Mustard gas
91-59-8	2-Naphtylamine
92-93-3	4-Nitrobiphenyl
75-01-4	Vinyl chloride

\* "CAS" means the Chemical Abstracts Service Division of the American Chemical Society

2. Any of the following biological substances

(1) Genetically modified<sup>1</sup> micro-organisms<sup>2</sup>

<sup>1</sup> "Genetically modified" means genetic combinations not known to occur naturally.

<sup>2</sup> "Micro-organism" means any organism or consortium of organisms of microscopic size, including bacteria, protozoa, fungi, algae and viruses.

**SCHEDULE R**      (*Sections 313 and subsection 318(1)*)

**Designated Chemical and Biological Substances**

1. Any mixture containing less than 1% of any chemical substance listed in Schedule Q.
2. Any of the following chemical substances:

CAS* NUMBER	CHEMICAL SUBSTANCE
75-07-0	Acetaldehyde
60-35-5	Acetamide
79-06-1	Acrylamide
107-13-1	Acrylonitrile
1402-68-2	Aflatoxins
60-09-3	para-Aminoazobenzene
97-56-3	ortho-Aminoazotoluene
712-68-5	2-Amino-5(5-nitro-2-furyl)-1,3, 4-thiadiazole
61-82-5	Amitrole
90-04-0	ortho-Anisidine
1309-64-4	Antimony trioxide
7440-38-2	Arsenic and arsenic mixtures
1332-21-4	Asbestos
1912-24-9	Atrazine
151-56-4	Aziridine
98-87-3	Benzal chloride
71-43-2	Benzene
-	Benzidine-based dyes
271-89-6	Benzofuran
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
100-44-7	Benzyl chloride
618966	Benzyl violet 4B
-	Beryllium and beryllium compounds
75-27-4	Bromodichloromethane
3296-90-0	2,2-bis(bromomethyl)propane-1,3,-diol

CAS* NUMBER	CHEMICAL SUBSTANCE
106-99-0	1,3-Butadiene
3068-88-0	beta-Butyrolactone
25013-16-5	Butylated hydroxyanisole
-	Cadmium and cadmium compounds
191905	Captafol
56-23-5	Carbon tetrachloride
2593402	Carrageenan, degraded
-	Chlordane isomers
115-28-6	Chlorendic acid
-	Chlorinated paraffins
106-47-8	para-chloroaniline
67-66-3	Chloroform
95-57-8	2-Chlorophenol
108-43-0	3-Chlorophenol
106-48-9	4-Chlorophenol
95-83-0	4-Chloro-ortho-phenylenediamine
95-69-2	para-Chloro-ortho-toluidine
1897-45-6	Chlorothalonil
-	Chromium compounds, hexavalent
6459-94-5	CI Red 114
569-61-9	CI Basic Red 9
2429-74-5	CI Direct Blue 15
6358-53-8	Citrus Red 2
8007-45-2	Coal-tar pitches
8007-45-2	Coal-tars
-	Cobalt and cobalt compounds
8001-58-9	Creosotes
120-71-8	para-Cresidine
4748733	Cycasin
-	DDT and isomers
613-35-4	N,N'-Diacetylbenzidine

CAS* NUMBER	CHEMICAL SUBSTANCE
615-05-4	2,4-Diaminoanisole
101-80-4	4,4'-Diaminodiphenyl ether
95-80-7	2,4-Diaminotoluene
334-88-3	Diazomethane
226-36-8; 224-42-0	Dibenzacridine
96-12-8	1,2-Dibromo-3-chloropropane
79-43-6	Dichloroacetic acid
106-46-7	para-Dichlorobenzene
764-41-0	1,4-Dichloro-2-butene
107-06-2	1,2-Dichloroethane
75-09-2	Dichloromethane
542-75-6	1,3-Dichloropropene (technical grade)
62-73-7	Dichlorovos
1464-53-5	Diepoxybutane
117-81-7	Di(2-ethylhexyl)phthalate
-	Diesel engine exhaust
1615-80-1	1,2-Diethylhydrazine
64-67-5	Diethyl sulphate
101-90-6	Diglycidyl resorcinol ether
2973-10-6	Diisopropyl sulphate
79-44-7	Dimethylcarbamoyl chloride
68-12-2	Dimethylformamide
57-14-7	1,1-Dimethylhydrazine
540-73-8	1,2-Dimethylhydrazine
77-78-1	Dimethyl sulphate
-	Dinitropyrenes
25321-14-6	Dinitrotoluene
123-91-1	1,4-Dioxane
2475-48-8	Disperse blue
106-89-8	Epichlorohydrin
106-88-7	1,2-Epoxybutane

