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**Proposed Amendments  
to the *Workplace Health and Safety Regulations*  
made under the *Occupational Health and Safety Act***

**Part 1: Interpretation and Application**

*[Note: Part 1 of the Workplace Health and Safety Regulations already exists. These definitions will be added to the definitions already set out in that Part. Definitions are placed in Part 1 where they apply to more than one Part of the regulations. Definitions that only apply to a specific Part are placed at the beginning of that Part.]*

**Definitions for these regulations**

**1.1** In these regulations,

"ASTM" means the American Society for Testing and Materials;

"dBA" means the sound level in decibels as measured on a sound level meter conforming to the requirements of the ANSI Specification for Sound Level Meters, S1.4 Type S2A, set to the "A"-weighting network and slow meter response;

"designated" means, in relation to an employer, appointed in writing by the employer;

"hazardous" means a condition or substance that is likely to, because of its harmful nature, cause injury or damage to the health or safety of a person exposed to it;

"NIOSH" means the National Institute of Occupational Safety and Health;

"noise" means sound, and for the purpose of this regulation the terms "sound" and "noise" have the same meaning;

"occupational exposure limit" or "OEL" means the maximum exposure to

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a hazardous condition to which a person may be exposed as set out in Part 2 of these regulations;

"substance" includes a chemical or biological substance.

**Part 2: Occupational Health**

*[Note: Part 2 of the Workplace Health and Safety Regulations already exists but will be replaced with this more comprehensive wording.]*

**Definitions for Part 2**

**2.1** In this Part,

"ACGIH" means the American Conference of Governmental Industrial Hygienists;

"ACGIH Guide" means the edition of "Threshold Limit Values for Chemical Substances and Physical Agents (TLVs®) and Biological Exposure Indices (BEIs®)" published by the ACGIH that is adopted in accordance with subsection 2.2(2);

"audiogram" means a written, printed or electronic record of an audiometric test as a function of frequency;

"audiologist" means a health professional holding a professional designation in audiology whose primary concern is auditory function and whose principal efforts are directed towards the identification, assessment and rehabilitation of those with auditory disorders;

"audiometer" means an electro-acoustical device that

- (i) provides pure tones at selected frequencies of calibrated outputs, and
- (ii) is used to measure pure-tone air conduction hearing threshold levels;

"audiometric technician" means a person who

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- (i) administers occupational hearing tests under the supervision of a medical practitioner or audiologist, and
- (ii) who holds a certificate of attendance from a recognized training course;

"baseline audiogram" means the first audiogram taken by or on behalf of the current employer at the beginning of the employment or when there is a change in the acoustical environment;

"blood" includes blood, bodily fluids, human blood components and products made from human blood;

"bloodborne pathogens" means pathogenic microorganisms that are present in human blood and can cause disease in humans, including, but not limited to, hepatitis B virus and human immunodeficiency virus;

"carcinogen" means any substance that has been identified either by the ACGIH as an A1, A2 or A3 carcinogen or by IARC as a Class 1 or 2 carcinogen;

"condition" means the presence of a chemical substance, physical agent, biological substance or agent or an ergonomic situation;

"contaminated" means the presence or the reasonably anticipated presence of blood or other potentially infectious material on an item, object or surface;

"engineering controls" means mechanical or physical measures, other than personal protective equipment, that provide a replacement, modification or elimination of a hazardous condition and are implemented to reduce the level of a hazardous condition to which a person is exposed;

"EPA" means the United States of America, Environmental Protection Agency;

"health professional" means

- (i) a medical practitioner as defined in the Medical Act;

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- (ii) a nurse as defined in the Registered Nurses Act; or
- (iii) for the purposes of Section 2.25 of these regulations, an audiologist;

"hearing level" means the amount, in decibels, by which the threshold of audibility of an ear differs from the reference threshold level of the audiometer;

"hearing protection" means a sound attenuating personal protection device designed and manufactured to be worn by a person to reduce exposure to sound;

"HSE" means the Health and Safety Executive of the United Kingdom;

"IARC" means the International Agency for Research on Cancer;

"noise exposure level (Lex,T)" means ten times the logarithm (base 10) of the time integral of the squared A-weighted sound pressure relative to 20 µPa for the time actually worked, divided by T hours (the standardized shift length of 8 h, Lex,8h);

"nuclear substance" means any prescribed substance within the meaning of the Nuclear Safety and Control Act, S.C. 1997, c.9;

"OSHA" means the United States Occupational Safety and Health Administration;

"physical agent" in relation to occupational exposure, means an agent of acoustic, electromagnetic, ergonomic, mechanical or thermal nature;

"reasonably anticipated" means an event that is foreseeable in considering proximate cause, foreseeable dangers, foreseeable injury, and foreseeable risk, unless the person on whom the duty to anticipate is placed can show that there is a gross disproportion between the benefit of the duty and the cost, time, trouble and money, or the measures to secure the duty;

"sharps" means an object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes and exposed ends of dental wires;

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"sound level meter" means a device for measuring sound levels;

"threshold limit values" means the threshold limit values established by the ACGIH Guide that represent

- (i) for chemical substances, the airborne concentrations of chemical substances and conditions under which it is believed that nearly all healthy workers may be repeatedly exposed, day after day, over a working lifetime, without adverse health effects,
- (ii) for physical agents, the levels of exposure and conditions under which it is believed that nearly all healthy workers may be repeatedly exposed, day after day, without adverse health effects,

"universal precautions" means the precautions to be taken to prevent the transmission of bloodborne pathogens.

**Conflicts with Part 2**

- 2.2 (1)** This Part prevails if there is any conflict between this Part and any of the following:
- (a) another provision of these regulations;
  - (b) any other regulations made under the Act except the *Underground Mining Regulations*.
- (2)** In these regulations the ACGIH Guide
- (a) is deemed to be the 2011 edition for a 5 year period commencing on the effective date of this Part of these regulations; and
  - (b) will be automatically updated every 5 years to the edition that is 5 years more recent than the deemed edition.

**Occupational Exposure Limit**

- 2.3 (1)** An employer must comply with, and ensure compliance with, the occupational exposure limits for exposure to all of the following:

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- (a) gases;
- (b) vapours;
- (c) mists;
- (d) fumes;
- (e) smoke;
- (f) dust;
- (g) chemical substances;
- (h) physical agents.

- (2) The occupational exposure limit for a hazardous condition or substance must be as listed in ACGIH Guide except as set out in subsection (6);
- (3) If there is an exposure to two or more hazardous conditions or substances which act upon the same organ, the combined effect of the conditions, substances or agents must, in the absence of positive evidence to the contrary, be considered to be additive, and the sum of the fractions in the following formula must not exceed 1:

$$\frac{C[1]}{T[1]} + \frac{C[2]}{T[2]} + \frac{C[3]}{T[3]} + \dots + \frac{C[n]}{T[n]}$$

where,

C = the measured level of exposure to a hazardous condition or substance;

T = the applicable occupational exposure limit for an individual hazardous condition or substance;

n = the number of hazardous conditions or substances;

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- (4) If a person is exposed to a hazardous condition or substance with an occupational exposure limit for periods greater than 8 hours in any 24 hour period, the following formula must be applied:

$$\text{Adjusted OEL} = \text{regular OEL} \times (8 / h) \times (24\text{-h} / 16);$$

h = hours of work in a 24 hour period;

- (5) If a short term exposure limit or a ceiling limit has not been set in clause (a) for a hazardous condition or substance that has an 8 hour occupational exposure limit, exposure to the hazardous condition or substance must not exceed any of the following:
- (a) 3 times the 8 hour occupational exposure limit for the hazardous condition or substance for a total of 30 minutes in any 8 hour period;
  - (b) 5 times the 8 hour occupational exposure limit for the hazardous condition or substance for any period of time.
- (6) Despite the occupational exposure limits set out in the ACGIH Guide, the following list of substances have the prescribed occupational exposure limits:

Substance	Adopted Value	
	TWA	STEL
Hydrogen Sulfide	10 ppm	15ppm
Sulfur Dioxide	2 ppm	5 ppm
Wood Dust		
Western Red Cedar	0.5 mg/m <sup>3</sup>	N/A
All other species	1 mg/m <sup>3</sup>	N/A

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**Occupational exposure limit for a hazardous substance**

- 2.4** (1) An employer must ensure that the level of exposure to the hazardous condition or substance does not exceed the occupational exposure limit for any period of time identified as the exposure time frame for the limit.
- (2) Despite subsection (1), an employer must ensure measures are taken to reduce, as much as is reasonably practicable, the level of a hazardous condition or substance to which a person is exposed in the workplace.

**Controlling exposure to a hazardous condition or substance**

- 2.5** (1) Subject to subsection (2), an employer must control the level of exposure to a hazardous condition or substance at a workplace by substituting a hazardous substance with an equivalent substance that is less harmful.
- (2) If a substitution in subsection (1) is not reasonably practicable, an employer may use engineering controls.
- (3) If engineering controls in subsection (2) are not reasonably practicable, an employer may implement work practices and procedures.
- (4) If work practices and procedures in subsection (3) are not reasonably practicable, an employer may implement personal and occupational hygiene facilities and practices.
- (5) If personal and occupational hygiene facilities and practices in subsection (4) are not reasonably practicable, an employer may use other means to control the level of exposure to a hazardous condition or substance that provide an equivalent level of health and safety as the measures set out in subsections (1) to (4).
- (6) Except in the circumstances set out in subsection (7), personal protective equipment must not be used as a primary means of protecting a person from an exposure to a hazardous condition or substance.
- (7) An employer must provide personal protective equipment that is adequate in the circumstances to protect the user of the equipment when the controls and practices required in subsection (1) to (5) meet at least one of the following requirements:
- (a) they are not in existence or are not obtainable;



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- (b) they are not reasonably practicable to adopt, install or provide;
- (c) they are rendered ineffective because of a temporary breakdown or regular maintenance of such controls; or
- (d) they are ineffective to prevent, control or limit exposure because of an emergency.

**Exposure to hazardous condition or substance above occupational exposure limit**

**2.6** An employer must do all of the following when a person is exposed to a hazardous condition or substance above the occupational exposure limit:

- (a) immediately protect the exposed person from further excess exposure;
- (b) provide information to the exposed person on the nature and extent of the excess exposure;
- (c) identify and control the source of the excess exposure as soon as reasonably practicable;
- (d) inform the committee or a representative, if one exists, as soon as reasonably practicable, of the incident and the steps taken to control the excess exposure.

**Consuming food or beverages**

**2.7** An employer must ensure that food or beverages are not stored, prepared or consumed in an area in which a hazardous substance is handled.

**Assessing and managing a hazardous condition or substance**

**2.8 (1)** A person who collects and analyzes a hazardous substance to assess the level of exposure for the purpose of the Act or this regulation, must use one of the following methods:

- (a) a method in accordance with NIOSH, HSE, OSHA, EPA or ASTM manuals; or
- (b) an alternative method and procedure that is approved by the Director.

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- (2) An employer must inform an employee who may be impacted by a hazardous substance in subsection (1) about the purpose of the assessment.
- (3) An employer must manage a hazardous condition in a workplace by ensuring all of the following are provided:
  - (a) adequate procedures and processes for the safe handling, use, storage and production of the hazardous substance or agent;
  - (b) information on the nature and degree of the effects of the hazardous condition on the health or safety of a person exposed to the hazardous condition;
  - (c) training for employees, including all of the following:
    - (i) proper and safe handling procedures for a hazardous substance or agent including, but not limited to, workplace specific WHIMS training,
    - (ii) the proper use of any personal protective equipment or controls that may be necessary.

**Record keeping**

- 2.9** (1) An employer must ensure a record is made of all personal and area monitoring performed in accordance with these regulations, including all of the following:
- (a) the type of monitoring;
  - (b) the type of equipment used;
  - (c) the time and duration of the monitoring;
  - (d) the frequency of the monitoring;
  - (e) the results of the monitoring;
  - (f) the interpretation of the data;
  - (g) the names of any employees who were exposed;

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- (h) the duration and frequency of the exposure;
  - (i) the estimated precision and accuracy of the data.
- (2) An employer must do all of the following with a record made under subsection (1):
- (a) provide a copy to an affected person and the committee or a representative
    - (i) if requested, but not more than once in every 24-hour period during which monitoring takes place,
    - (ii) at the earliest opportunity after the sample is analyzed, but at no time, later than ten days after the analysis is received by the employer,
  - (b) maintain it for at least 30 years from the date it was first made available to the person, committee or representative.

**Investigation and reporting**

**2.10 (1)** If the level of a hazardous chemical substance, vibration or radiation is reasonably anticipated to exceed 50 percent of its occupational exposure limit over the period of time for which the limit is set, an employer must do all of the following:

- (a) appoint a competent person to carry out an investigation;
  - (b) notify the committee or a representative, if any exists, of the proposed investigation and the name of the competent person appointed to carry out that investigation.
- (2) The investigation in subsection (1) must consider all of the following:
- (a) the chemical, biological and physical properties of the hazardous condition or substance;
  - (b) the routes of exposure of the hazardous condition or substance;

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- (c) the effects to health of exposure to the hazardous condition or substance;
  - (d) the manner in which the hazardous condition or substance is addressed;
  - (e) the control methods currently used to eliminate or reduce exposure;
  - (f) the value, percentage or level of the hazardous condition or substance to which a person is likely to be exposed and whether the value, percentage or level is likely to exceed 50% of the occupational exposure limit.
- (3) On completion of the investigation referred to in subsection (1) and after consultation with the committee or the representative, an employer must ensure that a competent person records and signs a report containing all of the following:
  - (a) their observations respecting the criteria considered in accordance with subsection (2);
  - (b) their recommendations respecting the manner of compliance with these regulations.
- (4) An employer must do all of the following with a report referred to in subsection (3):
  - (a) provide a copy to the employer and the committee or the representative;
  - (b) maintain it for a period of 30 years after the date on which the person signed the report.
- (5) An employer must, as soon as reasonably practicable, implement recommendations made pursuant to clause (3)(b) that the employer agrees are appropriate.
- (6) If an employer disagrees with one or more of the recommendations made pursuant to clause (3)(b), the employer must do all of the following:

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- (a) implement a program to control the hazardous condition or substance as may be required by these regulations;
- (b) inform the committee or the representative, with written reasons, within 30 days of receiving the report, of the employer's disagreement and the details of the program established under clause (a).

**Reviewing investigation report**

**2.11** If the investigation report in subsection 2.10(3) identifies a situation in which the level of a chemical substance, vibration or radiation is over 50% of the occupational exposure limit, the committee or the representative, if one exists, must review, at least once every two years, the investigation report recommendations and the employer's response to ensure all controls, practices and other measures recommended in the report or response are functioning adequately.

**Respiratory protection program**

- 2.12 (1)** An employer must provide and maintain a written respiratory protection program if a person is exposed to a respiratory hazard.
- (2)** The respiratory protection program in subsection (1) must address all of the following topics in the program:
- (a) program administration and responsibilities;
  - (b) hazardous condition identification and assessment, including
    - (i) a description of physical activities to be performed and the level of physical exertion for the activities, and
    - (ii) whether a person is able to perform the tasks without a risk to that person's health;
  - (c) respirator selection procedures;
  - (d) testing for a proper fit;
  - (e) training on how to use personal protective equipment and a respirator as required by subsections 6.3 and 6.10;

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- (f) cleaning, maintenance and storage of a respirator; and
  - (g) program evaluation.
- (3) An employer must consult a committee or representative, if one exists, before establishing the respiratory protection program.
  - (4) An employer must ensure that a copy of the respiratory protection program required in subsection (1) is readily available in the workplace.
  - (5) In determining the requirements for a respiratory protection program in subsection (1), the level of exposure to a hazardous substance is deemed to be the actual concentration level of the substance divided by the protection factor provided by the respirator.

**Noise**

**2.13** Except when protected in accordance with these regulations, an employer must ensure that a person is not exposed to a noise exposure level (Lex,T) greater than the levels identified as the threshold limit values for noise in the ACGIH Guide.

**Assessing exposure to sound**

- 2.14** (1) If a person is exposed, or is likely to be exposed, to a noise exposure level (Lex,T) greater than 82 dBA, an employer must ensure an assessment of the exposure, that complies with the requirements of subsection (3), is performed and recorded in accordance with the requirements of clause 2.7(b) and Section 2.8 of these regulations.
- (2) An employer must ensure a new assessment is conducted as soon as reasonably practicable but no longer than 90 days after the noise level increases if all of the following circumstances occur:
    - (a) a change is made in any process, method or procedure being used at a workplace;
    - (b) that change may result in a significant increase in the exposure to sound by a person.
  - (3) An assessment required under subsection (1) or (2) must include all of the following:

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- (a) measurement of noise exposure levels using procedures and instrumentation as described in the latest version of CSA standard Z107.56 "Measurement of noise exposure;
  - (b) a record of all personal and area monitoring as required under subsection 2.9(1);
  - (c) control measures implemented to reduce the employee's exposure to the sound.
- (4) A copy of an assessment required under this Section must be provided to all affected employees and the committee or representative, if one exists.

**Hearing surveillance program**

- 2.15** (1) An employer must establish and implement a hearing surveillance program, including the preparation of relevant health histories, audiometric tests and appropriate otoscopic examinations, if an assessment conducted pursuant to Section 2.14 discloses that a person is exposed to a noise exposure level (Lex,T) greater than 85 dBA.
- (2) A hearing surveillance program must include all of the following:
- (a) audiometric screening tests administered by a certified audiometric technician;
  - (b) a process to review and diagnose suspected cases of noise-induced hearing loss pursuant to subsection (8) by an audiologist or a medical practitioner;
  - (c) designation of a competent person to provide general supervision of the hearing surveillance program;
  - (d) provision of facilities and personnel for hearing surveillance, including audiometric testing and other relevant health examinations and clinical tests;
  - (e) maintenance of confidential health records related to the results of audiometric testing.
- (3) A hearing surveillance program must require that an audiometric

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examination be performed on all of the following persons:

- (a) a person required to wear personal hearing protection pursuant to Section 6.23;
  - (b) a person exposed to a noise exposure level (Lex,T) greater than 85 dBA.
- (4) Audiometric tests must be conducted in a facility where the octave-band sound pressure levels do not exceed those specified in the following table:

OCTAVE BAND CENTRE FREQUENCY (Hertz)	OCTAVE BAND SOUNDS PRESSURE LEVEL (Decibels)
500	30
1000	30
2000	35
4000	42
8000	45

- (5) A person assigned to work in a location that requires audiometric examination under subsection (3), must be given an audiometric examination in all of the following circumstances:
- (a) as soon as reasonably practicable, but not longer than 90 days before or after commencement of employment at that work location; and
  - (b) subject to subsection (11), on an annual basis.
- (6) The health professional conducting a hearing surveillance program must provide a copy of the results of a person's audiometric screening tests that show a change identified in subsection (8), to that person, and upon written request by the person, to a medical practitioner or organization designated by the person.



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- (7) The health professional conducting a hearing surveillance program must, upon request, provide a copy of the results of a person's audiometric screening tests that do not identify a significant change to that person, and upon written request by the person, to a medical practitioner or organization designated by the person.
- (8) A competent person must review an audiometric screening test conducted under this Section and if, in the opinion of the competent person reviewing the test, the hearing of a person has been impaired, an employer must do all of the following:
  - (a) ensure the person affected receives a health assessment as required in Section 2.25 of these regulations;
  - (b) perform a review of the hearing conservation program, and other factors contributing to the hearing loss, to determine the measures that must be taken to ensure the health and safety of people at the workplace.
- (9) The opinion of the competent person required in subsection (8) must be in writing and must be maintained in the workplace.
- (10) An employer must consult with a committee or a representative, if one exists, on the review of the hearing conservation program required in clause 8(b).
- (11) The Director may reduce the frequency of testing required to be performed to at least once every two years if an employer requests it and all of the following conditions have been met:
  - (a) hearing tests have been performed for three consecutive years;
  - (b) there is no significant change in the hearing ability of a worker.

**Hearing conservation program**

- 2.16** (1) An employer must establish and implement a hearing conservation program if an assessment conducted pursuant to Section 2.14 discloses that an employee is exposed to a noise exposure level (Lex,T) greater than 82 dBA.

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- (2) A hearing conservation program must include all of the following:
  - (a) methods and procedures to assess an employee's exposure to sound in the workplace;
  - (b) engineering controls, work practices and procedures, and personal hearing protection;
  - (c) educational programs to inform employees and supervisors of the hazards of excessive exposure to sound, the correct use of control measures and protective equipment and the conditions under which such control measures or equipment are required to be used;
  - (d) maintenance by the employer of personnel exposure records; and
  - (e) identification of, and signage in, hazardous areas.
- (3) An employer must consult a committee or a representative, if one exists, on the establishment and implementation of a hearing conservation program.
- (4) An employer must ensure a copy of the hearing conservation program is provided to all of the following:
  - (a) a competent person conducting the hearing surveillance program;
  - (b) a committee or representative, if one exists.
- (5) An employer must ensure a copy of the hearing conservation program is readily available in the workplace.

**Vibration**

- 2.17** (1) If a person is exposed, or is likely to be exposed, to vibration that may present a risk to health and safety, an employer must ensure that an assessment of the exposure is performed and recorded in accordance with the requirements of clause 2.8(b) and 2.9 of these regulations.
- (2) If an assessment determines that an employee may be exposed to excessive vibration to one or both of their arms and hands or to their whole body, an employer must comply with, and ensure compliance with, the occupational

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exposure limits for hand-arm (segmental) and whole body vibration as listed in the ACGIH Guide.

**Extreme Temperatures**

- 2.18 (1)** If work conditions may present a hazard because of extreme cold an employer must ensure all of the following:
- (a) the occupational exposure limits for protection against cold stress are complied with;
  - (b) a work-warming regimen is established and followed for working in cold temperatures, as set out in the ACGIH Guide.
- (2)** If work conditions may present a hazard because of extreme cold a competent person must do all of the following:
- (a) measure and record thermal conditions at frequent intervals and make the findings available to a committee or representative, if one exists, and on request to an officer;
  - (b) provide instructions to persons exposed to the hazardous condition of extreme cold on all of the following:
    - (i) the significance of symptoms of cold stress such as severe shivering, pain in the extremities of the body and reduced mental awareness,
    - (ii) precautions to be taken to avoid injury from cold stress.
- (3)** If a work condition may present a hazard because of excessive heat and may result in the symptoms of heat stress, an employer must ensure all of the following requirements:
- (a) the threshold limit values for protection against heat stress set out in the ACGIH Guide are complied with;
  - (b) a work/rest regime is established and followed and a cool area is provided for workers to rest;
  - (c) an adequate supply of fresh potable water is provided;

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- (d) salt is not to be used as a means of reducing heat stress.
- (4) If a work condition may present a hazard because of excessive heat, a competent person must do all of the following:
  - (a) measure and record thermal conditions at frequent intervals and make the findings available to a committee or representative, if one exists, and on request to an officer;
  - (b) provide instructions to persons exposed to the hazardous condition of extreme heat on all of the following:
    - (i) the significance of symptoms of heat stress such as sustained elevated heart rate, body core temperature greater than 38.5°C (101.3°F), recovery heart rate effort is greater than 120 bpm at one minute after peak work, sudden and severe fatigue, nausea, dizziness, or lightheadedness,
    - (ii) the precautions to be taken to avoid injury from heat stress.