CAS* NUMBER	CHEMICAL SUBSTANCE
66733-21-9	Erionite
140-88-5	Ethyl acrylate
74-96-4	Ethyl bromide
106-93-4	Ethylene dibromide
75-21-8	Ethylene oxide
96-45-7	Ethylene thiourea
62-50-0	Ethyl methanesulphonate
759-73-9	N-Ethyl-N-nitrosourea
50-00-0	Formaldehyde
3570-75-0	2-(2-Formylhydrazino)-4(5-nitro-2-furyl)thiazole
-	Gasoline
765-34-4	Glycidaldehyde
2784-94-3	HC Blue 1
76-44-8	Heptachlor
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
608-73-1	Hexachlorocyclohexanes
67-72-1	Hexachloroethane
680-31-9	Hexamethylphosphoramide
302-01-2	Hydrazine
22398-80-7	Indium phosphide
193-39-5	Indone[1,2,3-cd]pyrene
78-79-5	Isoprene
143-50-0	Kepone
-	Lead (compounds), inorganics
632-99-5	Magenta (contains CI Basic Red 9)
-	Marine diesel fuels
484-20-8	5-Methoxypsoralen
75-55-8	2-Methylaziridine
101-14-4	4,4'-Methylene bis(2-chloroaniline)
838-88-0	4,4'-Methylene bis(2-methylaniline)

CAS* NUMBER	CHEMICAL SUBSTANCE
101-77-9	4,4'-Methylene dianiline
60-34-4	Methyl hydrazine
74-88-4	Methyl iodide
-	Methylmercury Compounds
66-27-3	Methyl methanesulphonate
129-15-7	2-Methyl-1-nitroanthraquinone
684-93-5	N-Methyl-N-nitrosourea
615-53-2	N-Methyl-N-nitrosourethane
8012-95-1	Mineral oils, untreated and mildly treated
2385-85-5	Mirex
50-60-2	Mustard gas
-	Nickel (compounds)
12035-72-2	Nickel subsulphide
-	Nitrilotriacetic acid and its salts
1836-75-5	Nitrofen (technical grade)
607-57-8	2-Nitrofluorene
555-84-0	1-[(5-Nitrofurfurylidene)amino]2-imidazolidinone
51-75-2	Nitrogen mustard
79-46-9	2-Nitropropane
5522-43-0; 57835-92-4	Nitropyrene isomers
924-16-3	N-Nitrosodi-n-butylamine
1116-54-7	N-Nitrosodiethanolamine
55-18-5	N-Nitrosodiethylamine
62-75-9	N-Nitrosodimethylamine
621-64-7	N-Nitrosodi-N-propylamine
4549-40-0	N-Nitrosomethylvinylamine
59-89-2	N-Nitrosomorpholine
16543-55-8	N-Nitrosornicotine
100-75-4	N-Nitrosopiperidine
930-55-2	N-Nitrosopyrrolidine
13256-22-9	N-Nitrososarcosine