**Blood borne pathogens**

- 2.19** (1) This Section applies where it is reasonably anticipated that an employee may be exposed to a bloodborne pathogen.
- (2) An employer must develop, implement and maintain a written infection control procedure that includes, but is not limited to, the identification of universal precautions, to ensure that there are adequate controls to prevent exposure to bloodborne pathogens at the workplace.
- (3) In developing, implementing and maintaining the infection control procedure identified in subsection (2), an employer must take into account all of the following that are applicable to their work and their workplace:
- (a) engineering controls and work practices to reduce exposure;
  - (b) adequate hygiene practices and facilities;
  - (c) personal protective equipment and devices;
  - (d) housekeeping procedures;

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- (e) procedures for the proper handling of laundry;
  - (f) procedures for the handling and disposal of contaminated sharps;
  - (g) adequate disposal procedures for contaminated waste;
  - (h) procedures for the evaluation and follow-up of an employee who is exposed, including the guidance provided by the latest version of Communicable Disease Control Manual published by Nova Scotia Department of Health and Wellness;
  - (i) a process for the identification of hazardous conditions relating to blood;
  - (j) procedures for the handling, storage and shipping of blood within the workplace;
  - (k) procedures for the cleaning up of spills containing blood;
  - (l) adequate record keeping;
  - (m) training of employees who may be exposed to blood.
- (4) The infection control procedure must meet all of the following requirements:
- (a) it must be produced in consultation with the committee or representative, if one exists;
  - (b) it must be maintained in the workplace and available upon request.
- (5) The infection control procedure required at subsection (2) must be reviewed in all of the following circumstances to determine if the control procedures are sufficient to prevent exposure to blood:
- (a) on an annual basis;
  - (b) if there has been an alteration in the procedures, equipment or other components of the infection control procedure.

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**Non-ionizing radiation**

**Laser radiation**

- 2.20** (1) An employer must ensure that laser beams are operated and used in accordance with the manufacturer's specifications.
- (2) An employer must ensure that ocular and skin exposure to laser beams do not exceed those set out in the ACGIH Guide.

**Infra-red radiation**

- 2.21** (1) An employer must ensure that all sources of infra-red radiation that may present a risk to health and safety are shielded as near the source as possible by heat absorbing screens, water screens or other suitable devices and must consider the recommended values set out in the ACGIH Guide.
- (2) An employer must ensure that an employee is provided with and wears properly fitting goggles, face shields or other adequate eye protective equipment when entering.
- (3) An employee must wear the eye protective equipment referred to in subsection (2) when entering an area where the employee may be subjected to infra-red radiation liable to injure or irritate the eyes.

**Ultraviolet radiation**

- 2.22** If emissions of ultraviolet radiation are in the spectral region between 180 nm and 400 nm, and may present a risk to health and safety, an employer must ensure that all of the following requirements are met:
- (a) access to areas where equipment emits ultraviolet radiation is limited to those persons directly concerned with its use;
- (b) users of such equipment are trained in the hazards and need for precautions;
- (c) warning signs or devices are used to indicate the presence of an ultraviolet radiation hazard;
- (d) protective cabinets or screens are placed around the source of emission, with observation ports made of suitable absorbent materials and may include certain grades of acrylics, polyvinyl

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chloride or window glass;

- (e) protective clothing is used by an employee as required;
- (f) eye protective equipment such as ultraviolet absorbing goggles, spectacles or face shields are used by an employee whenever there is a potential eye hazard;
- (g) exposure of an employee to ultraviolet radiation does not exceed the occupational exposure limit set out in the ACGIH Guide.

**Radiofrequency radiation**

- 2.23** (1) An employer must ensure that the installation and use of a radiation emitting device in the frequency range 3 kHz to 300 GHz conforms to the requirements of "Limits of Exposure to Radiofrequency Fields at Frequencies from 3 kHz-300 GHz, Safety Code 6", issued by the Environmental Health Directorate, Health Protection Branch and published by authority of the Minister of National Health and Welfare.
- (2) An employer must ensure that the exposure of an employee or other person to radiofrequency radiation at frequencies from 3 kHz to 300 GHz does not exceed the limits set out in the safety code referred to in subsection (1).
- (3) If a conflict exists between an exposure limit expressed in the safety code referred to in subsection (1) and the ACGIH Guide, the safety code limit will prevail.

**Ionizing radiation**

- 2.24** If ionizing radiation, including particulate radiation (alpha and beta particles emitted from radioactive material) and electromagnetic radiation (gamma rays emitted from radioactive materials and X-ray from electron accelerators and X-ray machines), may exceed the occupational exposure limits set out in the ACGIH Guide, an employer must ensure that all of the following requirements are met:
- (a) access to areas where equipment emits ionizing radiation is limited to those persons directly concerned with its use;
  - (b) users of such equipment are trained in the hazards and need for precautions;

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- (c) warning signs or devices are used to indicate the presence of the ionizing radiation hazard;
- (d) protective cabinets or screens are placed around the source of emission, with observation ports made of suitable materials;
- (e) protective clothing is used by an employee as required;
- (f) exposure of an employee to ultraviolet radiation does not exceed the occupational exposure limit set out in the ACGIH Guide.

**Health assessments**

- 2.25 (1)** A health assessment required under Section 2.15 or 6.16 of these regulations must be provided for a person exposed to a hazardous condition at all of the following times:
- (a) prior to or not greater than 90 days after commencing work in a work area where the person is exposed; and
  - (b) unless otherwise noted, at least once every three years.
- (2)** A health assessment required in subsection (1) must include one or all of the following, as appropriate in the circumstances:
- (a) a physical examination of the specific body parts affected by the hazardous condition;
  - (b) specific diagnostic tests for the diagnoses of diseases and illnesses related to the condition;
  - (c) other procedures that are required to diagnose illnesses and diseases related to the hazardous condition.
- (3)** An employer must ensure a description of a person's exposure to a hazardous condition is provided to the health professional who performs the health assessment required under subsection (1).
- (4)** An employer must incur the cost of a health assessment required by these regulations.



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- (5) The time required to attend a health assessment is deemed to be work time and an employer must pay the person undergoing the health assessment accordingly.

**Part 4: First Aid**

*[Note: The stand-alone Occupational Health and Safety First Aid Regulations will be repealed and replaced with Part 4 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 4**

**4.1** In this Part,

"advanced first aid certificate" means a document issued by an approved organization certifying that a person has successfully completed a first aid course consisting of at least 35 hours of instruction;

"approved organization" means an organization approved to deliver courses in first aid under subsection 4.3(4);

"barrier equipment" means items that prevent the transfer of infectious substances between the wearer of the equipment and another person;

"emergency care facility" means a health care facility that

- (i) is equipped to provide immediate treatment of injuries and illnesses, and
- (ii) has a medical practitioner on call;

"emergency first aid certificate" means a document issued by an approved organization certifying that a person has successfully completed a first aid course consisting of at least 6.5 hours of instruction;

"first aid attendant" means an employed person who is the holder in good standing of an emergency first aid certificate, a standard first aid certificate or an advanced first aid certificate;

"first aid room" means a room at a work area that is used exclusively for the purposes of administering first aid;

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"full time" means an average of 30 hours or more of work in a week averaged over a 4 week period;

"hospital" means

- (i) a hospital as defined in the *Hospitals Act* that provides emergency services during all hours of operation, or
- (ii) an emergency care facility;

"kit" means a container holding first aid supplies;

"medical practitioner" means a person qualified to practice medicine under the *Medical Act*;

"mobile" means normally based in a motor vehicle;

"remote location" means a place requiring more than 30 minutes of surface travel time in one direction from an emergency care facility that is open during the working hours of a work area;

"regularly" for the purposes of this Part of these regulations, means exceeds 25% of the employees normal working time and has a different meaning than "regularly employed";

"standard first aid certificate" means a certification of successful completion of a first aid course issued by an approved organization that consists of at least 13 hours of instruction;

"surface travel time" means the time required to transport an injured employee on a stretcher from the place where they are injured to an emergency care facility by land or water.

**First aid supplies, services and attendants**

**4.2 (1)** An employer must do all of the following:

- (a) at the employer's expense, provide and maintain at each of the employer's work areas, the first aid supplies, services and designated first aid attendants required by these regulations;

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- (b) pay the cost of a first aid course for an employee for the purpose of the employee acting as a designated first aid attendant or as required by section 4.3 of this part;
  - (c) pay an employee who is taking a first aid course for the purpose of acting as a designated first aid attendant or holding a first aid certificate as required by Section 4.3, the same wages and benefits that they would receive in the ordinary course of their employment.
- (2) Despite subsection (1), 2 or more employers may enter into a written agreement to collectively provide and maintain at each of their work areas the first aid supplies, services and designated first aid attendants required under these regulations, in which case a copy of the agreement must be kept and made available at each work area covered by the agreement.
- (3) It is the duty of each person at a work area to do all of the following without undue delay:
  - (a) use the first aid supplies and services provided at a work area as needed; and
  - (b) report all injuries to the employer.

**First aid certification**

- 4.3**
- (1) If a full time employee is employed in any type of employment that regularly requires the employee to work where there is no one available who could administer first aid or summon assistance within a reasonable length of time, an employer must ensure that the employee holds a valid emergency first aid certificate.
  - (2) If a work area is an office and the office is not part of a larger work area where activities other than office-related activities are carried out, an employer must ensure that at least one employee on each shift holds a valid emergency first aid certificate.
  - (3) If a work area is not an office, an employer must ensure all of the following:
    - (a) where there are more than one but fewer than 20 employees regularly employed on any one shift, that at least one employee on

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that shift holds a valid emergency first aid certificate;

- (b) where there are 20 or more, but fewer than 100 employees regularly employed on any one shift, that at least one employee on that shift holds a valid standard first aid certificate; and
- (c) where there are 100 or more employees regularly employed on any one shift, that at least one employee on that shift holds a valid advanced first aid certificate.

(4) For the purposes of these regulations, the following organizations are approved to issue certificates and deliver courses in first aid:

- (a) St. John Ambulance;
- (b) Canadian Lifesaving Society;
- (c) Canadian Red Cross;
- (d) Canadian Heart and Stroke Foundation;
- (e) Canadian Ski Patrol;
- (f) any other organization authorized by another Canadian jurisdiction to deliver first aid training.

(5) Unless the organization providing first aid certification establishes a shorter period, a certificate will expire 3 years after the date of certification.

(6) An employer that is a hospital or other emergency care facility may substitute a person who is a trained medical professional who maintains current training in cardio-pulmonary resuscitation (CPR) for the required first aid certificate for an attendant provided an employer ensures all of the following:

- (a) the committee or representative, if one exists, have been consulted and agree in writing to this substitution;
- (b) the person is designated; and

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- (c) the person is available to carry out the duties of a first aid attendant as indicated in Section 4.9.

**Determining number of employees**

- 4.4** All persons employed on any one shift, including full-time, part-time and casual employees, must be included in determining the total number of employees employed on that shift for the purposes of subsection 4.3(3).

**Vehicles, boats and aircrafts**

- 4.5** (1) Subject to subsection (2), the first aid supplies and services required on any vehicle, boat, powered mobile equipment or aircraft that is regularly used to transport employees must be determined on the basis of the maximum seating capacity of the vehicle, boat, powered mobile equipment or aircraft.
- (2) If a vehicle, boat, powered mobile equipment or aircraft is regularly used to transport only the driver of that vehicle, boat, powered mobile equipment or aircraft, the employer of the driver must ensure that the vehicle, boat, powered mobile equipment or aircraft has at least a Number 1 First Aid Kit.

**Creating and maintaining records**

- 4.6** If a first aid attendant administers first aid to an injured person at a work area, the employer of the injured person must, with respect to that person, maintain a written record for 5 years after the date of injury including all of the following:
- (a) the name of the injured person;
  - (b) the date and time of the injury;
  - (c) the location and nature of the injuries on the person's body;
  - (d) the time when first aid was administered;
  - (e) the first aid treatment provided;
  - (f) the name of the person who provided the first aid; and
  - (g) the name of the person to whom the injury was reported.

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**Supplies and contact information for attendant to be accessible**

- 4.7** (1) An employer must ensure that first aid services and supplies meet all of the following requirements:
- (a) accessible during all working hours;
  - (b) located throughout a work area unless required to be in a first aid room;
  - (c) when more than one first aid kit is required, they must be located throughout a work area so as to allow quick access in the event of a medical emergency.
- (2) To the extent reasonably practicable, the location of first aid supplies and the location or phone number of the first aid attendant must be posted throughout a work area on signs that can easily be seen by all persons in a work area.

**Condition of supplies**

- 4.8** An employer must ensure that first aid supplies meet all of the following conditions:
- (a) kept clean and dry;
  - (b) checked regularly for quantity and expiry;
  - (c) maintained so as to meet the requirements of these regulations;  
and
  - (d) kept in a visible and accessible location.

**Duties of first aid attendant**

- 4.9** A first aid attendant must do all of the following:
- (a) at all times maintain reasonable access to a first aid kit and, where a first aid room is required by these regulations, to the first aid room;
  - (b) have general control and supervision of a first aid kit and, where required, the first aid room;

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- (c) be available at all times during their shift to treat an injured employee without undue delay;
- (d) use barrier equipment where necessary, to guard against exposure to an infectious condition; and
- (e) keep their first aid certificate at the work area and available for display on request of an officer.

**Transportation**

- 4.10 (1)** If an injured person must be transported to a hospital or other emergency care facility, the employer and, in the case of a project, the constructor, is responsible for providing and paying for a safe and timely means of transport.
- (2)** Where an injured person is being transported to a hospital or other emergency care facility and may require the assistance of another person, at least one person, in addition to the driver or operator of the vehicle, boat or aircraft must be permitted to accompany the injured person.

**First Aid Kit #1**

- 4.11 (1)** If there is only one employee regularly employed at a work area, an employer must provide a Number 1 First Aid Kit as a minimum.
- (2)** A Number 1 First Aid Kit must include
- (a) 1 first aid guide;
  - (b) 1 first aid record book, or instructions on how first aid treatment records are to be maintained;
  - (c) 1 pencil;
  - (d) 6 safety pins;
  - (e) 1 splinter tweezers;
  - (f) 1 pair of 100 mm scissors;
  - (g) 2 pairs of disposable latex gloves or gloves made of material that

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provides an equivalent level of protection against the spread of infections or contagious conditions;

- (h) all of the following individually wrapped dressings:
  - (i) 2 sterile bandage compresses (100 mm X 100 mm),
  - (ii) 12 sterile adhesive dressings (25 mm wide),
  - (iii) 12 sterile pads (75 mm X 75 mm),
  - (iv) 3 triangular bandages (1 m), and
  - (v) 1 Roller Bandage (50 mm wide),
- (i) one roll of adhesive tape (25 mm wide by 2.5 m long);
- (j) one marked plastic bag for the disposal of biohazardous waste;
- (k) one airway barrier device for rescue breathing; and
- (l) at least the following antiseptics:
  - (i) disinfectant in the form of
    - (A) a 100 ml bottle of an adequate antiseptic, or
    - (B) 12 individually wrapped towelettes with an adequate antiseptic, and
  - (ii) 6 hand cleaners.

**First Aid Kit #2**

- 4.12 (1)** If there are more than one and fewer than 20 employees regularly employed on any one shift at a work area, an employer must provide a Number 2 First Aid Kit.
- (2)** Except as set out in subsection (4), where there are 20 or more employees regularly employed on any one shift at a work area, an employer must do all of the following:



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- (a) provide at least one Number 2 First Aid Kit for every multiple of 20 employees;
  - (b) ensure that a second kit and subsequent kits are located throughout the workplace to facilitate quick access in the event of medical emergency.
- (3) A Number 2 First Aid Kit must contain:
- (a) 1 first aid guide;
  - (b) 1 first aid record book, or instructions on how first aid treatment records are to be maintained;
  - (c) 1 pencil;
  - (d) 12 safety pins;
  - (e) 1 splinter tweezers;
  - (f) 1 pair of 100 mm scissors;
  - (g) 2 pairs of disposable latex gloves or gloves made of material that provides an equivalent level of protection against the spread of infections or contagious conditions;
  - (h) all of the following individually wrapped dressings:
    - (i) 2 sterile bandage compresses (100 mm X 100 mm),
    - (ii) 24 sterile adhesive dressings (25 mm wide),
    - (iii) 16 sterile pads (75 mm X 75 mm),
    - (iv) 6 triangular bandages (1 m), and
    - (v) 2 roller bandages (50 mm wide);
  - (i) one roll of adhesive tape (25 mm wide by 2.5 m long);

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- (j) all of the following antiseptics:
    - (i) disinfectant in the form of
      - (A) a 100 ml bottle of an adequate antiseptic, or
      - (B) 12 individually wrapped towellettes with an adequate antiseptic, and
    - (ii) 24 hand cleaners;
  - (k) one marked plastic bag for disposal of biohazardous waste; and
  - (l) one airway barrier device for rescue breathing.
- (4) An employer who has a Number 3 First Aid Kit in accordance with the former regulations on the date these regulations take effect is not required to replace it with a Number 2 First Aid Kit and it will be deemed to be a Number 2 First Aid Kit for the purposes of these regulations.

**First aid rooms**

- 4.13** (1) If a work area is not an office and there are 100 or more employees regularly employed on any one shift in a work area, an employer must provide at least one first aid room or other approved first aid facility.
- (2) A first aid room must meet all of the following criteria:
- (a) be of sufficient size to accommodate the supplies and services required by these regulations and have an entrance that can easily accommodate a stretcher;
  - (b) be kept clean, well-lighted, heated, ventilated and in a sanitary condition;
  - (c) contain a telephone or other means of communication between the first aid room and work area areas served by the first aid room;
  - (d) have emergency telephone numbers posted;
  - (e) include all of the following furniture:

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- (i) 1 permanent sink with hot and cold running water,
- (ii) 1 refuse pail with a cover,
- (iii) 1 chair with arm rests that ensure that the chair is suitable to treat injured employees,
- (iv) 1 bed, covered with a plastic sheet,
- (v) pillows and blankets,
- (vi) 1 cabinet suitable for storing dressings and instruments;
- (f) contain all of the following material, equipment and supplies:
  - (i) 1 first aid guide,
  - (ii) 1 pair of 150 mm heavy-duty scissors,
  - (iii) 1 splinter tweezers,
  - (iv) 12 assorted safety pins,
  - (v) 1 wash basin made of stainless steel or polypropylene,
  - (vi) 1 nail brush,
  - (vii) 1 package of paper towels,
  - (viii) hand soap,
  - (ix) 1 package of disposable paper cups,
  - (x) 1 cold sterilizer with a supply of non-rusting germicidal solution or a means of sterilization that provides an equivalent level of protection,
  - (xi) 1 kidney basin made of stainless steel or polypropylene,

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- (xii) 1 set of assorted x-ray permeable splints,
- (xiii) 1 back board,
- (xiv) 1 adjustable cervical collar or set of different sized cervical collars,
- (xv) 1 stretcher,
- (xvi) 1 portable Number 2 First Aid Kit and a flashlight for use outside the room at the scene of an accident,
- (xvii) 20 additional pairs of disposable latex gloves or gloves made of material that provides an equivalent level of protection against the spread of infections or contagious conditions,
- (xviii) 1 first aid record book, or instructions on how first aid treatment records are to be maintained,
- (xix) 1 pencil,
- (xx) two rolls of adhesive tape (25 mm wide by 2.5 m long),
- (xxi) antiseptics, including
  - (i) a disinfectant in the form of
    - (A) a 100 ml bottle of an adequate antiseptic, and
    - (B) 12 individually wrapped towelettes with an adequate antiseptic, and
  - (ii) 36 hand cleaners,
- (xxii) one marked plastic bag for disposal of biohazardous waste,
- (xxiii) one airway barrier device for rescue breathing, and

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- (xxiv) one magnifying lamp;
- (g) at least the following dressings, individually wrapped:
  - (i) 6 sterile bandage compresses (100 mm X 100 mm),
  - (ii) 48 sterile adhesive dressings (25 mm wide),
  - (iii) 32 sterile pads (75 mm X 75 mm),
  - (iv) 6 triangular bandages (1 m),
  - (v) 3 roller bandages (50 mm wide),
  - (vi) 1 roll of tubular finger bandages with applicator,
  - (vii) 10 finger tip dressings,
  - (viii) 10 knuckle pad dressings,
  - (ix) 4 sterile abdominal bandages (200 mm X 300 mm).

**Remote location plans**

- 4.14 (1)** If a work area or work areas are in a remote location or locations, the employer, or where a work area or work areas are part of a project, the constructor, must maintain a written first aid remote location plan that does all of the following:
- (a) sets out a comprehensive plan for ensuring compliance with at least the minimum standards prescribed by these regulations at each remote location; and
  - (b) without limiting clause (a), specifies
    - (i) the method of transportation of injured employees from remote locations,
    - (ii) the means of communication with and from remote locations,

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- (iii) the number of first aid attendants required at remote locations and their qualifications, and
  - (iv) the list of supplies to be included in each first aid facility.
- (2) A first aid remote location plan must
  - (a) be complied with by all persons at the remote location; and
  - (b) reflect the nature of the work being performed at each remote location.
- (3) A committee or representative, if one exists, must be consulted in the development of the first aid remote location plan.
- (4) Despite subsection (1), where an employer has employees at a remote location and no employee spends more than 10% of their time measured over a 4 week period at that remote location, the employer is not required to have a first aid remote location plan.
- (5) If an employer has employees at a remote location and any of the employees spend more than 10% but less than 25% of their time, measured over a 4-week period, at that remote location, the employer is not required to have a written first aid remote location plan provided the safety of the remote location is adequately assured having regard to all of the following factors:
  - (a) an injured person can be transported from the remote location to the closest emergency care facility within a reasonable time;
  - (b) there is a means of transport at the remote location for an injured worker;
  - (c) a means of summoning assistance is available at the remote location;
  - (d) there are first aid facilities available at the remote location;
  - (e) there are an appropriate number of first aid attendants at the remote location; and

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- (f) the risks or hazards of the job and likelihood of injury on the job are such that safety can be adequately assured.
- (6) Despite Section 4.3, where fewer than 20 employees are employed at a work area in a remote location, at least one person at the work area must hold a standard first aid certificate or at least 30% of the employees at the work area must hold emergency first aid certificates.

**Hospitals and other emergency care facilities**

**4.15** An employer that is a hospital or another emergency care facility is not required to comply with Sections 4.3, 4.9, 4.11, 4.12, and 4.13 if first aid supplies and services equivalent to those required by these regulations are provided to an employee in the hospital or another emergency care facility.

**Part 5: Sanitation and Accommodation**

*[Note: Sanitation and Accommodation is currently addressed in Part 4 of the Occupational Safety General Regulations. That Part will be deleted from those regulations and added as Part 5 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 5**

**5.1** In this Part,

"Heavy physical work" means work that requires intense arm and trunk work such as carrying, shoveling, manual sawing, pushing or pulling heavy loads or sustained walking at a fast pace;

"Light work" means work that is normally associated with general office duties or driving;

"Light physical work" means work that requires some minor exertion of the hands or arms, normally while sitting or standing;

"Moderate physical work" means sustained hand, arm or leg work and may involve light pushing, pulling or walking.

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**Ventilation**

**Application of ventilation sections**

**5.2 (1)** Sections 5.3 through 5.8 apply in all of the following circumstances:

- (a) a chemical or biological substance exists;
- (b) the level of oxygen in the atmosphere is
  - (i) less than 19.5 percent by volume; or
  - (ii) greater than 24 percent by volume.
- (2) Sections 5.3 through 5.8 do not apply to the ventilation in the underground portion of a mine.

**Ventilation system required**

**5.3 (1)** An employer must do all of the following:

- (a) provide for a supply of fresh air into, and the removal of air from, a workplace or part of the workplace that is, so far as is reasonably practicable, adequate to
  - (i) keep the air reasonably pure, and
  - (ii) render harmless all gases, vapours, dust or other impurities that are likely to endanger the health or safety of any person exposed to them;
- (b) where a process is carried on in a workplace that produces a gas, vapour, dust or other impurity that is likely to be inhaled to an injurious extent by a person in the workplace, provide and use a ventilation system that is capable of doing all of the following:
  - (i) preventing such inhalation so far as is reasonably practicable,
  - (ii) effectively carrying off and disposing of the impurity, and
  - (iii) preventing the recirculation and re-entry into the workplace



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of air containing the impurity;

- (c) ensure that a ventilation system used for controlling the dissemination of gases, vapours, dust or other impurities, including their collection systems and emptying processes, meet at least 1 of the following:
  - (i) it is installed, operated, maintained and otherwise used in accordance with the manufacturer's specifications;
  - (ii) it is designed by a competent person and operated, installed, maintained and otherwise used in accordance with the design.
- (2) Where an exhaust system is installed, an adequate supply of tempered make-up air must be provided that does not include the opening of windows and doors.
- (3) Material or equipment that will affect the efficiency of a ventilation system must not be piled or stored in front of a ventilation opening.
- (4) Where an operation or work process produces combustible or flammable dusts, vapours, smoke, fumes, or gases in concentrations that may exceed the lower explosive limit of that substance, the operation or work process must be provided with an appropriate separate exhaust ventilation system.

**Ventilation required for control of exposure to hazardous substances**

- 5.4** (1) In determining whether the ventilation system is adequate protection for the purposes of subsection 5.3(1)(b), the employer must consider all of the following:
- (a) occupational exposure limits prescribed in Part 2: Occupational Health;
  - (b) physical, chemical and toxicological properties of the contaminants;
  - (c) flammability and explosive nature of the contaminants;
  - (d) sources and concentrations of the contaminants;

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- (e) location of people relative to the sources of contamination;
  - (f) oxygen content of the air;
  - (g) duration of the exposure of persons at the workplace.
- (2) An employer must take all of the following into account during the planning, development, installation, maintenance and use of a ventilation system:
- (a) physical state of the hazardous substance;
  - (b) nature of the processes generating the substances;
  - (c) location of the system with respect to sources of hazardous substances and dispersion patterns of those substances;
  - (d) air velocity required to capture the hazardous substances;
  - (e) all system pressure losses, including hood entry and duct losses;
  - (f) duct transport velocities required to prevent the accumulation of hazardous substances in the system;
  - (g) location of exhaust portals and air supply portals in relation to one another and in relation to other workplaces;
  - (h) need for the cleansing of supply air
  - (i) need for the cleansing of discharged air to ensure the health and safety of people at or near the workplace;
  - (j) need for an explosion-proof system.
- (3) Where a ventilation system is used for the control of a hazardous substance or to eliminate an oxygen deficiency or excess an employer must ensure all of the following:
- (a) the ventilation system is maintained in good working order;

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- (b) a person using the ventilation system is trained in its proper use;
  - (c) the ventilation system must be equipped with a device which will provide a warning when the system is not working effectively;
  - (d) the ventilation system must remain operating until the hazardous substance or oxygen deficiency or excess has been removed from the workplace.
- (4) An employer must produce a written report, detailing how the design features specified in subsection (1) were taken into account, and the report must be provided to the committee or the representative, if one exists, for every ventilation system that meets all of the following criteria:
  - (a) it is designed after the coming in force of these regulations, and
  - (b) it is installed or altered in response to a hazardous substance being present at a level greater than 50% of the occupational exposure limit.
- (5) Where there is a change in a work process, operation, machinery or equipment, an employer must ensure that a ventilation system is modified as required to maintain the concentration of any hazardous substance below the level prescribed in Part 2: Occupational Health.
- (6) Despite subsection (5), where a ventilation system is a recirculating air system under subsection (1) an employer must ensure all of the following:
  - (a) the concentration of hazardous substances in the recirculating system must not exceed 10% of their occupational exposure limit as prescribed in Part 2: Occupational Health;
  - (b) the air from the recirculating system must not be discharged into a work area in such a manner as to increase the exposure level within that area by more than 10% of the concentration of those hazardous substances normally prevailing when the system is not recirculated;
  - (c) the air is heated, when necessary, to maintain the temperatures within the range specified in 5.11(3);

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- (d) the air is properly distributed so as not to cause undue drafts or disturbance; and
- (e) the air must be re-circulated to the same work area from which the air had been removed.

**Local ventilation**

- 5.5** (1) An employer must ensure that, whenever reasonably practicable, an effective local exhaust system is used to control a hazardous substance.
- (2) Notwithstanding subsection (1), where it is not reasonably practicable to provide local exhaust ventilation, it is permissible to use a general ventilation system, or a combination of the two systems.
- (3) A local exhaust ventilation system must be designed so that, under normal work procedures, a person is not located between the source of contamination and the exhaust intake.
- (4) A ventilation system must be designed so that contaminated exhaust air is exhausted of any work area and is prevented from entering or re-entering any work area.

**Ventilation required for combustion engines**

- 5.6** (1) An employer must ensure that an internal combustion engine used in an enclosed work area meets all of the following requirements:
- (a) it is regularly and properly serviced and maintained;
  - (b) it is equipped with adequate precautions for the control of exhaust.
- (2) Except as set out in subsection (3), an internal combustion engine that is part of a generator in an enclosed workplace and that does not meet the requirements of subsection (1), must be partitioned off from the workplace to prevent any emissions from entering the air of the workplace.
- (3) Subsection (2) does not apply to an internal combustion engine of a generator if all of the following conditions are met:
- (a) the generator is being tested or repaired and arrangements are made to temporarily exhaust the emissions from the work area;

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- (b) CO monitoring of the work area is conducted to ensure that exposure limits are not exceeded.

**Fume hoods**

**5.7 (1)** Except as set out in subsection (2), an employer must ensure a fume hood meets all of the following conditions:

- (a) it is exhausted directly out of the workplace;
- (b) it provides an air velocity over any part of the maximum operational face area of the hood at an average of 0.5 metres per second (100 feet per minute);
- (c) a measurement must not be less than 0.4 meters per second (80 feet per minute).

**(2)** An employer must ensure that a fume hood used for carcinogenic substances, nuclear substance or hazardous biological substances, meets all of the following requirements:

- (a) it is exhausted directly out of the workplace; and
- (b) it provides an air velocity at an average of 0.75 metres per second (150 feet per minute), and
- (c) a measurement must not be less than 0.63 meters per second (125 feet per minute) at any point across the face.

**(3)** To ensure compliance with subsections (1) and (2) an employer must do at least one of the following:

- (a) test a fume hood before changing the sash height to ensure the velocity required is provided;
- (b) take measures to prevent the opening of the sash beyond a level that ensures the required velocity.

**(4)** An employer must not connect a fume hood to a common exhaust duct in any of the following circumstances:

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- (a) there is danger of an explosive reaction occurring in the duct;
  - (b) a carcinogenic substance, nuclear substance, hazardous biological substance, sensitizer or reproductive hazard is used in the hood; or
  - (c) there is a danger of a back draft which can result in contaminants from one fume hood being discharged into the workplace from another fume hood.
- (5) An employer must ensure all controls for the operation of the fume hood and its services must be located outside the fume hood and immediately accessible to the operator.

**Perchloric Acid**

**5.8 (1)** An employer must do all of the following when handling perchloric acid:

- (a) establish a safe work procedure and ensure it is followed;
  - (b) ensure that a fume hood is used and specifically designed for this purpose.
- (2) An employer must ensure the fume hood required in subsection (1) meets all of the following requirements:
- (a) it has exhaust ducts that
    - (i) are as short as possible, and
    - (ii) are routed directly out of the workplace, with no interconnections with other exhaust ducts;
  - (b) it has at least one sign posted on the exterior of the hood that identifies the hazardous condition and prohibits the exposure of the perchloric acid to combustible substances;
  - (c) it is provided with wash down facilities for the hood and the exhaust ducts to ensure that excess perchloric acid is removed from the hood and ducts; and
  - (d) it is provided with adequate electrical protection to avoid ignition

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of potential explosive mixtures resulting from interactions with perchloric acid.

**Lighting**

**Lighting requirements**

- 5.9 (1)** An employer must provide lighting adequate for the type of work being done, considering all of the following factors:
- (a) the quantity of illumination;
  - (b) the quality of illumination, including reflectance, direct glare and reflected glare.
- (2)** An employer must ensure the lighting at their workplace complies with the latest version of the applicable standard below:
- (a) ANSI standard ANSI/IESNA RP-7, " Lighting Industrial Facilities";
  - (b) ANSI standard ANSI/IESNA RP3, "Guide for Educational Facilities Lighting ";
  - (c) ANSI standard ANSI/IESNA RP-1, " American National Standard Practice for Office Lighting ".

**Emergency lighting**

- 5.10** An employer must ensure emergency lighting is provided when failure of the normal lighting system is likely to constitute a hazardous condition to a person in the workplace.

**Temperature**

- 5.11 (1)** Subject to subsection (2), all of the following minimum temperatures of an enclosed workplace must be maintained when performing the type of work identified:
- (a) for light work performed while sitting, a minimum temperature of 20°C;
  - (b) for light physical work performed while sitting, a minimum

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temperature of 18°C;

- (c) for light or moderate physical work performed while standing, a minimum temperature of 16°C;
- (d) heavy physical work is performed while standing the minimum temperature required is 12°C.

(2) The minimum temperature required by section (1) does not apply at a workplace in any of the following circumstances:

- (a) it is normally unheated;
- (b) the necessity of opening doors makes the heating of the area to the temperature specified in section (1) not reasonably practicable;
- (c) perishable goods requiring lower temperatures are processed or stored;
- (d) radiant heating is such that an employee working in the area has the degree of comfort that would result were the area heated to the same temperature specified in (1); or
- (e) the process or activity is such that the temperature specified in subsection (1) could cause discomfort.

(3) Where risk of heat stress is present, an employer must make arrangements to monitor and control the adverse effects of metabolic heat and environmental factors such as air temperature, humidity, air movement, radiant heat and clothing to avoid the onset of heat strain in accordance with Part 2: Occupational Health.

(4) Where the requirements of subsection (1) and (3) are not met an employer must provide all of the following:

- (a) a suitable place where the employee may go to get warmed;
- (b) personal protective equipment, as required by Part 6.



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**Drinking water**

- 5.12 (1)** An employer must, where reasonably practicable, make accessible sufficient potable water for drinking and hand-cleaning that meets all of the following requirements:
- (a) it is close enough to the work area that neither drinking nor washing is inhibited;
  - (b) it is no further away than 200 m from the work place; and
  - (c) it meets the standards set out in the latest version of the Guidelines for Canadian Drinking Water Quality published by the federal Department of Health.
- (2)** Where drinking water is not taken directly from a water pipe, an employer must ensure that it is kept in a container that is covered in an adequate manner and, if used by more than one person, that the container is equipped with a faucet.
- (3)** An employer must, where reasonably practicable, make accessible individual sanitary drinking vessels or cups to be used with drinking water, except where the drinking water is delivered in an upward jet from which a person may drink.
- (4)** Where outlets exist for both drinking water and water not suitable for drinking, an employer must appropriately and clearly label the outlets.

**Toilets**

- 5.13 (1)** An employer must make accessible a minimum number of toilets for each gender, determined according to the maximum number of persons of each gender who are normally employed at any one time at the same workplace, as follows:
- (a) where the number of persons does not exceed 9, 1 toilet;
  - (b) where the number of persons exceeds 9 but does not exceed 24, 2 toilets;
  - (c) where the number of persons exceeds 24 but does not exceed 49, 3 toilets;

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- (d) where the number of persons exceeds 49 but does not exceed 74, 4 toilets;
  - (e) where the number of persons exceeds 74 but does not exceed 100, 5 toilets; and
  - (f) where the number of persons exceeds 100, 5 toilets and 1 toilet for every 30 such persons in excess of 100.
- (2) Despite subsection (1), an employer must do all of the following:
- (a) make appropriate consideration for handicapped employees and employees of the LGBTI community, if applicable;
  - (b) where a workplace, such as a motor vehicle or an isolated small temporary workplace such as a logging operation or a survey site, does not have running water or sewage facilities, ensure that the toilets required in subsection (1) are accessible where it is reasonably practicable.
- (3) Despite subsection (1), an employer may do any of the following:
- (a) where the total number of persons normally employed in the workplace at any one time does not exceed 9, provide 1 toilet for both male and female persons if the toilet is situated in a room with an entrance door that is fitted on the inside with a locking device;
  - (b) where more than 2 toilets are required for male employees, substitute urinals for up to 2/3 of the required number of toilets.
- (4) An employer shall ensure that toilets are of the water flush, chemical, self-contained portable or other similar types of toilets.
- (5) An employer shall ensure that a toilet facility required by these regulations meets all of the following requirements:
- (a) it is within easy access of a person's workplace;
  - (b) it is enclosed so that a person is sheltered from view and protected from the natural elements;

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- (c) it is adequately ventilated and illuminated;
  - (d) it is heated, where reasonably practicable;
  - (e) it is kept in a clean and sanitary condition;
  - (f) it is provided with a sufficient supply of toilet paper;
  - (g) it is provided with a waste receptacle;
  - (h) it is maintained in working condition;
  - (i) in the case of a self-contained unit, it is emptied and serviced at intervals to ensure that the unit does not overflow.
- (6) An employer must ensure that an employee has reasonable opportunities to use the toilet facilities.

**Hand-cleaning facilities**

- 5.14** (1) Where the workplace has running water, an employer must provide a wash basin or equivalent hand-cleaning facility in a room with 1 toilet and sufficient additional wash basins or equivalent hand-cleaning facilities in the room for additional toilets or urinals.
- (2) Where the workplace does not have running water and toilet facilities are provided, an employer must provide hand-cleaning facilities or supplies.
- (3) An employer must provide a hand-cleaning facility and supplies as close to any toilet as is reasonably practicable.
- (4) Where a person works in an area that is exposed to a hazardous substance that may contaminate food, an employer must provide the person with the opportunity, facilities and supplies for hand cleaning.
- (5) Where a wash basin is provided, an employer must provide all of the following:
- (a) hot and cold running water;
  - (b) liquid soap or other appropriate cleansers;

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- (c) sufficient sanitary hand-drying facilities.

**Eating areas**

- 5.15 (1)** Where the possibility of contamination of food from a hazardous substance exists in a work area, an employer must provide an enclosed eating area separate from the work area.
- (2)** The eating area referred to in subsection (1) must meet all of the following conditions:
- (a) kept in a sanitary condition;
  - (b) adequately provided with
    - (i) light, heat and ventilation,
    - (ii) tables and seating sufficient for the number of persons who use the eating area at any one time, and
    - (iii) garbage receptacles.
  - (3)** No person shall store food or drink in an area where the food or drink may be contaminated by a hazardous substance

**Work clothes and change rooms**

- 5.16 (1)** Where the nature of a person's work makes it necessary for the person to change out of street clothes and into work clothes to protect the person's health or safety, an employer must provide a changing room and storage for the person's street clothes and work clothes that will prevent the clothes from becoming wet or dirty.
- (2)** Where a person's work clothes are liable to be contaminated so that the health or safety of a person may be adversely affected by exposure to the clothes when contaminated, an employer must provide all of the following:
- (a) work clothes for the person's use;
  - (b) storage for the person's street clothes and work clothes that will

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prevent the street clothes from becoming wet, dirty or contaminated;

- (c) a changing room;
- (d) for work clothes to be cleaned as necessary.

(3) Where an employee's skin may be contaminated by a hazardous substance, an employer must provide a shower facility if it is reasonably practicable.

(4) For the purposes of subsection (3), the employer must provide a shower facility that includes all of the following:

- (a) a number of showers for each gender determined according to the maximum number of persons of each gender who are normally employed at the same workplace and who are exposed as described in subsection (3) at any one time as follows:
  - (i) where the number of employees does not exceed 10, 1 shower,
  - (ii) an additional shower for each unit of 10 additional employees of each gender; and
  - (iii) consideration must be made for handicapped employees or employees of the LGBTI community at the workplace.
- (b) a sufficient water supply that can be manually adjusted to come within a range of 35°C and 45°C;
- (c) sufficient soap and towels.

**Emergency showers and eyewashes**

**5.17 (1)** Where a person's skin or eyes may be acutely affected by an exposure to a caustic, acidic or other hazardous substance, an employer must provide at least one (1) of the following forms of protection in the work area where the exposure may occur:

- (a) an emergency shower;

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- (b) an eye wash fountain;
  - (c) enough flushing fluid to last at least 15 minutes;
  - (d) other equipment sufficient for removal of the substance.
- (2) The form of protection provided under subsection (1) must be appropriate to the potential hazard and meet all of the following requirements:
- (a) it must comply with the requirements of the latest version of ANSI standard ANSI/ISEA Z358.1, "American Standard for Emergency and Shower Equipment", where applicable;
  - (b) it must be installed, operated, inspected and maintained in accordance with the manufacturer's instructions;
  - (c) it must be located so that there is an unobstructed path to the equipment and the user can access the equipment within 10 seconds of exposure;
  - (d) it must provide sufficient flushing fluid at sufficient pressure for the greater of
    - (i) 15 minutes, and
    - (ii) the time indicated on the MSDS sheet;
  - (e) it must have the instructions for use and an expiration date permanently affixed to the unit.
- (3) Where emergency eyewash or showers are not practicable due to the remote nature of the work or the lack of available facilities to ensure the equipment can meet the requirements of subsection (2), an employer must ensure that the employee is informed and trained in the first aid measures that may be used to minimize the risk of harm.

**Waste material and debris**

**5.18** An employer must ensure that, on a regular basis, waste material and debris are

- (a) collected or positioned so as to prevent a hazard; and

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- (b) removed from a workplace to a suitable disposal area.

**Fire protection and escape**

- 5.19** (1) An employer must ensure that adequate fire protection is provided in the workplace.
- (2) An employer must ensure that the annual inspection of fire protection equipment is conducted by a person certified by the manufacturer to conduct the inspection and make any repairs required.
  - (3) In addition to any requirements that may be imposed by the manufacturer's specifications under subsection (2) respecting fire extinguishers, an employer must ensure that all fire extinguishers are inspected annually.
  - (4) In determining the type and quantity of fire protection required in subsection (1), an employer must consider all of the following:
    - (a) where the workplace is an occupied or enclosed structure, the requirements of the National Fire Code, as adopted and modified under the *Fire Safety Act* and the *Fire Safety Regulations* made under that Act;
    - (b) where the workplace is a project, the requirements of the National Building Code of Canada, as adopted and modified under the *Building Code Act* and the *Nova Scotia Building Code Regulations* made under that Act.
  - (5) Subject to any requirements in the legislation, regulations or codes referred to in subsection (3), unless each person present in the workplace has suitable keys to all doors that are required to be open to exit the premises, no person shall lock, bolt or bar a door while a person is present in the workplace, if doing so would prevent a person from exiting a work area.
  - (6) The requirements of subsection (5) do not apply to a room in which a legally restrained person is located and other means of protection from fire are provided.

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**Part 6: Personal Protective Equipment**

*[Note: Personal Protective Equipment is currently addressed in Part 3 of the Occupational Safety General Regulations. That Part will be deleted from those regulations and added as Part 6 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 6**

**6.1** In this Part,

"adequate warning properties" means the ability of workers to detect a chemical through odour, taste, eye irritation or respiratory irritation at concentrations below the occupational exposure limits established in subsection 2.3(1);

"assigned protection factor" means the protection factor listed in Figure 4, Hierarchy of Respiratory Protection in CSA standard Z94.4 "Selection, Use and Care of Respirators";

"dust" means a solid, mechanically produced particle;

"earmuff" means a hearing protection usually consisting of a headband and earcups with a soft outer ring or cushion intended to fit firmly around the ear or the sides of the head around the ear;

"fume" means a solid particle formed by condensation;

"IDHL" means immediately dangerous to life or health;

"immediately dangerous to life or health" means an atmosphere that poses

- (i) an immediate threat of loss of life,
- (ii) an immediate or delayed irreversible adverse effect on health, or
- (iii) an acute eye exposure that may prevent escape from a hazardous area;

"mist" means a liquid suspended in the air;



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"personal protective equipment" means any clothing, device or other article intended to be worn or used by a person to prevent exposure to a hazardous condition;

"vapour" means the gaseous state of a substance that is predominantly a liquid or solid at room temperature and atmospheric pressure.

**Application**

**6.2** This part applies in all situations where personal protective equipment is used.

**Personal protective equipment required**

- 6.3** (1) If a hazardous condition may cause injury or illness to a person, and it is not reasonably practicable to control the hazard an employer must provide adequate personal protective equipment to ensure the health and safety of a person who may be exposed to the hazard.
- (2) An employer that provides personal protective equipment in accordance with subsection (1) must do all of the following:
- (a) except as set out in subsection (3), pay the cost of the personal protective equipment;
  - (b) provide and pay for all of the following:
    - (i) training for a person required to wear or use the personal protective equipment;
    - (ii) any maintenance and repairs of any personal protective equipment required in this Part;
  - (c) ensure the personal protective equipment is worn and used in accordance with these regulations.
- (3) An employer may but is not required to pay the cost of hardhats, safety boots, safety glasses, or personal protective equipment that is required to prevent exposure to temperatures that are beyond the control of the employer.
- (4) An employer must consult directly with the committee or representative, if one exists, or where neither exist, with the employees, in the selection of

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the type of personal protective equipment to be provided.

**Inspection, testing and maintenance of personal protective equipment**

- 6.4 (1)** If personal protective equipment is used an employer must ensure all of the following:
- (a) the person using the personal protective equipment:
    - (i) is informed of the hazardous condition for which the equipment is designed and the limitations in the protection afforded by the equipment;
    - (ii) receives adequate training in the proper use, care, maintenance and storage of the personal protective equipment or devices;
    - (iii) wears or uses the personal protective equipment or devices in accordance with the instruction and training provided;
  - (b) the equipment is inspected, tested and maintained, in accordance with the manufacturer's specifications;
  - (c) the equipment is fitted to the person using the equipment to ensure it is capable of preventing an exposure to a hazardous substance or agent that may affect the health or safety of the user;
  - (d) adequate storage facilities will be provided.
- (2)** An employer must consult the committee or representative, if one exists, on the training to be provided to the users of personal protective equipment.
- (3)** An employee must wear or use personal protective equipment as required under Section 6.3.

**Hazard to eyes, face or neck**

- 6.5 (1)** Except as permitted under subsection (2), an employer must ensure that a person exposed to a hazard that may irritate or injure the eyes, face, or front of the neck, wears protective equipment that is appropriate to the hazard and that complies with CSA standard CSA Z94.3, "Industrial Eye

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and Face Protectors".

- (2) Subsection (1) does not apply if a person operating a chain saw is wearing adequate face protection as a substitute for the protective equipment referred to in subsection (1).

**Hazard to Head**

- 6.6 (1) An employer must ensure that a person exposed to a hazard that may injure the person's head wears protective equipment that is appropriate to the hazard and that complies with the latest version of 1 of the following standards:
  - (a) CSA standard CSA Z94.1, "Industrial Protective Headwear";
  - (b) ANSI standard ANSI Z89.1, "Industrial Head Protection".
- (2) An employer who complies with the requirements of a standard set out in clause (1) must select Type 2, Class E headwear regardless of the selection criteria noted in that standard unless a site specific hazard assessment has been completed.

**Hazard to foot or skin**

- 6.7 (1) An employer must ensure that a person exposed to a hazard that may injure the person's foot wears protective equipment that is appropriate to the hazard and that complies with the latest version of CSA standard CSA Z195, "Protective Footwear".
- (2) An employer must ensure that a person exposed to a hazard that may injure the skin wears or uses adequate protection for the skin.

**Respiratory Hazard**

- 6.8 (1) An employer must do all of the following when a person is or is likely to be exposed to a respiratory hazard that may cause injury or disease:
  - (a) establish and maintain a written respiratory protection program in accordance with Section 2.12;
  - (b) provide and ensure the use of an adequate respirator that is appropriate to the hazard.