CAS* NUMBER	CHEMICAL SUBSTANCE
2646-17-5	Oil orange SS
12174-11-7	Palygorskite (attapulgite) (long fibres, > 5 microns)
-	Penta/hexa cyclic unsubstituted aromatic hydrocarbons
135-88-6	N-Phenyl-beta-naphthylamine
95-54-5	o-Phenylenediamine
122-60-1	Phenylglycidyl ether
100-63-0	Phenylhydrazine
12584427	Polybrominated biphenyls
1336-36-3	Polychlorinated biphenyls
3564-908; 3761-53-3	Ponceau 3R
2139591	Potassium bromate
1120-71-4	1,3-Propane sultone
57-57-8	$\beta$ -Propiolactone
75-55-8	Propylene imine
75-56-9	Propylene oxide
-	Refractory ceramic fibres
-	Residual fuel oils (heavy fuel oils)
94-59-7	Safrole
68308-34-9	Shale-oils
-	Silica crystalline (respirable size)
409-21-2	Silicon carbide, fibrous (including whiskers)
132-27-4	Sodium ortho-phenylphenate
-	Soots from pyrolysis of heating fuels
100-42-5	Styrene
96-09-3	Styrene-7,8-oxide
95-06-7	Sulphallate
-	Sulphuric acid (strong acid mist exposure, only)
637719	2,3,7,8-Tetrachlorodibenzo-para-dioxin
127-18-4	Tetrachloroethylene
116-14-3	Tetrafluoroethylene



CAS* NUMBER	CHEMICAL SUBSTANCE
509-14-8	Tetranitromethane
62-55-5	Thioacetamide
139-65-1	Thiodianiline
141-90-2	Thiouracil
62-56-6	Thiourea
119-93-7	ortho-Tolidine
584-84-9	Toluene diisocyanates
95-53-4	ortho-Toluidine
106-49-0	para-Toluidine
8001-35-2	Chlorinated camphene
52-24-4	Tris(1-aziridinyl)phosphine sulphide
126-72-7	Tris(2,3-dibromopropyl)phosphate
72-57-1	Trypan Blue
-	Uranium, (natural) soluble and insoluble compounds
51-79-6	Urethane
108-05-4	Vinyl acetate
593-60-2	Vinyl bromide
100-40-3	4-Vinyl cyclohexene
106-87-6	Vinyl cyclohexene dioxide
75-02-5	Vinyl fluoride
-	Wood dusts (Oak, Beech, Birch, Mahogany, Teak and Walnut)
13530-65-9; 11103-86-9; 37300-23-5	Zinc chromates
1300-73-8	Xylidine isomers

\*"CAS" means the Chemical Abstracts Service Division of the American Chemical Society

**Table A**Inhalable fraction:

For the application of this limit, inhalable fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

<b>Particle Aerodynamic Diameter (<math>\mu\text{m}</math>)</b>	<b>Inhalable Particulate Mass (IPM) (%)</b>
	100
1	97
2	94
5	87
10	77
20	65
30	58
40	54.5
50	52.5
100	50

**Table B**Respirable fraction:

For the application of this limit, respirable fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

<b>Particle Aerodynamic Diameter (<math>\mu\text{m}</math>)</b>	<b>Respirable Particulate Mass (RPM) (%)</b>
0	100
1	97
2	91
3	74
4	50
5	30
6	17
7	9
8	5
10	1

**Table C**Thoracic fraction:

For the application of this limit, thoracic fraction is that fraction of the aerosol that passes a size selector with the following characteristics:

Particle Aerodynamic Diameter ( $\mu\text{m}$ )	Thoracic Particulate Mass (TPM)(%)
0	100
2	94
4	89
6	80.5
8	67
10	50
12	35
14	23
16	15
18	9.5
20	6
25	2

**Table D**

## Commercially Important Tree Species Suspected of Inducing Sensitization

Wood Type	Common	Latin
Softwood	California redwood	<i>Sequoia sempervirens</i>
	Eastern white cedar	<i>Thuja occidentalis</i>
	Pine	<i>Pinus</i>
	Western red cedar	<i>Thuja plicata</i>
Hardwood	Ash	<i>Fraxinus americana</i>
	Aspen/Poplar/Cottonwood	<i>Populus</i>
	Beech	<i>Fagus</i>
	Oak	<i>Quercus</i>
Tropical Wood	Abirucana	<i>Pouteria</i>
	African zebra	<i>Microberlinia</i>
	Antiaris	<i>Antiaris africana</i> <i>Antiaris toxicara</i>
	Cabreuva	<i>Myrocarpus fastigiatus</i>
	Cedar of Lebanon	<i>Cedra libani</i>
	Central American walnut	<i>Juglans olanchana</i>
	Cocabolla	<i>Dalbergia retusa</i>
	African ebony	<i>Diospryos crassiflora</i>
	Fernam bouc	<i>Caesalpinia</i>
	Honduras rosewood	<i>Dalbergia stevensonii</i>
	Iroko or kambala	<i>Chlorophora excelsa</i>
	Kejaat	<i>Pterocarpus angolensis</i>
	Kotobe	<i>Nesorgordonia papaverifera</i>
	Limba	<i>Terminalia superba</i>
	Mahogany (African)	<i>Khaya spp.</i>
	Makore	<i>Tieghemella heckelii</i>
	Mansonia/Beté	<i>Mansonia altissima</i>
Nara	<i>Pterocarpus indicus</i>	