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- (2) Subject to subsection (3), an employer must ensure all of the following:
  - (a) signs are posted at access points to an area where respirators are required that state
    - (i) a warning that respirators are required, and
    - (ii) the name of the hazardous substance involved that provides the greatest hazard; and
  - (b) a person who is not trained to use a respiratory as required in Section 6.10 shall not be permitted to enter the area in which the respirators are required.
- (3) Clause (2)(a) does not apply where an emergency situation prevents an employer from implementing the requirements.

**Selecting or using a respirator**

- 6.9** (1) An employer must ensure all of the following:
- (a) a respirator is selected, maintained and used in accordance with the CSA standard CSA Z94.4 "Selection, Use and Care of Respirators";
  - (b) only a respirator certified by NIOSH is provided and used in a workplace.
- (2) An employer must ensure there is an effective seal when a person uses a respirator, and that users comply with the latest version of CSA standard CSA Z94.4 "Selection, Use and Care of Respirators" to ensure hair does not interfere with the respirator sealing to the skin of the face or neck.
- (3) A user must comply with the latest version of CSA standard CSA Z94.4 "Selection, Use and Care of Respirators" regarding an acceptable standard for facial hair.
- (4) Air-purifying respirators must not be used for protection against any gas or vapour which does not have adequate warning properties unless an end-of-service-life indicator, as defined in CSA standard CSA Z94.4 "Selection, Use and Care of Respirators", is provided.

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**Training required for respirators**

- 6.10 (1)** A employer must ensure that a person who uses a respirator is trained in the proper use of the equipment at all of the following times:
- (a) before the equipment is used,
  - (b) once at least every two years.
- (2)** Training on a respirator under subsection (1) must include all of the following:
- (a) checking the fit and seals;
  - (b) how to properly wear the respirator;
  - (c) dealing with emergency situations involving the use of different respirators and the malfunction of the usual respirator.
- (3)** An employer must ensure that a training program for a person required to use self-contained breathing apparatus must include annual instruction and practice in controlled breathing and training under simulated use conditions.

**Quantitative fit testing**

- 6.11** An employer must ensure that a quantitative fit test is provided that meets the requirements of CSA standard CSA Z94.4 "Selection, Use and Care of Respirators" for a hazardous substance, from which a fitted respirator offers protection, with a concentration that exceeds ten (10) times the occupational exposure limit.

**Hygienic considerations for respirators**

- 6.12 (1)** An employer must ensure all of the following:
- (a) a respirator must be assigned for the exclusive use of one person when it is reasonably practicable to do so;
  - (b) a respirator issued for the exclusive use of one person must be thoroughly cleaned and disinfected, in accordance with

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manufacturer's specifications, after each day's use, or more often as required in the circumstances;

- (c) a respirator used by more than one person must be thoroughly cleaned and disinfected, in accordance with manufacturer's specifications, after each use.

**Replacing respirator parts**

**6.13** An employer must ensure that worn or deteriorated parts of a respirator are replaced.

**Health assessment for wearing a respirator**

**6.14** An employer must ensure that a person required to wear a respirator who experiences difficulty breathing while using the respirator is provided with a health assessment to determine

- (a) if the person is able to perform the task without a health risk; and
- (b) the person's medical fitness to wear a respirator.

**Positive pressure breathing apparatus**

**6.15** An employer must ensure all of the following for a person who is or is likely to be exposed to an atmosphere immediately dangerous to life or health:

- (a) the person is provided with a positive pressure breathing apparatus that
  - (i) has an air line and an independent 5 minute supply of air, or
  - (ii) is self-contained; and
- (b) another person is present who
  - (i) has a self-contained breathing apparatus immediately available, and
  - (ii) is equipped and trained to carry out an immediate rescue.

**Self-contained breathing apparatus**

**6.16 (1)** An employer must ensure that any systems ancillary to a self-contained

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breathing apparatus or a supplied-air respirator that are not certified by NIOSH must comply with CSA Standard CSA Z180.1, "Compressed Breathing Air and Systems".

- (2) An employer must ensure that a self-contained breathing apparatus is equipped with an audible alarm that sounds when the air or oxygen supply has diminished to the greater of the following:
  - (a) 20 per cent of the capacity of the unit; or
  - (b) a 5-minute reserve.
- (3) A person using the self-contained breathing apparatus must stop work and exit the hazardous area through the most expedient route possible when an alarm under subsection (2) sounds.
- (4) A person must not enter an area requiring a self-contained breathing apparatus unless the supply of air required in subsection (2) is sufficient to ensure the person using the equipment is able to leave the area safely.

**Hazard to hearing**

- 6.17** (1) An employer must ensure that personal hearing protection required under Section 2.3 of these regulations complies with the latest version of CSA Standard Z94.2 "Hearing Protection Devices - Performance, Selection, Care and Use".
- (2) A person wearing earmuff-type hearing protectors must ensure that the earmuff maintains an effective seal around the ears and is not interfered with by hair or personal apparel.
  - (3) An employer must provide and post warning signs at conspicuous locations at the entrances to any work area where sound levels exceed or may exceed the linear equivalent sound level of 85 dBA that do all of the following:
    - (a) clearly identify that a hazardous condition exists due to potential sound exposure;
    - (b) state that hearing protection is required to be worn in that area.

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**Risk of drowning**

- 6.18 (1)** An employer must do 1 of the following for a person exposed to the risk of drowning at a workplace:
- (a) subject to subsection (2), select, provide and ensure the use of a life jacket or personal flotation device for the person;
  - (b) provide an alternative means of protection that ensures an equivalent level of safety to prevent a person from drowning.
- (2)** If a person working alone is exposed to the risk of drowning and is not visible to or within hearing distance of another person who is in a position to immediately come to their aid, an employer complying with clause (1)(a) must ensure the life jacket or personal flotation device selected, provided and used by the person is designed to provide buoyancy without any effort by the user and to rotate an unconscious person to an upward facing position in the water.
- (3)** A life jacket or personal flotation device selected in accordance with clause (1)(a) or required by subsection (2), must meet all of the following requirements:
- (a) it is approved by Transport Canada, Canadian Coast Guard or US Coast Guard;
  - (b) it is appropriate for the weight of the person who will wear it;
  - (c) it has sufficient buoyancy to keep the person's head above water.
- (4)** An employer must provide all of the following rescue equipment when a person is exposed to the risk of drowning at a workplace:
- (a) a life buoy with 15 m of polypropylene rope that is at least 10 mm in diameter or that is made from material that provides an equivalent level of protection;
  - (b) a boat hook;
  - (c) an audible alarm system to notify of an accident and to initiate the rescue procedure;



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- (d) an adequate motor boat to ensure a safe and timely rescue, if appropriate.
- (5) If a person is exposed to the risk of drowning at a workplace, an employer must ensure that enough employees are
  - (a) designated to perform specific rescue tasks;
  - (b) informed as to adequate rescue procedures; and
  - (c) trained in the rescue procedures and use of rescue equipment so that they can perform rescue operations safely.
- (6) If work is being done above water that has a fast current, if reasonably practicable, a line that meets all of the following requirements must be placed across the water:
  - (a) made of polypropylene rope that is at least 10 mm in diameter or material that provides an equivalent level of protection;
  - (b) placed sufficiently downstream, considering the rate of flow, to allow a person in the water sufficient time to make contact with the line; and
  - (b) have buoys or some other flotation device attached to it.
- (7) A person that is exposed to the risk of drowning must wear a life jacket or personal flotation device as required by this Section.

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**Part 14: Excavation and Trenching**

*[Note: Excavation and Trenching is currently addressed in Part 14 of the Occupational Safety General Regulations. That Part will be deleted from those regulations and added as Part 14 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 14**

**14.1** In this part:

"berm" means a mound of earth that is constructed to a suitable height for the intended purpose which may include to:

- (i) prevent against inadvertent entry,
- (ii) prevent people from falling into excavations; and
- (iii) construct shoulder barriers on surface mine haul roads;

"excavation" means a dug-out area of ground but does not include a tunnel, underground shaft or open pit mine;

"trench" means a narrow dug-out area of ground that is deeper than its width at the bottom;

"tunnel" means an underground passage with an incline of less than 45 degrees from the horizontal.

**Shoring an excavation or trench**

**14.2 (1)** If a person may enter an excavation or trench that has a wall greater than 1.2 m in height, an employer must ensure that the wall is supported by adequate shoring or bracing, or that an adequate trench cage is used, except where the employer is able to establish that the excavation or trench meets all of the following conditions:

- (a) it is cut in sound and stable rock;
- (b) it is sloped, and the slope does not exceed 1 m of vertical rise to each 1 m of horizontal run,
  - (i) to within 1.2 m of the bottom of the excavation or trench,

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or

- (ii) where soil overburden is located above an excavation or trench excavated in sound and stable rock, for the entire overburden,
  - (c) it is one that a person does not enter within a horizontal distance from the walls of the excavation or trench that is equal to the height of the walls.
- (2) An employer must ensure that shoring or bracing for an excavation or trench meets at least one of the following requirements:
  - (a) it complies with a design certified by an engineer; or
  - (b) it is commercially manufactured.
- (3) An employer must ensure that any shoring or bracing for an excavation or trench is installed, erected, maintained and dismantled in accordance with the manufacturer's specifications or an engineer's specifications.
- (4) An employer must ensure that the walls or crests of an excavation or trench that are cut in rock are adequately supported by rock bolts, wire mesh or other means of adequate protection, if necessary, to ensure safe working conditions.
- (5) If powered mobile equipment is used near the edge of an excavation or trench, an employer must ensure that any shoring, bracing or caging for the excavation or trench is adequate to support the increased load.
- (6) An employer must ensure that the walls of an excavation or trench are stripped of loose rock or other material that could slide, roll or fall on a person in the excavation or trench and injure that person.
- (7) Despite clause (1)(b), an employer may slope the walls of an excavation or trench at an angle that exceeds a 1 m vertical rise to each 1 m horizontal run where an engineer has certified in writing that the steeper slope will be stable and is not a hazard to a person in the excavation or trench.
- (8) An employer must ensure that a utility pole, building or other structure is

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provided adequate support or removed if the utility pole, building or other structure may become unstable because of excavation or trenching activity.

**Entering or exiting an excavation or trench**

**14.3** A person must not enter an excavation or trench of 1.2 m or more in depth unless an employer ensures that a ladder is installed that extends at least 1 m above the excavation or trench or some other adequate means of access and exit is provided

- (a) that is no more than 7.5 m from where the person is working; or
- (b) within the trench cage when a trench cage is used.

**Excavated material**

**14.4** An employer must ensure that excavated material meets all of the following requirements:

- (a) it is kept at least 1 m away from the edge of an excavation or trench, unless an engineer certifies a shorter distance as adequate;
- (b) it is located a sufficient distance from the edge of the excavation or trench to ensure the excavated material does not re-enter the excavation or trench.

**Precautions for excavations or trenches**

**14.5 (1)** An employer must ensure that an excavation or trench that a person works in is kept reasonably free of water.

**(2)** An employer must ensure that before a person enters an excavation or trench that may expose the person to a hazardous substance or to an oxygen rich atmosphere, all of the following are done:

- (a) testing is performed to do all of the following:
  - (i) determine the concentration of any hazardous gas, vapour or dust, flammables, the concentration of oxygen and oxygen deficiency in the atmosphere in the immediate area of the excavation or trench where the work is to be performed,
  - (ii) ensure that the concentration of a chemical substance or a

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mixture of chemical substances in the excavation or trench does not exceed its occupational exposure limit under Part 2: Occupational Health or 50% of its lower explosive limit,

- (iii) ensure that the level of oxygen in the atmosphere in the excavation or trench is not less than 19.5 % and not more than 22.5 %, unless the employer can demonstrate that an unsafe oxygen level is not possible in the circumstances;
  - (b) adequate precautions are taken to reduce the risk of injury to a person.
- (3) A person must not store hazardous substances in an excavation or trench.
- (4) An employer must provide fences, guards, barricades or berms, as appropriate, at or near the sides of all temporary excavations greater than 1.2 m in depth to prevent a person from falling into an excavation, and must keep those fences, guards or barricades in place at all times, except where they interfere with the excavation or other work being done.
- (5) An employer must ensure that a berm used to provide the barrier required in subsection (4) is sufficiently steep and marked with a sign, warning tape or other means to provide adequate warning and inadvertent access from the safe side to the danger on the dug-out side.

**Trench cages**

- 14.6** (1) An engineer must certify the design of a trench cage that is used in an excavation or trench.
- (2) An engineer must include all of the following information in the certified design required in subsection (1):
    - (a) the depth at which the trench cage may be used;
    - (b) the manner in which the trench cage is to be installed, erected, used, maintained and dismantled.
  - (3) Before using it, an employer must ensure that a trench cage that is altered, repaired or otherwise modified in a manner that may affect the structural integrity of the cage meets all of the following conditions:

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- (a) it complies with the requirements of these regulations;
  - (b) it is certified by an engineer in accordance with subsections (1) and (2).
- (4) An employer must ensure all of the following when the top of a trench cage is below ground level:
  - (a) the soil above the trench cage must be sloped to the top of the cage;
  - (b) the slope in clause (a) must not exceed 1 m of vertical rise to each 1 m of horizontal run unless an engineer has certified in writing that the steeper slope is stable and is not a hazard to a person in the trench.
- (5) An employer must ensure that a nameplate that meets all of the following requirements is permanently attached to a trench cage:
  - (a) it is in a location visible for inspection when the trench cage is in use;
  - (b) it identifies the engineer that certified the design of the trench cage;
  - (c) it identifies the depth at which the trench cage may be used.
- (6) An employer must designate a competent person to inspect a trench cage before the beginning of each shift that it is used to ensure that it does not have any defects or damage that may affect its structural integrity.
- (7) If an inspection required in subsection (6) identifies a defect or damage that affects the structural integrity of the trench cage, an employer must remove the trench cage from service until it is repaired and re-certified in accordance with subsection 14.6(3).
- (8) An employer must ensure that a trench cage is used only as follows unless an engineer certifying the design of the cage also certifies its use in the specific circumstances:
  - (a) it must rest as close as possible to the bottom of the excavation or trench;

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- (b) it must not rest above the bottom of the excavation or trench more than the designed maximum height, or 900 mm, whichever is the lesser.

**Part 18: Blasting Safety**

*[Note: Blasting Safety is currently addressed in the stand-alone Blasting Safety Regulations. Those regulations will be repealed and added as Part 18 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 18**

**18.1** In this Part,

"blast log" means a log made under Section 18.11;

"blaster" means any of the following:

- (i) a person who holds a blaster certificate,
- (ii) a person who conducts a blast in a specialized blasting operation,
- (iii) a person who conducts a special case blast, as described in Section 18.19;

"blaster certificate" means a certificate of qualification in the blaster trade issued under the *Apprenticeship and Trades Qualifications Act*;

"blasting activity" includes all of the following:

- (i) storing, handling, transporting, preparing and using explosives,
- (ii) drilling at a blasting area or in combination with the use of explosives,
- (iii) loading a hole with explosives;

"blasting area" means the zone extending 50 m in all directions from the

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place in which explosives are handled, prepared, used or loaded for firing, or in which misfired explosives exist or are believed to exist;

"blasting incident" means 1 of the following occurrences:

- (i) a misfire or a suspected misfire,
- (ii) the presence of any fire, heat or gas that creates a risk of an explosive detonating accidentally,
- (iii) injury to any person or damage to property from flying material,
- (d) flying material leaving the danger area;

"blasting incident report" means a report made in accordance with subsection 18.8;

"blasting machine" means an electric or electro-mechanical device that provides electric energy for energizing electric detonators, but does not include batteries by themselves;

"blasting meter" means a test instrument, such as a blasting galvanometer, blasting ohmmeter, blasting voltmeter or blasting multimeter, that is used to check detonators and electric circuits for continuity, resistance, stray currents and other pertinent measurements;

"blasting operation" means the portion of a procedure involving explosives that begins when explosives are brought into the area to be blasted and ends when all unused explosives are removed from the area;

"blasting switch" means a device used to permit the firing of electric blasting circuits from power lines;

"burden" means the distance between the blast hole and the free face of the material being blasted;

"danger area" means any area in which there may be a danger to any person from flying material or other condition resulting from a blast;



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"day box" means a portable unit used for storing explosives and not used for overnight storage;

"detonator" means a device used to fire a charge;

"explosive" means a substance, including a detonator or primed explosive, that is manufactured or used to produce an explosion by detonation or deflagration and that is regulated by the Explosives Act (Canada), but does not include ammunition for weapons, fireworks or explosive-actuated tools;

"extraneous electricity" means unwanted electric current that is present at a blasting area and that could enter an electric blasting circuit, and includes stray current, static electricity, radio frequency energy and time-varying electric and magnetic fields;

"flying material" means material that is thrown or projected by the force of a blast that may be dangerous and is generally undesirable and includes dirt, ice, metal, rock, water and wood;

"magazine" means a fixed unit used for storing explosives;

"misfired hole" means a charge of explosives in a hole or part of a hole that for any reason has failed to fire as planned, and includes an aborted charge under clause 18.81(d);

"prime a charge" means to position a detonator for use in firing a charge;

"primed explosive" means an explosive containing a detonator;

"specialized blasting" means blasting of any of the following types:

- (i) blasting in a confined space,
- (ii) blasting underwater,
- (iii) blasting to demolish an above-ground building,
- (iv) stack or similar structure,

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- (v) blasting ice,
- (vi) blasting in theatrical applications,
- (vii) blasting in, at or near an oil or gas well.

**Application**

**18.2** This Part of these regulations applies to every workplace to which the Act applies and at which blasting activity is conducted, other than a mine as defined in the *Underground Mining Regulations* made under the Act.

**Designations in writing**

**18.3** If an employer is required by this Part of these regulations to designate a person to perform a particular task or to carry out a particular responsibility, the designation must be made in writing and kept by the employer for at least 2 years after the date the designation ceases to be effective.

**Blasting operation under direction and control of blaster**

- 18.4** (1) An employer must ensure that a blasting operation is under the direction and control of a blaster.
- (2) If more than 1 blaster will be involved in a blasting operation, an employer must, before the blasting operation begins, designate 1 blaster as the blaster with direction and control of the blasting operation.
- (3) An employer must ensure that all persons in the blasting area are made aware of the identity of the blaster with direction and control of the blasting operation.

**Coordination of activities in blasting area**

**18.5** An employer, a blaster with direction and control of the blasting operation and any supervisor directing work in a blasting area must ensure that all tasks in the blasting area are coordinated so that they may be performed safely.

**Access explosives**

- 18.6** (1) An employer must designate all persons who are authorized by the employer to have access to explosives.
- (2) An employer must ensure that only persons designated by the employer have access to explosives.

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**Report of theft or attempted theft**

**18.7** An employer must report any theft or attempted theft of explosives to the Director as soon as reasonably practicable.

**Blasting incident reports**

**18.8 (1)** If a blasting incident occurs, an employer, in consultation with a blaster, must do all of the following:

- (a) notify the Director in writing no later than 24 hours after the time of the blasting incident;
- (b) submit a blasting incident report and a copy of the blast log to the Director as soon as reasonably practicable;
- (c) if 1 or more committees have been established at the workplace, give each committee a copy of the blasting incident report and a copy of the blast log as soon as reasonably practicable;
- (d) if 1 or more representatives have been selected at the workplace, give each representative a copy of the blasting incident report and a copy of the blast log as soon as reasonably practicable;
- (e) consult with the committee or committees and the representative or representatives, if any have been established or selected, about actions that may prevent a future blasting incident similar to the one that has occurred;
- (f) take every precaution that is reasonable in the circumstances to prevent a future blasting incident similar to the one that has occurred.

**(2)** A blasting incident report must include all of the following:

- (a) a summary of the blasting incident;
- (b) the date and time of the blasting incident;
- (c) the location of the blasting incident;
- (d) if a supervisor was directing work in the blasting area, the name of

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the supervisor;

- (e) the name of the blaster under whose direction and control the blasting operation was conducted;
- (f) the names of all blasters involved in the blasting operation, together with their blaster certificate numbers;
- (g) the name and telephone number of the person completing the blasting incident report;
- (h) the names and addresses of all persons who witnessed the blasting incident;
- (i) if any person was injured as a result of the blasting incident, the name and address of the person and a description of the injuries sustained;
- (j) if any property damage occurred as a result of the blasting incident, a description of the property damage;
- (k) a description of the weather at the time of the blasting incident, including precipitation, temperature, wind speed, wind direction and ceiling height;
- (l) if the blasting incident occurred during or as a result of a blast, how the blast was initiated;
- (m) the employer's assessment of the cause of the blasting incident;
- (n) a description of actions that may prevent a future blasting incident similar to the one that is the subject of the blasting incident report.

**Blasting logs**

- 18.9 (1)** A blaster with direction and control of a blasting operation must make a blast log for the blast.
- (2)** An employer must ensure that a blaster makes a blast log.
- (3)** A blaster must give a copy of a completed blast log to their employer as

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soon as reasonably possible and, if reasonably practicable, before the end of the day on which the inspection conducted after the blast, as required by Section 18.80, is concluded.

- (4) An employer must keep the copy of a blast log received from a blaster for at least 3 years after the date of the blast.
- (5) A blast log must include all of the following information:
  - (a) the date and time of the blast;
  - (b) the location of the blast;
  - (c) the name, address and telephone number of the employer;
  - (d) the name, blaster certificate number and signature of the blaster who had direction and control of the blasting operation;
  - (e) a description of the weather at the time of the blasting incident, including precipitation, temperature, wind speed, wind direction and ceiling height;
  - (f) the distance from the nearest house, residence, shop, church, school or other structure occupied in whole or in part by people;
  - (g) the distance from the nearest structure other than one referred to in clause (f);
  - (h) how the blast was initiated;
  - (i) the following drilling and loading characteristics for each hole or for each group of holes sharing the same characteristics:
    - (i) hole identifier number,
    - (ii) hole diameter,
    - (iii) hole depth,
    - (iv) burden,

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- (v) spacing,
- (vi) quantity of explosives planned to be loaded in each hole, recorded in kilograms,
- (vii) total quantity of explosives planned to be used for the blasting operation, recorded in kilograms,
- (viii) type and length of stemming,
- (ix) type and brand of explosive,
- (x) type of detonator;
- (j) a sketch of the loading pattern for the blast;
- (k) the total quantity of explosives actually loaded into each hole, recorded in kilograms;
- (l) the maximum quantity of explosives per delay, recorded in kilograms;
- (m) the specifics of the delay pattern;
- (n) the number of detonators used in the blast;
- (o) the period numbers of the detonators used in the blast;
- (p) the resistance in the electric blasting circuit as tested in accordance with subsection 18.74(2), recorded in ohms;
- (q) the type of warning signal used;
- (r) whether blasting mats were used;
- (s) whether warning signs were posted on all public roads near the blasting area, leading to the blasting area and leading from the blasting area;
- (t) whether all roads and approaches were guarded or barricaded;

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- (u) the results of the inspection of the blasting area conducted after the blast as required by Section 18.80;
- (v) whether a misfire occurred;
- (w) whether there was any injury to persons or damage to property resulting from the blast.

**Warning signs on public roads**

- 18.10 (1)** This Section does not apply to a temporary workplace as defined in Part 24: Temporary Workplaces on Highways.
- (2) During an electric blasting operation, the employer and the blaster with direction and control of the blasting operation must ensure that warning signs bearing the words "Blasting Operations, Turn Off Radio Transmitter" are posted on all public roads near or leading to the blasting area so as to be visible to persons approaching the blasting area.
  - (3) During a non-electric blasting operation, the employer and the blaster with direction and control of the blasting operation must ensure that warning signs bearing the words "Blasting Operation" are posted on all public roads near or leading to the blasting area so as to be visible to persons approaching the blasting area.
  - (4) A warning sign required by subsection (2) or (3) must be located at the following distance before the beginning of a blasting area:
    - (a) if the speed limit on the road is 50 km/h or lower, 100 m before the beginning of the blasting area;
    - (b) if the speed limit on the road is higher than 50 km/h, 300 m before the beginning of the blasting area.
  - (5) An employer and a blaster with direction and control of a blasting operation must ensure that signs bearing the words "End of Blasting" are posted on all public roads near or leading from a blasting area so as to be visible to persons leaving the blasting area.
  - (6) A sign required by subsection (5) must be located at the following distance after the end of a blasting area:

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- (a) if the speed limit on the road is 50 km/h or lower, 100 m after the end of the blasting area;
  - (b) if the speed limit on the road is higher than 50 km/h, 300 m after the end of the blasting area.
- (7) A sign required by this Section must have letters that are at least 15 cm in height on a contrasting background, and must have total dimensions of at least 90 cm in width and at least 120 cm in height.
- (8) An employer and a blaster must ensure that signs required by this Section are removed or covered when the blasting operation ends.

**Authority to Conduct and Supervise Blasting Activity**

**Application of blasting activity restrictions**

**18.11** Sections 18.12 to 18.17 do not apply to specialized blasting or to a special case blast as defined in subsection 18.19(1).

**Definitions for Sections 18.13 to 18.16 and Section 18.18**

**18.12** In Sections 18.13 to 18.16, and Section 18.18,

- (1) "Blaster (1st Class)" means the holder of a Blaster (1st Class) blaster certificate;
- (2) "Blaster (2nd Class)" means the holder of a Blaster (2nd Class) blaster certificate;
- (3) "Blaster (3rd Class)" means the holder of a Blaster (3rd Class) blaster certificate;
- (4) "blaster apprentice" means a blaster apprentice as defined in the *Blaster Trade Regulations* made under the *Apprenticeship and Trades Qualifications Act*;
- (5) "blaster assistant" means an individual who
  - (i) holds a certificate as a blasting trainee issued under the *General Blasting Regulations*, N.S. Reg 77/90, made by the Governor in



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Council by Order in Council 90-195 dated February 20, 1990,

- (ii) has successfully completed training in the safe handling of explosives through a course acceptable to the Director of Apprenticeship and Trades Qualifications under the *Apprenticeship and Trades Qualifications Act*,
- (iii) has passed an examination in the safe handling of explosives acceptable to the Director of Apprenticeship and Trades Qualifications under the *Apprenticeship and Trades Qualifications Act*, or
- (iv) has successfully completed training and has passed an examination in the safe handling of explosives through a course acceptable to the Director of Apprenticeship and Trades Qualifications under the *Apprenticeship and Trades Qualifications Act*.

**Blasting activity to be conducted by or supervised by blaster**

**18.13** Only a blaster, a blaster apprentice working under the close visual supervision of a blaster, or a blaster assistant working under the close visual supervision of a blaster may do any of the following:

- (a) prime a charge;
- (b) make a connection that leads from a charge to a blasting machine, a blasting switch, a safety fuse, or a shock tube initiating system;
- (c) connect a delay or sequencing device for a blast;
- (d) program a delay for a blast;
- (e) fire a charge.

**Blasting activity restricted to Blaster (1<sup>st</sup> Class)**

**18.14** Except as provided in subsection 18.16(1) and clause 18.16(2)(b), no person other than a Blaster (1st Class) may conduct or supervise a blast within 50 m of any structure that is occupied in whole or in part by people, including a house, residence, shop, church and school.

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**Blasting activity restricted to Blaster (1st Class) and Blaster (2nd Class)**

**18.15** Except as provided in subsection 18.16, a blaster shall conduct blasting as per the following table:

	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Amount of Explosives Permitted to Use</b>	<b>Distance from any structure that is occupied in whole or in part by people, including a house, residence, shop, school and place of worship</b>	<b>Distance from any other structure other than one referred to in Column B</b>
<b>1<sup>st</sup> Class Blaster</b>	<b>No Limit</b>	<b>No Limit</b>	<b>No Limit</b>
<b>2<sup>nd</sup> Class Blaster</b>	<b>No Limit</b>	<b>≥ 50 Meters</b>	<b>No Limit</b>
<b>3<sup>rd</sup> Class Blaster</b>	<b>≤ 100 Kg.</b>	<b>≥ 300 Meters</b>	<b>≥ 60 Meters</b>

**Blasting activity restricted to Blaster (2nd Class) and Blaster (3rd Class) under supervision**

**18.16 (1)** A Blaster (2nd Class) may conduct any blasting activity that a Blaster (1st Class) may conduct, if supervised by a Blaster (1st Class) who remains at the blasting area.

**(2)** A Blaster (3rd Class) may

- (a)** conduct any blasting activity that a Blaster (2nd Class) may conduct, if supervised by a Blaster (2nd Class) who remains at the blasting area; and
- (b)** conduct any blasting activity that a Blaster (1st Class) may conduct, if supervised by a Blaster (1st Class) who remains at the blasting area.

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**Employer must ensure no prohibited blasting activity**

**18.17** An employer must ensure that no person conducts a blasting activity that the person is prohibited from conducting under Section 18.13, 18.14 or 18.15.

**Proof of certification**

**18.18** Each Blaster (1st Class), Blaster (2nd Class), and Blaster (3rd Class) must keep proof of their blaster certificate at the workplace while conducting blasting activity.

**Specialized Blasting and Blasting by Uncertified Persons**

**Work procedure for specialized blasting and blasting by uncertified persons**

- 18.19** (1) In this Section and in Sections 18.20 and 18.21, a "special case blast" means a blasting activity conducted only by persons who do not hold valid blaster certificates.
- (2) An employer or a person who proposes to conduct specialized blasting or a special case blast must prepare a written work procedure for using and handling explosives in the blasting operation and file it with the Director, subject to subsection (3), at least 30 days before the date the specialized blasting or the special case blast is proposed to be conducted.
- (3) The Director may approve a period shorter than 30 days within which a specialized blasting or special case blast work procedure must be filed.
- (4) A work procedure required by subsection (2) must include all of the following:
- (a) the names and qualifications of all persons who will be conducting blasting activities in the blasting operation;
  - (b) a detailed description of how the planned specialized blasting activity or special case blast will be safely performed.
- (5) An employer must ensure that each person involved in any blasting activity under this Section is
- (a) qualified because of that person's knowledge, training and experience to do the assigned work in a manner that will ensure the health and safety of every person in the workplace; and

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- (b) knowledgeable about the provisions of the Act and regulations that apply to the assigned work and about potential or actual danger to health or safety associated with the assigned work.

**Consulting committees and representatives**

- 18.20 (1)** If 1 or more committees have been established at the workplace, an employer must consult with each committee when preparing a work procedure for specialized blasting or for a special case blast.
- (2)** If 1 or more representatives have been selected at the workplace, an employer must consult with each representative when preparing a work procedure for specialized blasting or for a special case blast.

**Following work procedure**

- 18.21** An employer must ensure that a work procedure for specialized blasting and for a special case blast is followed.

**Handling and Storing Explosives**

**Handling explosives**

- 18.22 (1)** An employer and a blaster must ensure that explosives are handled in accordance with the manufacturer's specifications.
- (2)** An employer and a blaster must ensure that explosives are protected from impact and rough handling.

**Using equipment according to manufacturer's instructions**

- 18.23** An employer and a blaster must ensure that any equipment used in connection with explosives is used in accordance with the manufacturer's specifications.

**No priming charge where explosives are stored**

- 18.24 (1)** An employer must ensure that no person primes a charge in an area where explosives are stored.
- (2)** A person must not prime a charge in an area where explosives are stored.

**Tools used to open container of explosives**

- 18.25** An employer must ensure that only tools made of non-sparking material are used to open a container of explosives.

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### **No carrying explosive in clothing**

- 18.26** (1) An employer must ensure that no person carries an explosive in clothing.
- (2) A person must not carry an explosive in clothing.

### **Storing explosives**

- 18.27** An employer must ensure that explosives are stored only in a magazine licensed under the Explosives Act (Canada) or in a day box.

### **Explosives must be attended**

- 18.28** An employer must ensure that an explosive is attended by a designated person who is physically present or able to monitor visually and take appropriate action, except in any of the following circumstances:
- (a) when it is stored in a locked magazine;
- (b) when conducting seismic blasting in accordance with section 18.88.

### **Storing detonators**

- 18.29** (1) An employer must ensure that a detonator is not stored in the same day box or magazine as another type of explosive.
- (2) An employer must ensure that a detonator is not placed in the same compartment of a vehicle as another type of explosive, unless the detonator is separated from the other type of explosive by using a day box.

### **Handling detonators**

- 18.30** (1) An employer and a blaster must ensure that no person handles a detonator together with another type of explosive, except when priming a charge.
- (2) A blaster must ensure that an electric detonator is kept shunted or short-circuited, except during the testing or use of the detonator.

### **Maintaining magazine**

- 18.31** An employer must ensure all of the following:
- (1) that a magazine is kept in good repair;
- (2) that a magazine is kept clean;

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- (3) that a magazine is decontaminated as necessary;
- (4) that a magazine is kept organized to allow explosives to be easily selected, issued and inventoried;
- (5) that uncovered boxes, loose cartridges, loose spools and loose detonators are not kept in a magazine;
- (6) that cases of explosives in a magazine are not piled higher than allowed by the magazine licence issued under the *Explosives Act* (Canada); and
- (7) that the quantity of explosives stored in a magazine does not exceed the amount allowed by the magazine licence issued under the *Explosives Act* (Canada).

**Employee in charge of magazine**

**18.32** An employer must ensure that for every magazine, there is an employee designated as being in charge.

**Magazine inventory**

- 18.33** (1) An employer must ensure that an employee designated under Section 18.32 as being in charge of a magazine maintains a written inventory of the contents of the magazine.
- (2) A magazine inventory must include either
    - (a) a record of detonators stored in the magazine, organized by period and legwire length; or
    - (b) a record of explosives other than detonators stored in the magazine, organized by type of explosive.
  - (3) An employer must keep a magazine inventory for at least 2 years after the date that information is last entered into the magazine inventory.
  - (4) An employer must keep a magazine inventory at the workplace.
  - (5) An employer must not keep a magazine inventory in a magazine.

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**Repairing magazine**

**18.34** Before starting a repair to a magazine that creates a risk of an accidental explosion, an employer must ensure that explosives are removed from the magazine and that the magazine is decontaminated.

**Construction and marking of day box**

- 18.35 (1)** An employer must ensure that a day box is made of non-sparking material or has wood or other non-sparking material covering all metal inside of the day box that could otherwise come into contact with explosives.
- (2)** An employer must ensure that a day box is conspicuously marked on all sides with the word "EXPLOSIVES"

**Certifying day box**

**18.36** An employer must ensure that a day box is certified by an engineer to be sufficient to protect a person from injury.

**Storage in day box**

**18.37** An employer must ensure that an explosive is not stored in a day box for longer than 24 consecutive hours.

**No combustibles around day box or magazine**

**18.38** An employer must ensure that the area within 10 m of a day box or magazine is kept clear of long grass, brush, and other readily combustible materials.

**No hazardous items around explosive, day box or magazine**

**18.39** An employer must ensure that none of the following items are brought into a blasting area or within 10 m of an explosive, a day box or a magazine:

- (a)** an open flame;
- (b)** an item that is likely to spontaneously combust;
- (c)** an item that is likely to cause a fire;
- (d)** an item, other than a detonator, that causes a risk of accidental explosion.

**Smoking prohibition**

**18.40 (1)** An employer must ensure that no person smokes in a blasting area or within 10 m of an explosive, a day box or a magazine.

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- (2) A person must not smoke in a blasting area or within 10 m of an explosive, a day box or a magazine.

**Destroying explosives**

- 18.41 (1)** An employer must ensure that waste, deteriorated, damaged or time-expired explosives are destroyed promptly and in accordance with the manufacturer's specifications.
- (2) An employer must ensure that explosives are destroyed by 1 of the following:
    - (a) a blaster;
    - (b) a representative of the manufacturer of the explosive;
    - (c) a qualified member of the Royal Canadian Mounted Police, the Department of National Defence, or a local police force.

**Nitroglycerine-based product**

- 18.42** Except when necessary for the use of the explosive, a blaster must not remove the original wrapping from a nitroglycerine-based explosive.

**Frozen explosives**

- 18.43** An employer must ensure that frozen explosives are used, stored and handled only in accordance with the manufacturer's specifications.

**Electrical storms**

- 18.44** If an electrical storm is approaching or occurring in a blasting area, an employer and a blaster must ensure all of the following:
- (1) that all persons in a magazine leave it;
  - (2) that all persons move to a location where there is no danger from an accidental explosion;
  - (3) that no person handles explosives.



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**Drilling**

**Drilling in previously blasted area**

**18.45** An employer must ensure that no drilling is done in a previously blasted area until a blaster has visually examined the area for misfired holes and any misfired hole identified has been treated as required by Section 18.85.

**Drilling near hole containing an explosive**

**18.46 (1)** An employer must ensure that no drilling is done closer to the following minimum distances from any part of a hole containing an explosive:

- (a) if the hole being drilled is more than 12 m deep, a distance equal to half the total depth of the hole being drilled;
- (b) if the hole being drilled is 12 m deep or less, a distance of 6 m.

- (2) If an application for a deviation from this Section is made under subsection 83(1) of the Act, a decision by the Director must not be made until at least 24 hours after the time the application is received by the Director.

**Drilling hole size**

**18.47** An employer must ensure that a drill hole is big enough to allow explosives to be inserted to the end without ramming, pounding or using excessive pressure.

**No excessive pressure when tamping or stemming**

**18.48** A blaster must ensure that no ramming, pounding or excessive pressure is used when tamping explosives or stemming.

**Loading and Preparing for Firing**

**Hole must not be loaded until reasonably necessary**

**18.49** An employer and a blaster must ensure all of the following:

- (1) a hole is not loaded with an explosive sooner than is reasonably necessary;
- (2) once an explosive is primed, it is put in a hole or it is put in its intended location as soon as it is safe to do so.

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### **Tamping rods**

**18.50** An employer must ensure that tamping rods are made of non-sparking material.

### **No slit or tamped primed explosives**

**18.51** A blaster must ensure that a primed explosive is not slit or tamped.

### **Stemming**

**18.52** When explosives are loaded in a hole, a blaster must ensure that a sufficient amount of stemming is used and that the stemming is made from a suitable material.

### **Unplanned movement of equipment**

**18.53** An employer must ensure that sufficient precautions are taken to prevent toppling, sliding or other unplanned movement of equipment in a blasting area.

### **Pneumatic loading of ammonium nitrate and fuel oil**

**18.54** In conducting pneumatic loading of ammonium nitrate and fuel oil,

- (1) an employer must ensure that only a semiconductive hose designed for that purpose is used;
- (2) an employer and a blaster must ensure that the pneumatic loader is effectively grounded; and
- (3) a blaster must ensure that the bottom priming of drill holes is done with non-electric initiation.

### **Identifying loaded holes**

**18.55** An employer and a blaster must ensure that the location of loaded holes is identified by at least 1 of the following methods:

- (1) placing individual markers at each hole;
- (2) marking off the perimeter of the area containing loaded holes with warning tape or another highly visible indicator.

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### **Security measures for area where loaded holes are present**

- 18.56** (1) An employer and a blaster must ensure that sufficient security measures are used to prevent any unauthorized person from entering an area where loaded holes are present.
- (2) Drill holes that have been charged with explosives must not be left unfired for any longer than is necessary.
- (3) In situations where an explosive is not fired on the day a hole is loaded, a written hazard assessment must be prepared to establish the level of security that is required.
- (4) Persons conducting the security must be trained in the associated hazards and clearly instructed on how to conduct and record the security measures to be taken.

### **Caution to be taken for loaded hole, explosive or blasting accessory**

- 18.57** (1) In this Section, "blasting accessory" means any device used in a blasting activity other than an explosive.
- (2) An employer and a blaster must ensure that no vehicle is driven over a loaded hole, an explosive or a blasting accessory.
- (3) An employer and a blaster must ensure that no electric cable or other equipment is moved over a loaded hole, an explosive or a blasting accessory.

## **Firing**

### **Time between connecting charges and firing**

- 18.58** An employer and a blaster must ensure that once charges are connected to one another or to a means of firing, the firing takes place as soon as it is safe to do so.

### **Placement of charge and other blast fumes**

- 18.59** An employer must ensure that a charge is not fired until a blaster has ensured that the placement of the charge and all other features of the blast are sufficient to minimize risk of injury to persons and damage to property.

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### **Airblast, ground vibrations and fumes**

**18.60** An employer and a blaster must ensure that sufficient precautions are taken to prevent injury to persons or damage to property from any of the following:

- (a) airblast resulting from a blast;
- (b) ground vibrations resulting from a blast;
- (c) fumes resulting from a blast.

### **Flying material**

- 18.61 (1)** An employer and a blaster must ensure that sufficient precautions are taken to prevent injury to persons or damage to property from flying material resulting from a blast.
- (2)** Precautions to prevent injury or damage from flying material may include any of the following:
- (a) using blasting mats of appropriate size and strength to minimize the amount of flying material;
  - (b) using a sufficient amount of burden to minimize the amount of flying material;
  - (c) removing persons and property from an area where flying material may create a hazard;
  - (d) providing shelter sufficient to protect persons and property from flying material.

### **Guarding or barricading approaches**

**18.62** Before a blast, an employer and a blaster must ensure that all roads and approaches to and from the blasting area are guarded or barricaded sufficiently to prevent a person from entering an area where the blast may create a hazard.

### **Warning signals**

**18.63 (1)** A blaster must ensure that no charge is fired until sufficient audible and visual warning signals are given to all persons in or near an area where the blast may create a hazard.

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- (2) At a surface mine or quarry, an employer must ensure that a warning procedure and a warning signal code are posted in a prominent place in the workplace capable of being easily accessed by the employees.

**Protecting persons**

- 18.64** (1) An employer and a blaster must ensure that no charge is fired unless all persons are in a shelter sufficient to protect them from injury or are at a safe distance from the blast.
- (2) For a seismic blasting operation, the minimum safe distance referred to in subsection (1) is 30 m.

**Protecting property**

- 18.65** (1) If reasonably practicable, a blaster must ensure that no charge is fired unless all property, including machinery and equipment, is located at a safe distance from the blast.
- (2) Subsection (1) does not apply to property that is intended to be demolished.

**Returning unused explosives to day box or magazine**

- 18.66** A blaster must ensure that no charge is fired unless unused explosives and unused detonators that were in the blasting area have been returned to a day box or magazine.

**Returning explosives to magazine**

- 18.67** An employer must ensure that unused explosives are inspected by a blaster to determine if they can be stored safely before the explosives are returned to a magazine.

**Removing containers**

- 18.68** A blaster must ensure that no charge is fired unless empty explosives containers have been removed from the blasting area.

**Burning empty containers**

- 18.69** An employer must ensure that any empty explosives containers are disposed of in accordance with the manufacturer's specifications and local regulations or by-laws.

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**Safety fuse assemblies**

- 18.70** (1) An employer and a blaster must ensure that no safety fuse assembly other than a safety fuse assembly authorized under the Explosives Act (Canada) is used to fire a charge.
- (2) An employer and a blaster must ensure that no safety fuse is capped.
- (3) An employer and a blaster must ensure that a safety fuse assembly is at least 1 m long.
- (4) If it is necessary to fire more than 1 safety fuse assembly at one time, an employer and a blaster must ensure that only 1 igniter cord is lit.
- (5) An employer must ensure that a blaster lighting a safety fuse or igniter cord is accompanied by another employee.

**Extraneous electricity**

- 18.71** An employer must ensure that an electric detonator is not used if extraneous electricity at the blasting area exceeds 50 mA.

**Minimum distances from radio frequency transmitters**

- 18.72** (1) During electric blasting, an employer and a blaster must ensure minimum distances from radio frequency transmitters are maintained as detailed in the latest version of Safety Library Publication No. 20, "Institute of Makers of Explosives Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps)".
- (2) If the required minimum distance of electric blasting circuits from radio frequency transmitters has not otherwise been determined, the following minimum distances must be maintained:
- (a) 100 m from a citizens' band radio, cellular telephone, satellite telephone or other mobile or portable radio frequency transmitter; and
- (b) 1000 m from a TV transmitter or an AM, FM or other radio frequency transmitter.

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### **Testing continuity**

**18.73** A blaster must ensure that the continuity of each hole containing an electric detonator is tested with a blasting meter before firing.

### **Electric blasting circuit**

**18.74 (1)** A blaster must ensure that the last connection made in an electric blasting circuit is the connection of the lead wires to the blasting machine or blasting switch.

**(2)** Before the last connection is made in an electric blasting circuit, a blaster must test the resistance in the circuit with a blasting meter to ensure that readings are consistent with the values calculated in the blast design.

**(3)** An employer and a blaster must ensure that an electric blasting circuit is fired only with a blasting machine or blasting switch.

### **Blasting meters**

**18.75** An employer must ensure that only blasting meters designed for use with explosives are used in a blasting operation.

### **Blasting machines**

**18.76** An employer must ensure that only blasting machines designed for use with explosives are used in a blasting operation.

### **Inspecting blasting machine**

**18.77 (1)** An employer must ensure that a blasting machine is inspected at least once every 12 months and that the inspection is conducted in accordance with the manufacturer's specifications.

**(2)** An employer must keep a record of each inspection required by subsection (1) for at least 2 years.

### **Firing in presence of power line**

**18.78** If electric blasting initiation is done near a power line, an employer and a blaster must ensure that any cables used to fire the blast are anchored securely so that they are not thrown into contact with the power line.

### **Firing from a power line**

**18.79 (1)** An employer and a blaster must ensure that an electric blasting circuit is not fired from a power line unless

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- (a) the blast is conducted in underground tunnelling; and
  - (b) the blast is conducted using a blasting switch that is designed for the purpose and is constructed so the blasting switch can be locked only in the "OFF" position.
- (2) An employer and a blaster who intends to use a blasting switch to fire an electric blasting circuit from a power line must ensure that the blasting switch is kept locked and made inaccessible to anyone other than the blaster until it is time to fire the charge.

**After Firing**

**Inspecting blasting area after blast**

**18.80** After a blast, an employer and a blaster must ensure that no person enters or moves about the blasting area until a blaster has thoroughly inspected the blasting area for misfired holes and other hazards and has given permission for work to proceed.

**Waiting period after blast with misfired hole**

**18.81** If it is known or suspected that there is a misfired hole, a blaster must wait until the following applicable waiting period has passed before inspecting the blasting area in accordance with Section 18.80:

- (a) if the charge was fired using a safety fuse assembly, the required waiting period is 30 minutes from the time the last charge was due to explode;
- (b) if the charge was fired using an electric detonator, the required waiting period is 30 minutes from the time the last charge was due to explode or the waiting period recommended by the detonator's manufacturer, whichever is longer;
- (c) if the charge was fired using a method of initiation other than a safety fuse assembly or an electric detonator, the required waiting period is 10 minutes from the time the last charge was due to explode;
- (d) if a charge that was meant to be fired using an electric detonator is aborted, the required waiting period is 30 minutes from the time the last charge was due to explode or the waiting period recommended by the detonator's



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manufacturer, whichever is longer, and all other manufacturer's instructions concerning aborted fires must be followed.

**Removal of loose rocks**

**18.82** An employer must ensure that loose rocks are scaled off the faces of excavations after a blasting operation ends and before other work is started or resumed in the blasting area.