Obeche/African maple/Samba	<i>Triplochiton scleroxylon</i>
Palisander/Brazilian rosewood/ Tulip wood/Jakaranda	<i>Dalbergia nigra</i>
Pau marfim	<i>Balfourdendron riedelianum</i>
Ramin	<i>Gonystylus bancanus</i>
Soapbark dust	<i>Quillaja saponaria</i>
Spindle tree wood	<i>Euonymus europaeus</i>

## SCHEDULE P

(Section 289)

## Hours of Work and Rest Periods for Work in Compressed or Rarefied Air

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Air pressure for one working period	max. hours of work per 24 hours	max. hours of work, 1st period	min hours of rest, 1st period	max hours of work, 2nd period	min. hours of rest, 2nd period
Less than 96 kPa	7.5	3.75	1.25	3.25	0.25
96 kPa or more but less than 138 kPa	6	3	2.25	3	0.75
138 kPa or more but less than 180 kPa	4	2	3.5	2	1.5
180 kPa or more but less than 220 kPa	3	1.5	4.5	1.5	1.5
220 kPa or more but less than 262 kPa	2	1	5	1	2
262 kPa or more but less than 303 kPa	1.5	0.75	5.5	0.75	2
303 kPa or more but less than 345 kPa	1	0.5	6	0.5	2

## SCHEDULE Q

*(Section 312 and  
subsection 318(1))*

## Notifiable Chemical and Biological Substances

1. Any of the following chemical substances or any mixture containing more than 1% of any of them:

CAS* Number	Chemical Substance
92-67-1	4-Aminobiphenyl
492-80-8	Auromine
92-87-5	Benzidine
542-88-1	bis (Chloromethyl) ether
119-94-1	o-Dianisidine
91-94-1	3,3'-Dichlorobenzidine
107-30-2	Methyl chloromethyl ether
50-60-2	Mustard gas
91-59-8	2-Naphtylamine
92-93-3	4-Nitrobiphenyl
75-01-4	Vinyl chloride

\* "CAS" means the Chemical Abstracts Service Division of the American Chemical Society

2. Any of the following biological substances

(1) Genetically modified<sup>1</sup> micro-organisms<sup>2</sup>

<sup>1</sup> "Genetically modified" means genetic combinations not known to occur naturally.

<sup>2</sup> "Micro-organism" means any organism or consortium of organisms of microscopic size, including bacteria, protozoa, fungi, algae and viruses.

## SCHEDULE R

*(Sections 313 and  
subsection 318(1))*

## Designated Chemical and Biological Substances

1. Any mixture containing less than 1% of any chemical substance listed in Schedule Q.
2. Any of the following chemical substances:

CAS* NUMBER	CHEMICAL SUBSTANCE
75-07-0	Acetaldehyde
60-35-5	Acetamide
79-06-1	Acrylamide
107-13-1	Acrylonitrile
1402-68-2	Aflatoxins
60-09-3	para-Aminoazobenzene
97-56-3	ortho-Aminoazotoluene
712-68-5	2-Amino-5(5-nitro-2-furyl)-1,3, 4-thiadiazole
61-82-5	Amitrole
90-04-0	ortho-Anisidine
1309-64-4	Antimony trioxide
7440-38-2	Arsenic and arsenic mixtures
1332-21-4	Asbestos
1912-24-9	Atrazine
151-56-4	Aziridine
98-87-3	Benzal chloride
71-43-2	Benzene
-	Benzidine-based dyes
271-89-6	Benzofuran
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
100-44-7	Benzyl chloride
618966	Benzyl violet 4B
-	Beryllium and beryllium compounds
75-27-4	Bromodichloromethane
3296-90-0	2,2-bis(bromomethyl)propane-1,3,-diol

CAS* NUMBER	CHEMICAL SUBSTANCE
106-99-0	1,3-Butadiene
3068-88-0	beta-Butyrolactone
25013-16-5	Butylated hydroxyanisole
-	Cadmium and cadmium compounds
191905	Captafol
56-23-5	Carbon tetrachloride
2593402	Carrageenan, degraded
-	Chlordane isomers
115-28-6	Chlorendic acid
-	Chlorinated paraffins
106-47-8	para-chloroaniline
67-66-3	Chloroform
95-57-8	2-Chlorophenol
108-43-0	3-Chlorophenol
106-48-9	4-Chlorophenol
95-83-0	4-Chloro-ortho-phenylenediamine
95-69-2	para-Chloro-ortho-toluidine
1897-45-6	Chlorothalonil
-	Chromium compounds, hexavalent
6459-94-5	CI Red 114
569-61-9	CI Basic Red 9
2429-74-5	CI Direct Blue 15
6358-53-8	Citrus Red 2
8007-45-2	Coal-tar pitches
8007-45-2	Coal-tars
-	Cobalt and cobalt compounds
8001-58-9	Creosotes
120-71-8	para-Cresidine
4748733	Cycasin
-	DDT and isomers
613-35-4	N,N'-Diacetylbenzidine



CAS* NUMBER	CHEMICAL SUBSTANCE
615-05-4	2,4-Diaminoanisole
101-80-4	4,4'-Diaminodiphenyl ether
95-80-7	2,4-Diaminotoluene
334-88-3	Diazomethane
226-36-8; 224-42-0	Dibenzacridine
96-12-8	1,2-Dibromo-3-chloropropane
79-43-6	Dichloroacetic acid
106-46-7	para-Dichlorobenzene
764-41-0	1,4-Dichloro-2-butene
107-06-2	1,2-Dichloroethane
75-09-2	Dichloromethane
542-75-6	1,3-Dichloropropene (technical grade)
62-73-7	Dichlorovos
1464-53-5	Diepoxybutane
117-81-7	Di(2-ethylhexyl)phthalate
-	Diesel engine exhaust
1615-80-1	1,2-Diethylhydrazine
64-67-5	Diethyl sulphate
101-90-6	Diglycidyl resorcinol ether
2973-10-6	Diisopropyl sulphate
79-44-7	Dimethylcarbamoyl chloride
68-12-2	Dimethylformamide
57-14-7	1,1-Dimethylhydrazine
540-73-8	1,2-Dimethylhydrazine
77-78-1	Dimethyl sulphate
-	Dinitropyrenes
25321-14-6	Dinitrotoluene
123-91-1	1,4-Dioxane
2475-48-8	Disperse blue
106-89-8	Epichlorohydrin
106-88-7	1,2-Epoxybutane

CAS* NUMBER	CHEMICAL SUBSTANCE
66733-21-9	Erionite
140-88-5	Ethyl acrylate
74-96-4	Ethyl bromide
106-93-4	Ethylene dibromide
75-21-8	Ethylene oxide
96-45-7	Ethylene thiourea
62-50-0	Ethyl methanesulphonate
759-73-9	N-Ethyl-N-nitrosourea
50-00-0	Formaldehyde
3570-75-0	2-(2-Formylhydrazino)-4(5-nitro-2-furyl)thiazole
-	Gasoline
765-34-4	Glycidaldehyde
2784-94-3	HC Blue 1
76-44-8	Heptachlor
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
608-73-1	Hexachlorocyclohexanes
67-72-1	Hexachloroethane
680-31-9	Hexamethylphosphoramide
302-01-2	Hydrazine
22398-80-7	Indium phosphide
193-39-5	Indone[1,2,3-cd]pyrene
78-79-5	Isoprene
143-50-0	Kepone
-	Lead (compounds), inorganics
632-99-5	Magenta (contains CI Basic Red 9)
-	Marine diesel fuels
484-20-8	5-Methoxypsoralen
75-55-8	2-Methylaziridine
101-14-4	4,4'-Methylene bis(2-chloroaniline)
838-88-0	4,4'-Methylene bis(2-methylaniline)