**Blast fired electrically**

**18.83** Immediately after a blast that was fired electrically, a blaster must do both of the following:

- (a) disconnect the lead wires from the blasting machine or blasting switch;
- (b) shunt or short-circuit the lead wires.

**Blast fired using blasting switch**

**18.84** If a blasting switch is used, immediately after the requirements of Section 18.83 have been met, a blaster must pull out and lock the blasting switch.

**Misfires**

**Treating misfired hole**

- 18.85 (1)** An employer and a blaster must ensure that a misfired hole is treated to ensure the removal of all hazards from the misfired hole in a manner that complies with these regulations.
- (2)** While a misfired hole is being treated, an employer must ensure all of the following:
- (a) that the blasting area is fully illuminated;
  - (b) that the work is directly and constantly supervised by a blaster;
  - (c) that the cause of the misfire is investigated;
  - (d) that precautions are taken to prevent an accidental explosion.

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- (3) An employer and a blaster must ensure that a misfired hole is treated at a safe and suitable time and in accordance with any specifications provided by the manufacturer of the detonator.
- (4) Before treating a misfired hole, a blaster must inform all supervisors of all employees in the blasting area of the means that will be used to treat the misfired hole.

**No metallic equipment after misfire**

**18.86** If it is known or suspected that a misfire has occurred, a person must not use metallic equipment in the blasting area until a blaster has authorized the use of metallic equipment.

**Checking burden after misfire**

**18.87** If it is known or suspected that a misfire has occurred and if the method for treating the misfire is reblasting, an employer must ensure that there is sufficient burden before reblasting.

**Seismic Blasting: Unattended loaded holes and delayed blasts**

**18.88** When conducting seismic blasting holes, an employer and a blaster must ensure all of the following:

- (a) loaded holes must not be left unattended, except in isolated locations;
- (b) if the loaded holes are not blasted immediately, they meet all of the following requirements:
  - (i) they have leg wires shunted together and tucked into the hole;
  - (ii) they must be suitably use-identified and covered;
  - (iii) they must be recorded in the blaster's log;
- (c) loaded holes must be blasted within 30 days of loading.

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**Part 19: Confined Spaces**

*[Note: Confined Spaces is currently addressed in Part 12 of the Occupational Safety General Regulations. That Part will be deleted from those regulations and added as Part 19 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 19**

**19.1** In this Part,

"attendant" means a worker who is assigned to do all of the following:

- (i) continuously monitor work in or near the location of a confined space,
- (ii) provide for the safety of a person entering a confined space;

"confined space" means a space that meets all of the following:

- (i) it is fully or partially enclosed,
- (ii) it is not designed or intended for continuous human occupancy,
- (iii) it has limited or restricted access or egress, or an internal configuration, that could make first aid, evacuation, rescue, or other emergency response services difficult to perform,
- (iv) it is or may become hazardous to a person entering it because of its design, construction, location, atmosphere, conditions or the materials or substances in it.

**Application**

**19.2 (1)** Part 19 does not apply to any of the following:

- (a) a development heading in an underground mine;
- (b) a firefighter engaged in structural fire-fighting or rescue, if the firefighter has received adequate training for confined space entry and rescue.

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- (2) When assessing whether a space is or may become hazardous to a person entering it because of its atmosphere under clause 19.1, a person must not take into account the protection afforded to a person through the use of personal protective equipment or ventilation.
- (3) An employer must consider the principles and guidance provided in the latest version of CSA standard CSA Z1006, “Management of Work in Confined Spaces”, when establishing any assessment, procedures and training in applicable workplaces.

**Assessment and written procedures**

- 19.3**
- (1) An employer must review all work areas that meet the definition of a confined space and prepare a list of confined spaces for that business.
  - (2) An employer must ensure that no person enters a confined space until the employer has fulfilled the requirements of this Section and a competent person has provided a written certificate, in accordance with Section 19.4.
  - (3) Where a workplace includes a confined space, the employer must ensure that a person who may be required to enter the confined space has the information necessary to identify it as a confined space.
  - (4) Where at least one confined space has been identified, an employer must establish a written confined space entry procedure that includes all of the following requirements:
    - (a) an assessment of the confined space conducted in accordance with subsection (9) before a person enters the confined space;
    - (b) training on all of the following for a person who may enter a confined space in the course of the person's work, and for a person who may undertake rescue operations with regard to a confined space:
      - (i) proper use of personal protective equipment,
      - (ii) written rescue procedures,

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- (iii) maintaining contact between a person in the confined space and an attendant required under clause 19.7(2)(a) and the means by which the written rescue procedure is initiated in the event of an emergency in the confined space,
- (iv) any limitations on the type of work that can be performed in the confined space, and
- (v) a means of identifying a hazard while in a confined space;
- (c) a process for notifying a person entering a confined space of the specific type of work that may be performed in the confined space;
- (d) a method to be followed by a person entering into, exiting from or occupying the confined space;
- (e) protective equipment that is to be used by every person entering the confined space;
- (f) written emergency procedures to be followed in the event of an accident or other emergency in or near the confined space, on all of the following:
  - (i) a plan for responding to emergencies and preventing or mitigating any illness or injury as a result of potential hazards that might be encountered,
  - (ii) a plan to rescue a victim of an accident or emergency in the confined space,
  - (iii) identification of the necessary resources to implement a plan under subclauses (i) or (ii) effectively, including a determination of whether more than one person is required to be present outside a confined space during its occupancy by any person,
  - (iv) provision for immediate evacuation of the confined space when an alarm is activated or there is any significant, unexpected and potentially hazardous change in the

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- concentration, level or percentage referred to in subsection (9),
- (v) communicating with and training of a person responsible to undertake a plan or procedure,
  - (vi) communicating with other workers in the vicinity, visitors, emergency response services, government authorities, and local community personnel, as appropriate;
  - (g) protective equipment and emergency equipment to be used by a person who undertakes rescue operations in or near a confined space in the event of an accident or other emergency;
  - (h) a written procedure for testing the confined space in an adequate manner, at regular intervals and on a continuous basis, if necessary, to ensure the concentration or level of a hazardous substance or physical agent complies with the limits in clauses (9)(a), (b) and (c);
  - (i) a means of ventilating the confined space to ensure the removal or dilution of all airborne hazardous substances from the confined space.
- (5) An employer must provide the protective equipment and emergency equipment referred to in this Section to all of the following persons:
- (a) a person entering the confined space;
  - (b) a person who may undertake rescue operations in or near the confined space.
- (6) An employer must ensure all of the following:
- (a) a person who enters a confined space is trained at least once every two years in accordance with the procedures set out in clause (4)(b);
  - (b) any person who undertakes rescue operations

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- (i) is trained at least once every two years in accordance with the procedures set out in clause (4)(b); and
  - (ii) holds a valid standard first aid certificate in accordance with Part 4 of these regulations.
- (7) Every person who enters into, exits from or occupies a confined space must follow the written procedures and use the protective equipment and emergency equipment in accordance with this Section.
- (8) An employer must review the confined space entry procedure at least once a year and amend it, as required, in consultation with the committee or representative, if one exists.
- (9) An assessment referenced in clause 4(a) must include all of the following:
  - (a) tests to ensure that the concentration of a chemical substance or a mixture of chemical substances in the confined space does not exceed its occupational exposure limit under Part 2: Occupational Health or 10% of its lower explosive limit, if the level of a chemical substance or a mixture of chemical substances may constitute a hazard;
  - (b) tests to ensure that the level of the physical agent in the confined space is not hazardous;
  - (c) tests to ensure that the level of oxygen in the atmosphere in the confined space is not less than 19.5 % and not more than 22.5 %, unless the employer can demonstrate that an unsafe oxygen level is not possible in the circumstances;
  - (d) a determination of whether the concentrations, levels or percentages referred to in clauses (a), (b) and (c) can be maintained during the period of proposed occupancy of the confined space;
  - (e) confirmation that
    - (i) any liquid in which the person may drown or any free flowing solid in which a person may become entrapped has been removed from the confined space, or

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- (ii) work practices have been established that specifically address the presence of the liquid or solid;
  - (f) confirmation that entry of any liquid, free flowing solid or hazardous substance into the confined space that could endanger the health or safety of a person has been prevented by at least one of the following:
    - (i) a secure means of disconnection,
    - (ii) the fitting of blank flanges or the implementation of a double block and bleed written procedure established by the employer;
    - (iii) similar positive actions;
  - (g) confirmation that a machine, equipment, tool or electrical installation that presents a hazard to a person entering into, exiting from or occupying the confined space has been locked out;
  - (h) confirmation that the opening for entry into and exit from the confined space is sufficient to allow safe passage of a person who is using personal protective equipment or emergency equipment.
- (10) Where there is no possibility that a hazard identified in clauses (9) (a), (b) and (c) may occur, the requirements of clause (4) (h) do not apply.
- (11) An assessment in subsection (9) must be performed and a record made by a competent person designated by the employer.
- (12) The competent person referred to in subsection (9) must, when performing the tests required under clauses (9) (a), (b) and (c), use appropriate and properly calibrated instruments that have been functionally tested and maintain a written record of the functional and calibration tests.
- (13) An employer must keep the written confined space entry procedure required under subsection (4), including the assessment, at the place of business of the employer nearest to the workplace at which the confined space is located.



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- (14) An employer must make a copy of the confined space entry procedure available to all persons involved in the entry of a confined space and review it with all such persons before engaging in any work involving a confined space.

**Certification of confined space conditions**

- 19.4 (1)** After performing the tests required in clauses 19.3 (9) (a), (b) and (c), a competent person must certify, in writing, that the conditions tested in the confined space are likely to be maintained within a predicted and recorded range for the entire time the certification is valid.
- (2)** The certification in subsection (1) must include all of the following:
- (a) the signature of the competent person;
  - (b) the date and time of when the tests were performed;
  - (c) the type of work that
    - (i) can be performed in the confined space, and
    - (ii) is explicitly banned in the confined space;
  - (d) the means by which the work is to be performed;
  - (e) the expiry date and time of the certification;
  - (f) a record of the tests performed and of the test results.
- (3)** The certification issued under subsection (1) must meet all of the following requirements:
- (a) it must not be valid for longer than 24 hours after the time the tests required by clauses 19.3(9) (a), (b) and (c) were performed; and
  - (b) it must be updated as necessary by a competent person to ensure the ongoing safety of the workers inside the space;
  - (c) it must be re-certified when any of the following conditions exist:

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- (i) a change in the work crew,
  - (ii) a change in the work activity within the confined space,
  - (iii) after each shift change,
  - (iv) after a change of the responsible supervisor,
  - (v) if circumstances at the workplace or confined space change in a way that poses a risk to a person's safety and health.
- (4) An employer must post a copy of the currently valid certification required in subsection (1) at the entrance to the confined space for the duration of the confined space occupancy.
- (5) An employer must maintain a copy of the certification required in subsection (1) for two years from the date of certification.

**Purging and further testing**

**19.5** If the tests required in clauses 19.3(9) (a), (b) and (c) indicate that the concentration level or percentage referred to in those clauses cannot be complied with, an employer must do all of the following:

- (a) ensure that, where reasonably practicable, the confined space is purged until concentrations are below the hazards referred to in clauses 19.3(9) (a) to (d); and
- (b) after the purging, ensure that the tests required under subsection 19.3(9) are conducted again.

**Response to hazardous condition**

- 19.6 (1)** An employer must ensure that a person does not enter or remain in a confined space if the tests conducted under clause 19.3(9) (a) indicate that a concentration of a chemical substance or mixture of chemical substances in the confined space exceeds 10% of the lower explosive limit of the chemical substance or mixture of chemical substances.
- (2) If the level of oxygen in a confined space is more than 22.5% and a person is to work in the confined space, an employer must ensure that the confined space does not contain any substance which would be classified

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as flammable and combustible material or as dangerously reactive material under the Controlled Products Regulations made under the *Hazardous Products Act* (Canada).

- (3) Despite subsection (1), if the tests conducted under clause 19.3(9) (a) indicate that the concentration of a chemical substance or mixture of chemical substances in the confined space exceeds, or is likely to exceed, 10% of the lower explosive limit, measured at atmospheric conditions containing 20.9% oxygen, of the chemical substance or mixture of chemical substances and cannot be lowered below that prescribed threshold level, a person may enter the confined space if the employer ensures all of the following:
- (a) the atmosphere is confirmed inert by a competent person after the performance of appropriate tests;
  - (b) the person is using appropriate protective equipment when working in the confined space.

**Protective equipment and security measures**

- 19.7** (1) An employer must ensure that all of the following are provided as close as reasonably practicable to the entrance to the confined space before a person enters the confined space:
- (a) all protective equipment and emergency equipment identified under subsection 19.3(4); and
  - (b) adequate rescue equipment including, where appropriate, a yoke and a means to lift an unconscious person.
- (2) When a person enters a confined space, an employer must ensure that a competent person
- (a) is in attendance in the immediate vicinity of the confined space;
  - (b) has a means of adequate communication with a person inside the confined space;

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- (c) is provided with a means of summoning assistance and initiating the rescue procedure in accordance with the requirements of 19.3 (4) (f) in the event of an emergency;
  - (d) is adequately trained in the emergency response procedure in clause 19.4(f); and
  - (e) maintains a record of who is in the confined space.
- (3) An employer must do all of the following, where reasonably practicable and appropriate to the conditions of the confined space:
  - (a) provide a person entering into and occupying a confined space with a full body harness;
  - (b) ensure that the full body harness provided under clause (a) is used;
  - (c) where attaching a life line does not present a hazard, ensure that an attached life line is
    - (i) securely fastened to an anchor point, and
    - (ii) controlled by the competent person referred to in subsection (2).
- (4) An employer shall ensure that the full body harness referred to in subsection (3) is selected appropriately to complement the rescue equipment and complies with the latest version of CSA standard CSA 259.10, "Full Body Harnesses".

**Respiratory protective equipment**

- 19.8 (1)** An employer must provide all of the following to a person who enters a confined space:
- (a) appropriate respiratory protective equipment when the concentration of a chemical substance or a mixture of chemical substances in a confined space is hazardous to the health or safety of a person;

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- (b) positive pressure respiratory protective equipment when the concentration of oxygen is less than 19.5 %.
- (2) An employer must ensure that the respiratory protective equipment referred to in clause (1)(b) complies with Part 6: Personal Protective Equipment and at least one of the following requirements:
  - (a) has an air line and an independent 5-minute supply of air;
  - (b) is self-contained and equipped with an audible alarm that sounds when the air supply has diminished to
    - (i) 20% of the capacity of the unit, or
    - (ii) a 5-minute reserve.

**Hazard of electrical shock**

**19.9** If there is a hazard of electrical shock in a confined space, an employer must ensure that electrical equipment taken into the confined space meets all of the following conditions:

- (a) it is battery operated;
- (b) it is double insulated;
- (c) it is bonded to ground and not exceeding 30 v and 100 volt-amps;
- (d) it is equipped with a ground fault circuit interrupter of the Class A type that
  - (i) complies with the latest version of CSA standard CSA C22.1, "Canadian Electrical Code Part 1", Safety Standard for Electrical Installations"; and
  - (ii) is tested before each use.

**Warning signs and barricades**

**19.10** An employer must ensure that adequate warning signs and barricades are installed or erected to protect a person working as part of a confined space entry, if a hazard from any form of traffic exists.

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**Part 20: Surface Mine Workings**

*[Note: Surface Mine Workings is currently addressed in Part 15 of the Occupational Safety General Regulations. That Part will be deleted from those regulations and added as Part 20 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 20**

**20.1** In this Part,

"activities" mean grubbing, removing overburden, drilling, blasting, removing material from working face, crushing and processing;

"overburden" mean all trees, clay, earth, sand, gravel, loose rock or soil overlying a mineral deposit, archaeological site, or other underground feature;

"working face" means an area in a surface mine where consolidated or unconsolidated material is worked.

**Marking location and control of entry**

**20.2** An employer must ensure that a surface mine meets all of the following requirements:

- (a) it is marked and identified in an adequate manner; and
- (b) it is securely protected from inadvertent entry by a person where any of the following conditions exist:
  - (i) the surface mine constitutes a hazard by reason of its depth,
  - (ii) the approaches to or openings of the surface mine are not readily visible,
  - (iii) the hazard caused by the surface mine is greater than the hazard caused by natural topographical features within 600 m of the working face or wall.

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**Roadways and vehicles**

- 20.3 (1)** An employer must ensure that a roadway at a surface mine used for the purpose of moving material to, from, or within a surface mine is designed, constructed and maintained to do all of the following:
- (a) minimize hazards caused by slipping or skidding of vehicles;
  - (b) enable vehicles to pass each other safely, where the vehicles are required to pass each other, with adequate width to accommodate the proposed traffic, specifically:
    - (i) at least 2.5 times the width of the widest powered mobile equipment expected on the road where dual lane traffic exists, and
    - (ii) at least 2 times the width of the widest powered mobile equipment expected on the road where single lane traffic exists;
  - (c) ensure that grades do not exceed the design capacity of vehicles that are used on the roadway.
- (2)** An employer must do all of the following respecting traffic control procedures:
- (a) establish written traffic control procedures for the safe conduct of vehicular traffic on a haul road;
  - (b) ensure that employees are trained in and comply with the traffic control procedures required in clause (a).

**Shoulder barriers**

- 20.4 (1)** An employer must ensure that an adequate shoulder barrier is designed, constructed and maintained to prevent vehicles from inadvertently going off the road at the edge of a regularly used roadway in a surface mine that has a drop-off greater than 3 m.
- (2)** The height of the shoulder barrier required in subsection (1) must be at least one half (1/2) of the diameter of the largest wheel of the equipment to be used on the roadway.

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### **Grade on roadways**

**20.5** An employer must ensure that the grade on roadways in a surface mine does not exceed 12% on any 300 m portion of the roadway unless all of the following requirements are met:

- (a) a written procedure for handling vehicle runaways has been prepared;
- (b) where reasonably practicable, runaway lanes, retardation barriers or vehicle modifications are adequately in place;
- (c) the employer ensures that the vehicle manufacturer's specifications are followed.

### **Pedestrians**

**20.6** An employer must ensure that every person who is a pedestrian at a surface mine in an area of operating mobile equipment wears high-visibility apparel that is in accordance with all of the following:

- (a) for the selection, use and care of the apparel, the latest version of CSA standard CSA Z96.1, "Guideline on selection, use and care of high-visibility safety apparel";
- (b) for the design and performance of the apparel, the latest version of CSA standard CSA Z96, "High-visibility safety apparel".

### **Safe work procedure for dumping**

- 20.7** (1) An employer must establish a written safe work procedure that contains adequate precautions to ensure that a vehicle does not overturn when material excavated from a surface mine is dumped from a vehicle onto a stockpile or a waste dump.
- (2) An employer must ensure that employees are trained and comply with the procedure required under subsection (1).

### **Overburden**

**20.8** An employer must ensure that unconsolidated overburden at a surface mine meets all of the following requirements:



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- (1) the unconsolidated overburden is moved an adequate distance away from the edge of the surface mine to prevent the overburden from falling into the surface mine;
- (2) if the unconsolidated overburden is less than 7 m away from the edge of a surface mine that is greater than 1.2 m deep and in which a person is or may be present, unconsolidated overburden is
  - (a) approved by an engineer to ensure that the distance is adequate to prevent the overburden from falling into the surface mine; and
  - (b) sloped to its angle of repose.

**Periods of inactivity at surface mine**

**20.9** An employer must ensure that the work face of unconsolidated material in a surface mine that is being worked by means of powered mobile equipment is sloped to a maximum grade of one unit of vertical rise for every equal unit of horizontal run during periods of inactivity that exceed a period of 4 months.

**Notice of operation**

- 20.10 (1)** Except as set out in subsection (2), when activities in a surface mine are initially started, or when activities are resumed after a cessation of operation of 4 months or more an employer must do all of the following:
- (a) notify the Director in writing of the intention to begin or resume operations in the surface mine at least 2 weeks before the operations are to begin or resume;
  - (b) specify in the written notice to the Director the geographic location of the surface mine, including a map or the Global Positioning System (GPS) coordinates of the location of the mine;
  - (c) state the estimated start-up date and anticipated period of operation.
- (2) Notification required under subsection (1) does not apply to the movement of materials from stockpiles.

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**Inspections**

- 20.11 (1)** No person may begin work at or near a working face at a surface mine other than at a stockpile, until a competent person inspects the working face or wall to ensure that it is adequate.
- (2)** The competent person referred to in subsection (1) must do all of the following:
- (a)** record the results of the inspection required by subsection (1) in a daily examination record book and must record all unusual occurrences or hazards;
  - (b)** read the record in the daily examination and record book made for the previous shift and sign it before work at the face begins on the next shift.
- (3)** An employer must make available the daily examination and record book referred to in subsection (2) on request to the committee or the representative, if one exists.

**Maximum height of wall or working face**

- 20.12 (1)** Subject to subsection (3), where a wall or working face of a surface mine is greater than 20 m in height, an employer must ensure that the surface mine is designed, constructed and maintained with the wall or working face benched and having a vertical rise not greater than 20 m for every horizontal run that is at least 8 m in length.
- (2)** Where a wall or working face of a surface mine is 20 m in height or less and the wall or working face cannot be excavated in a safe manner, an employer must ensure that the wall or working face is benched to ensure the work can be performed in an adequate manner.
- (3)** An employer must ensure that a wall or working face of a surface mine that is greater than 20 m in height is benched in accordance with subsection (1) unless one of the following requirements is met:
- (a)** when work is required to be performed within a radius of 1.3 times the height of the wall or working face, a safe work procedure is established to ensure the work is performed adequately, and an engineer has certified all of the following:

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- (i) the wall or working face height as adequate,
  - (ii) the adequacy of the safe work procedure in clause (a);
- (b) subject to subsection (4), material extracted is removed by means of powered equipment located at the top of the wall.
- (4) An employer must ensure that no material is removed in accordance with clause (3)(b) where a person is present in a surface mine in an area where they could be struck by an object dislodged by the equipment.
- (5) An employer must ensure that an employee that works within a radius of 1.3 times the height of the wall or working face is trained and complies with the safe work procedure required under clause 3(a).

**Work procedures for unconsolidated materials**

- 20.13 (1)** An employer must ensure that the vertical height of unconsolidated material that is being worked or removed at the working face by means of powered mobile equipment, is no more than 1.5 m above the maximum reach of the equipment being used to work or remove the unconsolidated material, unless the work is done in accordance with written specifications and a written safe work procedure certified by an engineer, following consultation with the committee or representative, if one exists.
- (2)** An employer must ensure that unconsolidated material in a surface mine that is being worked by means other than powered mobile equipment meets at least one of the following requirements:
- (a) the working face is sloped at its angle of repose;
  - (b) the vertical portion of the working face does not exceed a maximum grade of one unit of vertical rise for every equal unit of horizontal run;
  - (c) the work is performed in accordance with written specifications and a written safe work procedure certified by an engineer, following consultation with the committee or representative, if one exists.

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- (3) An employer must ensure that no person comes closer than 1.3 times the height of the working face of unconsolidated material that is being worked unless the employer ensures at least one of the following:
  - (a) the working face is sloped at its angle of repose;
  - (b) the working face is benched to limit the vertical height of the working face to no more than 1.2 m and the grade above the horizontal portion does not exceed one unit of vertical rise for every equal unit of horizontal run;
  - (c) the work is performed in accordance with written specifications and a written safe work procedure certified as adequate by an engineer, following consultation with the committee or representative, if one exists.
- (4) An employer must ensure that undercutting or undermining of unconsolidated material at the working face of a surface mine by means of powered mobile equipment is performed in accordance with all of the following:
  - (a) it is restricted to the depth of the bucket of the powered mobile equipment; and
  - (b) it is permitted only under all of the following conditions:
    - (i) the approach by the operator of the powered mobile equipment is at a 90° angle to the working face;
    - (ii) the work is performed in accordance with specifications and a written safe work procedure certified by a competent person in consultation with the committee, or representative, if one exists.