CAS* NUMBER	CHEMICAL SUBSTANCE
101-77-9	4,4'-Methylene dianiline
60-34-4	Methyl hydrazine
74-88-4	Methyl iodide
-	Methylmercury Compounds
66-27-3	Methyl methanesulphonate
129-15-7	2-Methyl-1-nitroanthraquinone
684-93-5	N-Methyl-N-nitrosourea
615-53-2	N-Methyl-N-nitrosourethane
8012-95-1	Mineral oils, untreated and mildly treated
2385-85-5	Mirex
50-60-2	Mustard gas
-	Nickel (compounds)
12035-72-2	Nickel subsulphide
-	Nitrilotriacetic acid and its salts
1836-75-5	Nitrofen (technical grade)
607-57-8	2-Nitrofluorene
555-84-0	1-[(5-Nitrofurfurylidene)amino]2-imidazolidinone
51-75-2	Nitrogen mustard
79-46-9	2-Nitropropane
5522-43-0; 57835-92-4	Nitropyrene isomers
924-16-3	N-Nitrosodi-n-butylamine
1116-54-7	N-Nitrosodiethanolamine
55-18-5	N-Nitrosodiethylamine
62-75-9	N-Nitrosodimethylamine
621-64-7	N-Nitrosodi-N-propylamine
4549-40-0	N-Nitrosomethylvinylamine
59-89-2	N-Nitrosomorpholine
16543-55-8	N-Nitrosornicotine
100-75-4	N-Nitrosopiperidine
930-55-2	N-Nitrosopyrrolidine
13256-22-9	N-Nitrososarcosine

CAS* NUMBER	CHEMICAL SUBSTANCE
2646-17-5	Oil orange SS
12174-11-7	Palygorskite (attapulgite) (long fibres, > 5 microns)
-	Penta/hexa cyclic unsubstituted aromatic hydrocarbons
135-88-6	N-Phenyl-beta-naphthylamine
95-54-5	o-Phenylenediamine
122-60-1	Phenylglycidyl ether
100-63-0	Phenylhydrazine
12584427	Polybrominated biphenyls
1336-36-3	Polychlorinated biphenyls
3564-908; 3761-53-3	Ponceau 3R
2139591	Potassium bromate
1120-71-4	1,3-Propane sultone
57-57-8	$\beta$ -Propiolactone
75-55-8	Propylene imine
75-56-9	Propylene oxide
-	Refractory ceramic fibres
-	Residual fuel oils (heavy fuel oils)
94-59-7	Safrole
68308-34-9	Shale-oils
-	Silica crystalline (respirable size)
409-21-2	Silicon carbide, fibrous (including whiskers)
132-27-4	Sodium ortho-phenylphenate
-	Soots from pyrolysis of heating fuels
100-42-5	Styrene
96-09-3	Styrene-7,8-oxide
95-06-7	Sulphallate
-	Sulphuric acid (strong acid mist exposure, only)
637719	2,3,7,8-Tetrachlorodibenzo-para-dioxin
127-18-4	Tetrachloroethylene
116-14-3	Tetrafluoroethylene

CAS* NUMBER	CHEMICAL SUBSTANCE
509-14-8	Tetranitromethane
62-55-5	Thioacetamide
139-65-1	Thiodianiline
141-90-2	Thiouracil
62-56-6	Thiourea
119-93-7	ortho-Tolidine
584-84-9	Toluene diisocyanates
95-53-4	ortho-Toluidine
106-49-0	para-Toluidine
8001-35-2	Chlorinated camphene
52-24-4	Tris(1-aziridinyl)phosphine sulphide
126-72-7	Tris(2,3-dibromopropyl)phosphate
72-57-1	Trypan Blue
-	Uranium, (natural) soluble and insoluble compounds
51-79-6	Urethane
108-05-4	Vinyl acetate
593-60-2	Vinyl bromide
100-40-3	4-Vinyl cyclohexene
106-87-6	Vinyl cyclohexene dioxide
75-02-5	Vinyl fluoride
-	Wood dusts (Oak, Beech, Birch, Mahogany, Teak and Walnut)
13530-65-9; 11103-86-9; 37300-23-5	Zinc chromates
1300-73-8	Xylidine isomers