**Work procedures for consolidated materials**

- 20.14** An employer must ensure that consolidated material at the face height of a wall less than 20 m that is being worked by means of powered mobile equipment meets at least one of the following:

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- (a) the working face extends no more than 1.5 m above the maximum reach of the powered mobile equipment in use;
- (b) the work is performed in accordance with written specifications and a written safe work procedure certified by an engineer, following consultation with the committee or representative, if one exists.

**Part 25: Occupational Diving**

*[Note: The stand-alone Occupational Diving Regulations will be repealed and replaced with Part 25 of the Workplace Health and Safety Regulations.]*

**Definitions for Part 25**

**25.1** In this Part,

"ADS" or "atmospheric diving system" means a diving system in which the ambient pressure for the person using the system is normal atmospheric pressure at or near 101 kPa, including a 1 person submarine and the atmospheric diving system component of a lock-out submersible;

"bailout system" means an independent breathing-gas supply carried by the diver, of sufficient quantity to return the diver to the surface, diving bell, or emergency supply in the event of a malfunction of the primary gas supply;

"bottom time" means the total elapsed time, rounded to the next whole minute, from the time a descending diver leaves the surface to the time the diver begins final ascent;

"breathing mixture" means a mixture of gases or pure oxygen intended for human respiration;

"breathing mixture supply line" means a hose that is part of an umbilical bundle that supplies breathing mixture to a diver;

"certificate of medical fitness" means a certificate signed by a physician that certifies that a person is medically fit to perform their work;

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"compressed gas" means a gas or a gas mixture that has an absolute pressure greater than or equal to 280 kPa at 20 °C;

"compression chamber" means a pressurized chamber used for diving that is suitable for human occupancy at internal pressures greater than atmospheric pressure;

"contaminated environment" means a workplace that contains a chemical, biological, or radioactive material in sufficient concentration that if a person ingests, absorbs, adsorbs, or inhales any quantity of it, it will likely endanger the person's health and safety;

"deep dive" means any method of dive to a depth greater than 50 m;

"dive base" means the surface location used for conducting a dive;

"dive site" means the area in which a dive is conducted, consisting of the dive base, the underwater work site and any area in between them;

"dive team" means all divers, diving supervisors, standby divers, diver's tenders, ADS operators and SCC attendants who participate in a dive or are required to participate in a dive under Section 25.5;

"diver" means a competent person who works underwater for compensation;

"diver's tender" means a competent person who assists a diver by monitoring the diver's equipment, communicating with the diver, and otherwise monitoring the diver's health and safety;

"diving personnel" means divers, diving supervisors, and diver's tenders, among other personnel at the dive site supporting the diving operation;

"diving supervisor" means a competent person, designated by an employer under Section 25.4, having complete responsibility for a diving operation, including responsibility for the safety and health of all diving personnel;

"dynamically positioned vessel dive" means a dive conducted from a vessel being held in position through the use of its propulsion system;

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"emergency services dive team" means a dive team trained and equipped to perform rescues during a health or safety emergency;

"hyperbaric chamber" means a pressure vessel and associated equipment designed for the purpose of subjecting humans to greater than atmospheric pressures in the treatment of pressure-related ailments;

"in-line gas blender" means a device that continuously mixes and proportions gases at a dive site to produce a breathing mixture;

"lifeline" means a rope that

- (i) is secured to a diver at one end and to the dive base or a float at the surface or to an SCC or a lock-out submersible at the other end, and
- (ii) can be used to retrieve a diver;

"lifeline system" means an assembly of strength components consisting of an anchoring device, a lifeline, connecting components, and a full-body harness used to tether a diver securely to a vessel or structure but that is not designed for or appropriate for use as a means of fall protection;

"liveboating" means a dive conducted while a diver is tethered directly to a vessel under way;

"lockout submersible" means a self-propelled, tethered or untethered submersible compression chamber from which a diving operation can be carried out, and which has a separate one-atmosphere chamber from which the submersible is piloted;

"physician" means a person who is legally qualified to practice medicine in Nova Scotia, and is competent in hyperbaric medicine;

"rebreather" means a breathing apparatus that recycles the useable components of a diver's exhaled breath for the diver to breathe;

"saturation chamber" means a compression chamber used for a saturation dive that is equipped to permit divers to remain at greater than atmospheric pressure for an unlimited period of time;

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"saturation dive" means a technique of diving that equalizes the pressure of inert gas in the body with ambient pressure and allows extended periods of bottom time without requiring additional decompression time;

"SCC" or "submersible compression chamber" means a compression chamber that includes the SCC component of a lock-out submersible and meets all of the following requirements:

- (i) it has an internal pressure of greater than the air pressure at the dive base,
- (ii) it is intended to be submerged,
- (iii) it is designed to transport divers at pressures greater than atmospheric pressure from the surface to an underwater work site and back,

"scientific dive" means a dive conducted to collect specimens or data for scientific use in a program managed by an educational or research institute but does not include the following:

- (i) a dive conducted to construct, excavate, salvage, demolish, destroy, maintain, inspect or repair underwater structures,
- (ii) a dive conducted to collect organisms for consumption or commercial use;

"SCUBA" means self-contained underwater breathing apparatus;

"stage" means a cage, basket, platform or other device in or on which a diver may be lowered or raised from a worksite, but does not include an SCC, an ADS, or a lock-out submersible;

"standard first aid certificate" means a certification of successful completion of a first aid course issued by an approved organization that consists of at least 13 hours of instruction;

"standby diver" means a diver who is adequately dressed and who is trained and equipped to operate at the depths and in the circumstances in



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which the submerged diver is operating, and whose primary function is to render assistance to the submerged diver in the event of an emergency;

"surface-supplied dive" means a diving technique in which a diver is supplied from the dive location with a breathing mixture by way of an umbilical;

"umbilical" means a composite hose and cable or separate hoses, cables, lines or ropes, extending from the surface to the diver or to the pressure vessel of occupancy by the diver, that supplies breathing gas, power, heat, pneumofathometer, communications, and a strength member as required;

"underwater work site" means a below-surface location at which work conducted during a dive is performed;

"water control structure" means a structure designed to hold back or control water and includes a dam, a head gate, a stop log, a turbine intake gate, a turbine outfall gate, a pump intake gate and a pump discharge gate;

"wet bell" means a stage that is equipped with a dry upper compartment;

"work zone" means a zone required by Section 25.70 that is used to designate specific areas of a dive base when a dive is conducted in a contaminated environment.

**Application of this Part**

**25.2** This Part applies to all dives conducted at a workplace, except the following:

- (a) a dive using only a snorkel;
- (b) a scientific dive conducted by an organization that is a member of the Canadian Association for Underwater Science (CAUS), in accordance with the most recent version of "Standard of Practice for Scientific Diving", published by the Canadian Association for Underwater Science.

**Duties of the parties**

**25.3 (1)** Every person at a dive site must ensure they perform all duties and meet all requirements of these regulations if

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- (a) the duties or requirements are placed directly upon them; or
  - (b) the duties and requirements are not placed directly upon them, they have the greatest degree of control over the matters that are the subject of the duties or requirements.
- (2) Every person at a dive site must ensure that all of the following persons meet all requirements of these regulations:
  - (a) a person in their employ;
  - (b) a person under their supervision; or
  - (c) a person with whom they have a contract.
- (3) A diver must not dive if any of the regulatory duties or requirements are not met, regardless of upon whom the regulations placed the duty or requirement.

**Diving supervisor**

- 25.4** (1) An employer must designate, in writing, 1 competent person to be the diving supervisor for a dive site at any one time.
- (2) A diving supervisor must supervise all dives conducted at a dive site and ensure that the Act and these regulations are complied with before a dive, during a dive, and after a dive.
  - (3) A diving supervisor must be at the dive site for which they are the supervisor while a dive is being conducted.
  - (4) A diving supervisor must not dive except in the following circumstances:
    - (a) when it is necessary to do so in a health or safety emergency;
    - (b) when the diving supervisor has delegated the duties of the diving supervisor in writing to another person who is present at the dive site and who is competent to perform the duties of a diving supervisor.

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**Dive team**

- 25.5 (1)** Before a dive is conducted, a dive team must be present and composed of the number of members required by this Section.
- (2)** Except for a dive that is specifically provided for in subsection (3), (4), (5), (6) or (7), a dive team must consist of the following minimum members:
- (a)** 1 diving supervisor;
  - (b)** 1 diver's tender;
  - (c)** 1 standby diver;
  - (d)** 1 diver.
- (3)** Except as provided in subsections (4) and (5), a dive team for a SCUBA dive or a surface-supplied dive must consist of a minimum of 3 members as follows:
- (a)** 1 diving supervisor who also acts as a standby diver or as a diver's tender;
  - (b)** 1 diver's tender or standby diver, whichever position is not performed by the diving supervisor under clause (a);
  - (c)** 1 diver.
- (4)** A dive team for a SCUBA dive conducted for seafood harvesting, in which the divers are in immediate proximity to each other, must consist of a minimum of 3 members as follows:
- (a)** 1 diving supervisor who also acts as a diver's tender;
  - (b)** 2 divers.
- (5)** A dive team for a surface-supplied deep dive without an SCC must consist of a minimum of 5 members as follows:
- (a)** 1 diving supervisor;

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- (b) 1 standby diver;
  - (c) 1 diver's tender;
  - (d) 1 diver;
  - (e) 1 hyperbaric chamber operator.
- (6) Except as provided in subsection (7), a dive team for a dive using an SCC must consist of a minimum of 4 members as follows:
- (a) 1 diving supervisor who also acts as a standby diver or diver's tender;
  - (b) 1 standby diver or diver's tender;
  - (c) 1 diver;
  - (d) 1 SCC attendant.
- (7) A dive team for a deep dive using an SCC must consist of a minimum of 6 members as follows:
- (a) 1 diving supervisor;
  - (b) 1 diver's tender;
  - (c) 1 standby diver;
  - (d) 1 diver;
  - (e) 1 SCC attendant;
  - (f) 1 hyperbaric chamber attendant.

**Standby diver**

- 25.6 (1)** A standby diver must not dive except in a health or safety emergency.
- (2)** A standby diver must wear and have all appropriate diving and communication equipment necessary for the depths and circumstances

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planned for a dive they are participating in and the equipment must be checked before the dive so that the standby diver can quickly perform a rescue in a health or safety emergency.

**Submersible compression chamber attendant**

- 25.7** (1) An SCC attendant who is required as a member of a dive team must be assigned to attend a diver and the assigned SCC attendant must be in the SCC when the diver is in the water.
- (2) An SCC attendant must
- (a) be trained to conduct a rescue;
  - (b) be dressed to dive;
  - (c) have the appropriate diving equipment and communication equipment for the depth and circumstances of the dive checked to ensure they operate adequately and are readily available.
- (3) An SCC attendant must not dive except in a health or safety emergency.
- (4) An SCC attendant must monitor the health and safety of a diver who is conducting a dive from the SCC and must be ready to rescue the diver in a health or safety emergency.

**Certificate of medical fitness**

- 25.8** (1) Except for a person who has had a pressure-related ailment, a person may act as a diver only if they meet all of the following medical fitness requirements:
- (a) during the 24 months immediately before the dive or during such shorter period of time before a dive as is recommended by their physician, they have undergone a medical examination to determine their medical fitness to dive;
  - (b) they have a certificate of medical fitness from the physician who performed their most recent medical examination required by clause (a) stating that they are fit to dive and what limitations, if any, are placed on their medical fitness to dive.

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- (2) A person who has had a pressure-related ailment may only act as a diver if they meet all of the following medical fitness requirements:
  - (a) after the date the pressure-related ailment was diagnosed and during the 24 months immediately before the dive, they have undergone a medical examination to determine their medical fitness to dive;
  - (b) they have a certificate of medical fitness from the physician who performed their most recent medical examination required by clause (a) stating that they are fit to dive and what limitations, if any, are placed on their medical fitness to dive.
- (3) A person may act as an ADS operator only if they meet all of the following medical fitness requirements:
  - (a) during the 24 months immediately before a dive or during such shorter period of time before a dive as is recommended by their physician, they have undergone a medical examination to determine their medical fitness to operate an ADS;
  - (b) they have a certificate of medical fitness from the physician who performed their most recent medical examination required by clause (a) stating that they are fit to operate an ADS and what limitations, if any, are placed on their medical fitness to operate an ADS.
- (4) A person may act as an SCC attendant only if they meet all of the following medical fitness requirements:
  - (a) during the 24 months immediately before a dive or during such shorter period of time before a dive as is recommended by their physician, they have undergone a medical examination to determine their medical fitness to perform the duties of an SCC attendant and operate an SCC;
  - (b) they have a certificate of medical fitness from the physician who performed their most recent medical examination required by clause (a) stating that they are fit to perform the duties of an SCC attendant and operate an SCC and what limitations, if any, are

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placed on their medical fitness to perform the duties of an SCC attendant and operate an SCC.

- (5) A certificate of medical fitness must include the date of the medical examination and the examining physician's name, address and signature.

**Certificate of medical fitness confirmed and available**

- 25.9** (1) A diver, ADS operator or SCC attendant must have a copy of their most recent certificate of medical fitness available for inspection by an officer and must produce the original certificate within 24 hours of receiving a request from an officer to do so.
- (2) Before permitting a diver, ADS operator or SCC attendant to participate in a planned dive or dives, an employer and a diving supervisor must ensure that their certificate of medical fitness
- (a) is confirmed as valid by the diving supervisor; and
- (b) clears the diver, ADS operator or SCC attendant to do any work they may be called upon to perform during a dive.

**Medical examination standard**

- 25.10** A medical examination required by subsection 25.8 (1), (2), (3) or (4) must be carried out by a physician considering the factors listed in the "Occupational Diver's Medical Fitness Examination", of the latest version of CSA standard Z275.2, "Occupational Safety Code for Diving Operations".

**Person who is unfit must not dive**

- 25.11** A diver, ADS operator or SCC attendant who is ill, fatigued, impaired, injured or otherwise unfit to dive must not dive and must notify the diving supervisor of their condition.

**Competency of diving supervisor, diver and diver's tender**

- 25.12** Each diving supervisor, diver and diver's tender must meet the competency requirements set out in the latest version of CSA standard Z275.4, "Competency Standard for Diving, Hyperbaric Chamber and Remotely Operated Vehicle Operations" for their position and the depths and circumstances of the dive.

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**First aid certificate**

- 25.13 (1)** Despite the requirements of Section 4.3 of Part 4: First Aid, all members of a dive team must hold a valid standard first aid certificate before a dive is conducted at a dive site.
- (2)** A member of a dive team must have a copy of their standard first aid certificate available for inspection by an officer and must produce the original certificate within 24 hours of receiving a request from an officer to do so.

**Oxygen therapy training**

- 25.14** All members of a dive team must be trained in the use of oxygen therapy equipment that is provided at a dive site.

**Photo identification at dive site**

- 25.15** All members of a dive team must have photo identification available at a dive site.

**Dive plan and emergency arrangements**

- 25.16 (1)** Before a dive is conducted at a dive site, a written dive plan that meets the requirements of this Section must be prepared for the dive.
- (2)** Except for a dive plan for a dive conducted by an emergency services dive team engaged in a health or safety emergency rescue operation, the dive plan must be tailored to the specific dive site at which the dive will be conducted.
- (3)** The dive plan must be prepared in consultation with the dive team for the dive.
- (4)** The dive plan must include all of the following for every dive covered by the dive plan that is conducted at a dive site:
- (a)** a description of the tasks to be performed at the dive site and how they are to be performed;
  - (b)** work procedures for each type of dive in which a diver or ADS operator is likely to be engaged at the work site, including the diving equipment to be used in each type of dive;
  - (c)** estimated and maximum time to be spent at each depth;



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- (d) decompression tables and procedures to be used;
- (e) procedures for the identification and control of any known or anticipated health or safety hazards at the dive site;
- (f) method of communication to be used in accordance with Section 25.27;
- (g) a list of industrial plants and water control facilities in the immediate area of the dive site;
- (h) instructions for getting medical assistance in a health or safety emergency, including instructions for contacting a physician with whom arrangements have been made under Section 25.20;
- (i) emergency procedures for evacuating an ill or injured diver or ADS operator from the dive site;
- (j) emergency procedures for responding to a loss of any communication required by these regulations;
- (k) emergency procedures for responding to a diving equipment malfunction;
- (l) emergency procedures for responding to hazardous weather or water conditions;
- (m) emergency procedures for aborting a dive;
- (n) emergency procedures for responding to any difficulties in keeping the dive base stationary;
- (o) emergency procedures for accessing a back-up SCC required by Section 25.54; and
- (p) emergency procedures for accessing a back-up ADS required by Section 25.57.

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### **Briefing dive team**

**25.17** Before a planned dive or dives are conducted, the diving supervisor for the planned dive or dives must brief the rest of the dive team on all of the following for the planned dive or dives:

- (a) the dive plan;
- (b) the tasks to be performed;
- (c) the estimated time and maximum time to be spent at each depth;
- (d) the maximum depth to be reached;
- (e) the decompression procedures to be used;
- (f) the planned location of all divers;
- (g) the communication signals to be used;
- (h) if a dive in a contaminated environment is planned, the contaminant management plan required by Section 25.71.

### **Maximum time of dive as in dive plan**

**25.18** Except in a health or safety emergency, a diver must not remain at any depth longer than the maximum time set out in the dive plan for that depth in the dive.

### **List of hyperbaric chambers and hospitals**

**25.19** An up-to-date list must be kept at a dive site that contains all of the following:

- (a) the location of nearby hyperbaric chambers and a contact telephone number for each location;
- (b) the name, location and telephone number of the hospital or emergency care facility nearest the dive site.

### **Arrangements with physician for health or safety emergency**

**25.20 (1)** Written arrangements must be made with 1 or more physicians, as necessary, so that any medical advice or support that may be required is available in a health or safety emergency for any of the following:

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- (a) a deep dive that is conducted without the use of an ADS;
  - (b) a dive in which the total time required for in-water decompression is greater than 10 minutes and decompression occurs at a depth greater than 3.5 m.
- (2) An effective means of communication between a physician and a diving supervisor must be available during a dive for which arrangements with a physician are required under subsection (1) and for at least 48 hours after the dive is completed.

**Decompression**

- 25.21** (1) Decompression must be conducted in accordance with the latest version of CSA standard CSA Z 275.2, “Occupational Safety Code for Diving Operations” using recognized decompression tables.
- (2) Decompression tables and procedures to be used in a dive must be kept at the dive site.

**Observation period after dive**

**25.22** A diver who has completed a dive in which decompression is used for a total in-water decompression time greater than 10 minutes and at a depth greater than 3.5 m, must remain near a hyperbaric chamber under the observation of a competent person for the following time periods:

- (1) at least 1 hour immediately after a dive other than a saturation dive;
- (2) at least 2 hours immediately after a saturation dive.

**Air travel after dive**

- 25.23** (1) A diver who has conducted a dive in which decompression is not used must not fly in an aircraft with a cabin pressure lower than the equivalent of 300 m above the dive site where the dive was conducted for at least 12 hours immediately after the dive.
- (2) A diver who has completed a dive in which decompression is used for a total in-water decompression time greater than 10 minutes and at a depth greater than 3.5 m must not fly in an aircraft with a cabin pressure lower than the equivalent of 300 m above the dive site where the dive was conducted for at least 24 hours immediately after the dive.

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- (3) Subsections (1) and (2) do not apply if emergency evacuation of the diver is required.

**Care of diver with pressure-related ailment**

**25.24 (1)** A diver, ADS operator or SCC attendant who shows any symptom of a pressure-related ailment or who requires therapeutic recompression for any reason must be immediately given first aid and a physician noted in Section 25.20 (1) must be notified of the situation.

- (2) A diver who is placed in a hyperbaric chamber to treat a diving ailment must stay in the hyperbaric chamber until a physician approves the diver's removal from the chamber.

- (3) If a diver with a diving ailment is transported by aircraft, all of the following must be met:

- (a) the flight altitude must be as prescribed by a physician;
- (b) oxygen must be available for therapeutic purposes during the flight;
- (c) the diver must be accompanied by a person, other than the pilot or co-pilot, who is competent to do all of the following:
  - (i) administer oxygen,
  - (ii) monitor the diver's condition,
  - (iii) recognize changes in the diver's condition,
  - (iv) initiate adequate intervention.

**Dive site**

**25.25 (1)** An adequate location must be selected for a dive site.

- (2) Buoys, lights, flags, lamps, barriers or placards must be placed and displayed to define the boundaries of a dive site.

- (3) A notice clearly setting out the boundaries of a dive site must be posted on the bridge of each vessel at the dive site.

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- (4) Only equipment to be used in connection with a dive may be brought within the boundaries of a dive site.

**Dive base**

**25.26 (1)** A dive base must meet all of the following requirements:

- (a) it must be adequate to support all persons and equipment involved in the diving operation;
- (b) it must be located at one of the following, or at another similar location:
  - (i) onshore,
  - (ii) on a stable platform,
  - (iii) on an adequate and seaworthy boat or watercraft;
- (c) it must be of sufficient size to accommodate all persons and equipment that are to be at the dive base;
- (d) it must be equipped with all of the following:
  - (i) for a deep dive, sufficient oxygen for use for therapeutic purposes in a health or safety emergency,
  - (ii) if the dive plan requires therapeutic oxygen to be present, sufficient oxygen for use for therapeutic purposes in a health or safety emergency,
  - (iii) if temperature conditions make it necessary, a climate-controlled facility for all persons,
  - (iv) a means to help members of a dive team into and out of the water,
  - (v) a means to immediately bring an unconscious member of a dive team out of the water.

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- (2) If a dive base is not onshore, the dive base must be equipped with at least 2 means of evacuating persons.
- (3) If a boat or watercraft is used as a dive base, the boat or watercraft must be
  - (a) capable of remaining stationary without posing a hazard to the health or safety of a diver or ADS operator; and
  - (b) capable of moving without posing a hazard to the health or safety of a diver or ADS operator.

**Communications**

- 25.27** (1) There must be an effective means of communication between the diving supervisor and every other member of the diving supervisor's dive team.
- (2) Each diver, ADS operator or SCC attendant on the diving supervisor's dive team must be connected to the diving supervisor during a dive by a 2-way communication system that meets the requirements of this Section.
  - (3) A 2-way communication system must allow 2-way communication by voice between a diver and a diving supervisor, ADS operator or SCC attendant in all of the following circumstances:
    - (a) a deep dive;
    - (b) a dive in which the total time required for in-water decompression is greater than 10 minutes and decompression occurs at a depth greater than 3.5 m;
    - (c) a dive in which the average currents during the dive are greater than 2 km (1 knot) per hour;
    - (d) a dive in which the diver uses a power tool, explosive, burning equipment or welding equipment;
    - (e) a dive in which the diver directs the use of a hoisting device to place material underwater while the diver is underwater;

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- (f) a dive in which the diver is in or near a pipe that is larger than 10 cm in diameter, a tunnel, duct, underwater intake or other confined space that may cause an entrapment hazard;
  - (g) a dive in which the diver is in or near a water control structure;
  - (h) a dive in which the diver places any material underwater in a way that may pose a hazard to the health or safety of a diver;
  - (i) a dive in which an ADS is used;
  - (j) a dive in which an SCC is used;
  - (k) a dive conducted in a contaminated environment, unless it is not reasonably practicable.
- (4) In circumstances other than those listed in subsection (2), a 2-way communication system must be adequate and must allow 2-way communication
- (a) by voice; or
  - (b) by pre-arranged communication signals on a lifeline or float.
- (5) The 2-way communication system required for a deep dive or a dive in which an ADS is used must
- (a) have sound reproduction that enables the diver's or an ADS operator's breathing to be heard clearly; and
  - (b) if a breathing mixture contains helium or any other gas that distorts voice transmissions, be equipped with an unscrambler.
- (6) For a deep dive or a dive in which an ADS or SCC is used, all of the following must be met:
- (a) all communications through the 2-way voice communication system must be recorded;

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- (b) all recordings from the 2-way voice communication system must be kept for at least 48 hours;
  - (c) a diver, an ADS or an SCC must be connected to the dive base by a back-up 2-way communication system that is independent of the voice communication system required by subsection (4).
- (7) If a stage is used to transport a diver underwater, there must be a 2-way voice communication system in place that allows continuous communication between the diver and the diving supervisor during the transport.
- (8) If a stage is used to transport a diver other than underwater, there must be a system of pre-arranged visual communication signals or a 2-way voice communication system in place that allows continuous communication between the diver and the diving supervisor during the transport.