\*"CAS" means the Chemical Abstracts Service Division of the American Chemical Society

## SCHEDULE S

*(Subsection 339(1))*

## Organ or Tissue Weighting Factors

Item	Column 1 Organ or Tissue	Column 2 Weighting Factor
1	Gonads (testes or ovaries)	0.20
2	Red bone marrow	0.12
3	Colon	0.12
4	Lung	0.12
5	Stomach	0.12
6	Bladder	0.05
7	Breast	0.05
8	Liver	0.05
9	Oesophagus	0.05
10	Thyroid gland	0.05
11	Skin <sup>1</sup>	0.01
12	Bone Surfaces	0.01
13	All organs and tissues not listed in items 1 to 12 (remainder organs and tissues) collectively, including the adrenal gland, brain, extra-thoracic airway, small intestine, kidney, muscles, pancreas, spleen, thymus and uterus <sup>2,3</sup>	0.05
14	Whole body	1

<sup>1</sup> The weighting factor for skin applies only when the skin of the whole body is exposed.

<sup>2</sup> When the equivalent dose received by and committed to one of these remainder organs and tissues exceeds the equivalent dose received by and committed to any one of the organs and tissues listed in items 1 to 12, a weighting factor of 0.025 must be applied to that remainder organ or tissue and a weighting factor of 0.025 must be applied to the average equivalent dose received by and committed to the rest of the remainder organs and tissues.

<sup>3</sup> Hands, feet and the lens of an eye have no weighting factor.

## SCHEDULE T

*(Subsection 340(1))*

## Radiation Weighting Factors

Type and Energy Range		Radiation Weighting Factor, $w_R$
Photons, all energies (X-rays, gamma rays)		1
Electron and muons, all energies (beta rays)		1
Neutrons, energy	< 10 keV	5
	10 keV to 100 keV	10
	> 100 keV to 2 MeV	20
	> 2 MeV to 20 MeV	10
	>20 MeV	5
Protons, other than recoil protons, energy > 2 MeV		5
Alpha particles, fission fragments, heavy nuclei		20

SCHEDULE U *(Subsections 340(2), 341(2),  
(3) and (4))*

Effective Dose Limit

Item	Column 1 Person	Column 2 Period	Column 3 Effective Dose (millisievert)
1	Occupational worker, including a pregnant occupational worker	One year dosimetry period	50
		Five year dosimetry period	100
2	Pregnant occupational worker	Balance of the pregnancy	4
3	A worker who is not an occupational worker	One calendar year	1



## SCHEDULE V

(Section 340(4))

## Specific Equivalent Dose Limits

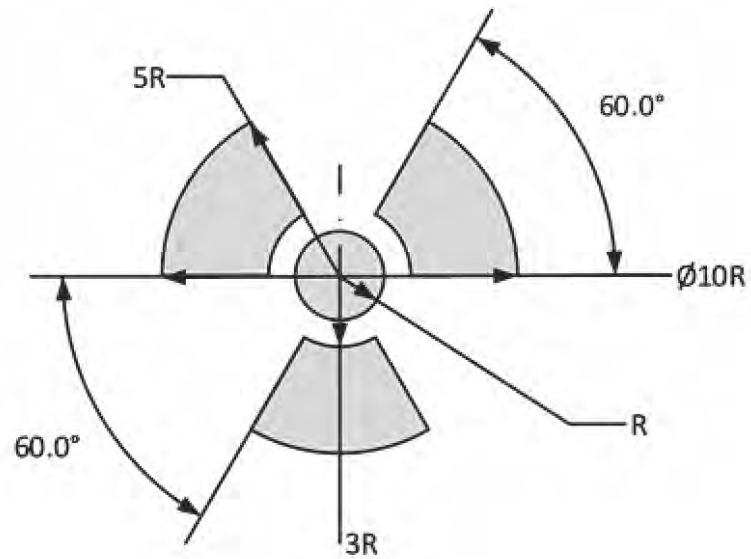
Item	Column 1 Organ or Tissue	Column 2 Person	Column 3 Period	Column 4 Equivalent Dose (mSv)
1	Lens of an eye	Occupational worker	One year dosimetry period	150
		Any other person	One calendar year	15
2	Skin <sup>1</sup>	Occupational worker	One year dosimetry period	500
		Any other person	One calendar year	50
3	Hands and feet	Occupational worker	One year dosimetry period	500
		Any other person	One calendar year	50

<sup>1</sup> When skin is unevenly irradiated, the equivalent dose received by the skin is the average equivalent dose over the 1 cm<sup>2</sup> area that received the highest equivalent dose.

## SCHEDULE W

(Section 357)

## Radiation Warning Symbol



## NOTES

1.  $R$  is the radius of the central disc.
2. The three blades and the central disc of the symbol must be
  - (1) Magenta or black (shaded portions); and
  - (2) Located on a yellow background.
3. Dimensioning lines are not part of the symbol.

## SCHEDULE X

*(Sections 364 and  
subsection 377(1))*

## Asbestos Processes

## Part A – High Risk Asbestos Processes

1. The removal, encapsulation, enclosure or disturbance of anything but minor amounts of friable asbestos-containing material during the repair, alteration, maintenance, demolition, or dismantling of any part of a plant.
2. The cleaning, maintenance or removal of air-handling equipment in buildings where sprayed fireproofing asbestos-containing materials have been applied to the airways or ventilation ducts.
3. The dismantling or the major alteration or repair of a boiler, furnace, kiln or similar device, or part of a boiler, furnace, kiln or similar device, that is made of asbestos-containing materials.
4. The use of power tools not equipped with HEPA filtration to grind, cut or abrade any asbestos-containing surface or product.

## Part B – Moderate Risk Asbestos Processes

1. The use of a power tool equipped with HEPA filtration to cut, shape or grind any asbestos-containing surface or product.
2. The removal of a false ceiling or part of a false ceiling where friable asbestos-containing material is, or is likely to be, lying on the surface of the false ceiling.
3. The removal, the encapsulation or enclosure or the disturbance of minor amounts of friable asbestos-containing material during the repair, alteration, maintenance, demolition, or dismantling of a structure, machine or equipment or part of a structure, machine or equipment.

## Part C – Low Risk Asbestos Processes

1. The installation or removal of manufactured asbestos-containing products when sanding, cutting or similar disturbance is not required.
2. The use of hand tools to cut, shape, drill or remove a manufactured asbestos-containing product.
3. The removal of drywall material where asbestos joint filling compounds have been used.

4. The use of personal protective equipment made of asbestos-containing textiles.
5. The transporting or handling of asbestos-containing materials in sealed containers.
6. The cleaning or disposing of minor amounts of asbestos debris that has come loose or fallen from a friable surface.
7. The removal of small samples of asbestos-containing material for the purpose of identification.

SCHEDULE Y *(Subsections 460(4), (6), (7),  
(8), (9) and (10))*

Minimum Distances from Exposed Energized High Voltage Conductors

<b>Voltage Phase to Phase (kV)</b>	<b>Voltage to Ground (kV)</b>	<b>Column 1 Metres (m)</b>	<b>Column 2 Metres (m)</b>	<b>Column 3 Metres (m)</b>	<b>Column 4 Metres (m)</b>	<b>Column 5 Metres (m)</b>	<b>Column 6 Metres (m)</b>
230	133	6.1	1.4	1.83	2.4	1.41	1.85
138	79.8	4.6	1	1.22	1.9	0.92	1.35
72	41.6	4.6	0.6	0.8	1.6	0.61	1.05
25	14.4	3	0.3	0.6	1.2	0.12	0.55
15	8.6	3	0.3	0.6	1.1	0.12	0.55
4.16	2.4	3	0.15	0.6	1.05	0.04	0.5
0.75	0.75	3	0.15	0.6	1.05	0.04	0.05