**Breathing mixtures and breathing equipment**

**25.28 (1)** A breathing mixture used by a diver must

- (a) be appropriate for the depth and circumstances of the dive; and
  - (b) meet the requirements for purity of breathing mixtures set out in the latest version of CSA standard CSA Z275.2, “Occupational Safety Code for Diving Operations”.
- (2) A breathing mixture used for a dive conducted using an ADS must contain the same proportions of nitrogen and oxygen as in air.
- (3) Pure oxygen must not be used as a breathing mixture for a dive that is to a depth of greater than 7.5 m, except when it is necessary for therapeutic purposes or for decompression.

**Primary and secondary breathing mixture supplies**

**25.29 (1)** The total supply of breathing mixture that is available at a dive site during a dive must consist of all of the following:

- (a) a primary breathing mixture supply sufficient to complete the dive as planned;



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- (b) an adequate secondary breathing mixture supply for use in an emergency.
- (2) A secondary breathing mixture supply must consist of the following:
  - (a) for a SCUBA dive, a fully charged cylinder and a regulator;
  - (b) for a surface-supplied dive, an amount of breathing mixture sufficient to enable a diver to safely return to the surface in accordance with any decompression tables and procedures for the dive;
  - (c) for a dive in which an SCC or lock-out submersible is used, an amount of breathing mixture sufficient to safely meet the needs of the SCC's or lock-out submersible's occupants for at least 24 hours;
  - (d) for dive in which an ADS is used, an amount of breathing mixture sufficient to safely meet the needs of the ADS's occupants for at least 48 hours, except where the ADS is a component of a lock-out submersible;
  - (e) for a dive in which an in-line gas blender or rebreather is used, an amount of breathing mixture sufficient to enable the diver to safely return to the surface in accordance with any decompression tables and procedures for the dive;
  - (f) for a dive in which a hyperbaric chamber is required, an amount of breathing mixture sufficient to enable the diver to undergo any decompression required to treat any pressure-related illness.

**Breathing mixture supply system**

- 25.30 (1)** A breathing mixture supply system used for a dive must be appropriate for the depths and circumstances of the dive.
- (2)** A breathing mixture supply system must be designed so that an interruption of breathing mixture supply to
- (a) a diver will not affect the delivery of breathing mixture
    - (i) to any other diver,

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- (ii) from that diver's bail-out system,
- (iii) from any secondary breathing mixture supply,
- (b) an SCC or ADS will not affect the delivery of breathing mixture from any secondary breathing mixture supply.

**Compressors**

- 25.31 (1)** A compressor used to supply a breathing mixture to a diver or ADS operator
- (a) must be able to maintain double the volume of breathing mixture required by the diver or ADS operator, at a pressure at least 25% greater than the maximum pressure required to supply the breathing mixture to the diver or ADS operator; and
  - (b) must discharge the breathing mixture through purification filters and into a receiver with adequate volume.
- (2)** A compressor used to supply a breathing mixture must be operated by a competent person.

**Oxygen supply system**

- 25.32** An oxygen supply system used at the dive site must meet all of the following requirements:
- (1)** it must be designed specifically to supply oxygen
    - (a) so that the possibility of contaminating the oxygen is minimized, and
    - (b) at no greater than 1000 kPa above the pressure of the maximum diving depth;
  - (2)** it must be adequate for the circumstances in which it will be used;
  - (3)** it must be kept clean;
  - (4)** it must not include any quick-opening valves, except for valves used for emergency shut-off.

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**Oxygen storage facility**

**25.33** Any building or structure used to store oxygen at the dive site must be

- (a) mechanically ventilated;
- (b) posted with warning signs indicating that it contains oxygen;
- (c) equipped with an adequate means of extinguishing fire;
- (d) maintained by a competent person;
- (e) located away from combustible materials.

**Diving equipment and use of diving equipment**

**25.34 (1)** All diving equipment that is necessary to health or safety must be in adequate condition and the equipment must be constructed in a way that ensures against malfunctions caused by any of the following:

- (a) low air temperatures;
- (b) low water temperatures;
- (c) the expansion of gas.

**(2)** All diving equipment that is necessary to health or safety must be

- (a) examined by a competent person at least once each day it is used; and
- (b) tested, repaired and maintained by a competent person, in accordance with the manufacturer's specifications.

**(3)** An owner of diving equipment must keep a record of any diving equipment test for at least 2 years after the date of the test or until the diving equipment is retested, whichever is longer.

**Equipment maintenance and operation materials at dive site**

**25.35** All written material necessary for maintaining and operating the diving equipment to be used in a dive must be available at the dive site.

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**Diving equipment malfunction**

- 25.36 (1)** A member of a dive team who becomes aware of a diving equipment malfunction must
- (a) immediately notify all of the following:
    - (i) the diving supervisor,
    - (ii) the diver's tender,
    - (iii) any other diver, ADS operator, or SCC attendant who may be affected by the malfunction; and
  - (b) if the malfunction occurs during a dive, immediately abort the dive in co-operation with the diving supervisor.
- (2)** Diving equipment that is malfunctioning
- (a) must not be used until it is repaired; and
  - (b) must be clearly identified as malfunctioning until it is repaired.
- (3)** An owner of diving equipment must keep a record of a diving equipment repair for at least 2 years after the date of the repair.

**Personal diving equipment**

- 25.37 (1)** Each diver must be equipped with all of the following diving equipment:
- (a) a knife that is strong and sharp;
  - (b) weights that are sufficient to control buoyancy;
  - (c) an inflatable buoyancy device;
  - (d) a submersible pressure gauge;
  - (e) a submersible depth gauge;
  - (f) an underwater watch with an elapsed-time indicator;

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- (g) a diving suit or other protective clothing if a diving suit is not necessary because of the circumstances of the dive;
  - (h) a diving harness; and
  - (i) a device for summoning aid and receiving a recall from the surface while submerged.
- (2) Immediately before conducting a dive, a diver must check that they have the diving equipment required by subsection (1) and that it is functioning properly.

**Gauges and metering equipment**

**25.38** Any gauge or metering equipment that may affect the health or safety of a person must have been tested by a competent person within the 12 months immediately before it is used.

**Lifelines and other tethered devices**

- 25.39 (1)** Except as provided in Section 25.41, a diver must be equipped with a lifeline, rings, hooks, and other attachment hardware that meet the requirements of this Section.
- (2) A lifeline and any associated rings, hooks, or other attachment hardware used by a diver at a dive site must
- (a) be securely attached to the diver's harness;
  - (b) be free of knots, except for any knot needed to attach the lifeline to the diver's harness, the dive base or a float;
  - (c) be free of joins that could lower the breaking strength below 14 kN;
  - (d) be strong enough to support 10 times the weight of the diver and the diver's equipment;
  - (e) have a breaking strength of at least 14 kN;
  - (f) for a surface-supplied dive, be securely attached to the dive base;

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- (g) for a SCUBA dive, be securely attached to the dive base or to a float that is visible to the diver's tender;
  - (h) for a dive in which an SCC or a lock-out submersible is used, be securely attached to the SCC or the lock-out submersible;
  - (i) for a dive in which an umbilical bundle is used, are incorporated in the umbilical bundle and are attached to the diver's harness in a manner that prevents strain on the diver's helmet and hose.
- (3) Any rings, hooks or other attachment hardware must meet the requirements for class I connectors as set out in the latest version of CSA Standard CSA standard CSA Z259.12, "Connecting Components for Personal Fall Arrest Systems (PFAS)".
  - (4) A standby diver must be equipped with a lifeline that is at least 3 m longer than the lifeline of any diver that the standby diver may need to rescue.
  - (5) An SCC attendant must be equipped with a lifeline that is at least 3 m longer than the lifeline of any diver performing a dive from the SCC.

**Monitoring lifelines**

**25.40** A diver's lifeline must be monitored by a diver's tender at all times during a dive.

**Safety precautions for dives conducted without a lifeline**

- 24.41 (1)** A diver who is conducting a SCUBA dive is not required to be equipped with a lifeline if they use one of the following safety precautions:
- (a) a buddy system, in which 2 divers remain in constant visual or physical contact at all times and both divers surface immediately if they lose contact;
  - (b) constant audio communication with the surface.
- (2)** A diver conducting a dive in open water without a lifeline must carry an audio locating device or a visual locating device.

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### **Umbilical bundle**

**25.42** Except for an SCC attendant who dives in a health or safety emergency, a diver who exits from an SCC must not be equipped with an umbilical that is longer than 50 m.

### **Stages**

- 25.43** (1) A stage must be used to transport a diver to and from the water during a dive that is conducted from a dive base that is higher than 5 m above the water.
- (2) A stage must meet all of the following requirements:
- (a) be designed for transporting persons;
  - (b) be secured against tipping and spinning;
  - (c) not contain any equipment capable of interfering with an occupant's foothold or handhold;
  - (d) be of sufficient size to accommodate all persons and equipment being lifted;
  - (e) be approved by an engineer;
  - (f) be constructed or equipped to prevent an occupant from falling out;
  - (h) be constructed or equipped with handholds arranged so that crushed hand injuries are avoided.
- (3) A stage that is used in a dive must be available throughout the dive for the immediate recovery of a diver in case of a health or safety emergency.

### **Fall protection**

**25.44** Fall protection is required in accordance with Part 21: Fall Protection for a dive in which a stage is used.

### **Hoisting device for stage**

**25.45** (1) A hoisting device that is used to move a stage carrying a diver must

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- (a) be available throughout a dive for the immediate recovery of a diver in a health or safety emergency; and
  - (b) have a back-up means of recovering a diver if the primary hoisting mechanism fails.
- (2) Except in a health or safety emergency, all directions to the operator of a hoisting device must be given by the diving supervisor.

**Wet bell**

**25.46** A wet bell that is used in a dive must meet all of the following requirements:

- (a) it must be large enough to safely accommodate all submerged divers;
- (b) it must be equipped with a sufficient amount of breathing mixture to safely decompress the divers in a health or safety emergency.

**Compression chamber**

**25.47** A compression chamber must be examined in accordance with the manufacturer's specifications and must be found to be in good working condition sometime in the 24 hours immediately before it is used.

**Pressure leak test on compression chamber**

**25.48 (1)** A compression chamber must be subjected to a pressure leak test at all of the following times:

- (a) some time in the 90 days immediately before it is used;
  - (b) after the compression chamber is moved and assembled;
  - (c) after the compression chamber is repaired, altered or parts of it are replaced and the repair, alteration or replacement might affect its safety.
- (2) A pressure leak test on a compression chamber must be conducted using an appropriate breathing mixture to a pressure that is the greater of
- (a) the maximum working pressure that may be encountered during a planned dive or dives plus 100 kPa; and



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- (b) 600 kPa.

**Internal pressure test on compression chamber**

- 25.49**
- (a) A compression chamber must be subjected to an internal pressure test some time in the 5 years immediately before it is used.
  - (b) An internal pressure test on a compression chamber must be conducted to a pressure of at least 1.25 times the maximum working pressure of the compression chamber.

**Breathing mixture required for compression chamber**

- 25.50 (1)** The amount of breathing mixture required for using a compression chamber for a dive is the total of the following:
- (a) the amount required to pressurize the chamber to the greater of
    - (i) 500 kPa, and
    - (ii) the pressure at the greatest depth the chamber is planned to be used in a dive;
  - (b) the amount required to ventilate the chamber at the greater of
    - (i) 500 kPa, and
    - (ii) the pressure at the greatest depth the chamber is planned to be used in a dive.
- (2)** Twice the amount of breathing mixture required for using a compression chamber must be available at a dive site when conducting a dive using a compression chamber.

**Pressurized container used to hold compressed gases**

- 25.51 (1)** A pressurized container used to hold compressed gases must be examined in accordance with the manufacturer's specification and have been found to be in good working condition some time in the 24 hours immediately before it is used.
- (2)** A pressurized container used to hold compressed gases that is intended to be immersed in water must be

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- (a) tested on manufacture in accordance with the latest version of CSA standard CSA B339, “Cylinders, Spheres and Tubes for the Transportation of Dangerous Goods”; and
  - (b) visually inspected, both internally and externally, some time in the year immediately before it is used.
- (3) An owner of diving equipment must keep a written record of a test or an inspection performed under subsection (2) for at least 1 year.
- (4) A pressurized container used to hold compressed gases that is not intended to be immersed in water must be
  - (a) tested on manufacture in accordance with the latest version of CSA standard CSA B339, “Cylinders, Spheres and Tubes for the Transportation of Dangerous Goods”; and
  - (b) visually inspected, both internally and externally, within 5 years prior to use.

**Hyperbaric chamber at dive site**

- 25.52 (1)** Except as provided in subsection (2) or unless a physician states in writing that a hyperbaric chamber is not required at a dive site, there must be a hyperbaric chamber at the dive site in any of the following circumstances:
- (a) when there is a significant chance of a pressure-related illness occurring;
    - (b) when a deep dive is conducted.
  - (2) A hyperbaric chamber is not required for a dive conducted for seafood harvesting in either of the following circumstances:
    - (a) when the total time planned for in-water decompression is less than 10 minutes;
    - (b) decompression of the divers occurs at a depth of less than 3.5 m.
  - (3) A hyperbaric chamber used for a dive conducted at a dive site must be a Class A double-lock type hyperbaric chamber that is

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- (a) in adequate operable condition; and
  - (b) tested on manufacture and conforms to the latest version of CSA standard CSA Z275.1, “Hyperbaric Facilities”.
- (4) A hyperbaric chamber must be operated in accordance with the latest version of CSA standard CSA Z275.1, “Hyperbaric Facilities” by a person who
- (a) meets the qualifications for a hyperbaric chamber operator set out in the latest version of CSA standard CSA Z275.4, “Competency Standard for Diving, Hyperbaric Chamber, and Remotely Operated Vehicle Operations; and
  - (b) is assigned no other duties that would conflict with their operation of the hyperbaric chamber.

**Submersible compression chamber (SCC)**

- 25.53 (1)** An SCC used at a dive site must have adequate depth capacity and must be designed, constructed, maintained, and tested in accordance with the latest version of CSA standard CSA Z275.1, “Hyperbaric Facilities”.
- (2) An SCC used at a dive site must be designed so that it is capable of:
- (a) transferring persons under pressure into and out of a hyperbaric chamber;
  - (b) accommodating the number of occupants that the SCC is to carry without overcrowding;
  - (c) enabling a diver to enter and exit the SCC easily;
  - (d) enabling a diver or SCC attendant to disconnect or shear the umbilical bundle of the SCC in a health or safety emergency;
  - (e) enabling the secondary breathing mixture supply to be brought on-line from within the SCC;
  - (f) ensuring that the secondary breathing mixture supply system cannot be accidentally operated.

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- (3) An SCC used at a dive site must be adequately equipped with all of the following:
- (a) a mechanism for shedding ballast weights that
    - (i) can be operated from within the chamber, and
    - (ii) is designed to ensure against accidental shedding of ballast;
  - (b) doors and hatches that can act as pressure seals and can be opened from either side;
  - (c) valves, gauges, and other fittings that control pressure within the chamber and that clearly indicate internal and external pressures;
  - (d) pressurization valves and main exhaust valves that are spring-loaded to close when not held in the open position;
  - (e) primary internal lighting equipment and emergency back-up internal lighting equipment;
  - (f) hoisting equipment for recovering an unconscious or injured diver from the SCC;
  - (g) heating equipment;
  - (h) emergency thermal protection for all occupants;
  - (i) an emergency outside stroboscopic light;
  - (j) an emergency locating device;
  - (k) instruments that monitor the temperature, oxygen and carbon dioxide levels within the SCC;
  - (l) primary and emergency carbon dioxide scrubbers;
  - (m) hull shut-off valves on all gas and water penetrations into the SCC;

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- (n) a primary support adequate to support 4 times the weight of the SCC;
- (o) a secondary support that is of at least the same strength as the primary support required;
- (p) first aid supplies;
- (q) a blind port;
- (r) a tool kit.

**Back-up submersible compression chamber**

**25.54** For a dive in which an SCC is used, a back-up SCC that meets the requirements of these regulations must be available for deployment at the dive site within 24 hours of a health or safety emergency.

**Saturation chamber**

**25.55** A saturation chamber used at a dive site must be designed, constructed, maintained, and tested in accordance with the latest version of CSA standard CSA Z275.1, “Hyperbaric Facilities”.

**Atmospheric diving system (ADS)**

**25.56 (1)** An employer and a diving supervisor must ensure that an ADS used at the dive site must be registered or certified under one of the following:

- (a) the latest version of DNV-OS-E402, “Offshore Standard for Diving Systems”, published by Det Norske Veritas;
- (b) the latest version of “Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities”, published by the American Bureau of Shipping.

**(2)** An ADS used at a dive site must be designed so that it is capable of

- (a) enabling a diver or an ADS operator to disconnect or shear the umbilical bundle of the system in a health or safety emergency;
- (b) enabling the secondary breathing mixture supply to be brought on-line from within the ADS;

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- (c) ensuring that the secondary breathing mixture supply system cannot be accidentally operated.
- (3) An ADS used at a dive site must be adequately equipped with
  - (a) a mechanism to shed ballast weights that
    - (i) can be operated from within the ADS, and
    - (ii) is designed to ensure against accidental shedding of ballast;
  - (b) doors and hatches that can act as pressure seals and can be opened from either side;
  - (c) valves, gauges, and other fittings that can control pressure within the ADS and clearly indicate internal and external pressures;
  - (d) pressurization valves and main exhaust valves that are spring-loaded to close when not held in the open position;
  - (e) primary internal lighting equipment and emergency back-up internal lighting equipment;
  - (f) hoisting equipment capable of recovering an unconscious or injured diver from the ADS;
  - (g) heating equipment;
  - (h) emergency thermal protection for all occupants;
  - (i) an emergency outside stroboscopic light;
  - (j) an emergency locating device;
  - (k) instruments that monitor the temperature, oxygen, and carbon dioxide levels within the ADS;
  - (l) primary and emergency carbon dioxide scrubbers;
  - (m) hull shut-off valves on all gas and water penetrations into the ADS;

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- (n) a primary support adequate to support 4 times the weight of the ADS;
- (o) a secondary support that is of at least the same strength as the primary support required;
- (p) first aid supplies;
- (q) a blind port;
- (r) a tool kit.

**Back-up ADS**

**25.57** For a dive in which an ADS is used, a back-up ADS that meets the requirements of these regulations must be available for deployment at the dive site within 24 hours of a health or safety emergency.

**Exiting from lock-out submersible**

**25.58** A diver must not exit from the SCC of a lock-out submersible underwater unless:

- (a) the lock-out submersible is resting on the bottom or is adequately secured to the underwater work site;
- (b) the diving supervisor is in the ADS component of the lock-out submersible.

**Hoisting device for SCC or ADS**

- 25.59** (1) A hoisting device must be available at a dive site to move an SCC or an ADS and the hoisting device must be equipped with a primary lifting cable that permits the safe lowering and raising of the SCC or the ADS.
- (2) A secondary and independent means of recovering the SCC or ADS must be immediately available at a dive site.
- (3) Except in a health or safety emergency, all directions to the operator of a hoisting device that is used to move an SCC or an ADS, must be given by the diving supervisor.
- (4) A hoisting device that is used to move an SCC that is not a component of a lock-out submersible must be equipped with a safety rope that will stop the

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SCC in the calm area below the surface that is not affected by the action of the waves if the primary cable breaks during the transfer from water to air or air to water.

**Liveboating**

**25.60 (1)** Liveboating must not occur in any of the following circumstances:

- (a) between sunset and sunrise;
  - (b) from a boat or watercraft with inadequate manoeuvrability;
  - (c) when weather or water conditions are unsafe;
  - (d) if in-water decompression procedures are planned;
  - (e) if a dive is planned to depth of greater than 50 m.
- (2) A procedure or device must be used when liveboating that prevents a diver's or ADS operator's umbilical bundle from coming in contact with any component of the vessel's propulsion system.
- (3) A vessel used for liveboating must be operated by a competent person.
- (4) The operator of a vessel used for liveboating must
- (a) have a continuous unobstructed view of a diver's tender; and
  - (b) not act as a diving supervisor, stand-by diver, or diver's tender while operating the vessel.

**Dynamically positioned vessel dive**

**25.61 (1)** A vessel used for a dynamically positioned vessel dive must meet all of the following requirements:

- (a) the vessel must be equipped with more than 1 prime mover for each fore, aft and thwart ship thruster;
- (b) if a prime mover or maneuvering unit fails, the vessel can maintain its position for the time it takes to safely recover all divers and ADS operators;



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- (c) if 1 of the vessel's thrusters fails or is lost, the arrangement, size and number of thrusters enable the vessel to maintain its heading and position within the vessel's operational capacity limits for the time it takes to safely recover the stage required by clause (3)(a) or ADS used in the dive;
  - (d) the vessel must be equipped with a primary computer system that controls the dynamic positioning of the vessel and a back-up computer system that automatically takes control of the dynamic positioning of the vessel if the primary computer system fails;
  - (e) there must be at least 2 geographic reference systems that are independently linked into each computer system that controls the dynamic positioning of the vessel;
  - (f) for each maneuvering unit that is necessary to hold the vessel in position, other than the propellers and energy plant units, there must be a duplicate back-up unit that can be turned on both automatically and manually;
  - (g) there must be a communication system between a person in the control room of the vessel and the dive base.
- (2) A dynamically positioned vessel dive must only be conducted when all of the following conditions are met:
- (a) the vessel has been held in position through the use of an activated propulsion system for at least 30 minutes before a diver or ADS operator enters the water;
  - (b) the range of surge or sway movement of the water at the dive site must be less than 80% of the maximum operational capacity limit of the vessel;
  - (c) the operator of the vessel has been notified that a dive is about to be conducted.
- (3) All of the following requirements must be met during a dynamically positioned vessel dive:

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- (a) a stage must be positioned as close as possible to the underwater work site;
  - (b) no change of heading or positioning of the vessel takes place until the diving supervisor has given permission for a change of heading or positioning and all divers and ADS operators have been notified;
  - (c) at any time a person involved in the dive is in the water
    - (ii) the machinery spaces of the vessel are manned, other than machinery spaces designed to flood during normal operations, and
    - (iii) in any 1 manoeuvre, the vessel must be moved only the lesser of the following:
      - A. 5 metres,
      - B. a 5 degree change in heading;
  - (d) the person controlling the dynamic positioning system tells the diving supervisor and the operator of the vessel of any difficulties in holding the vessel in position or any other problems that may affect health or safety at the dive site.
- (4) The operator of the vessel used for dynamically positioned vessel diving
- (a) must have at least 6 months experience using the automatic modes of the dynamic positioning system of the vessel; or
  - (b) if the experience required by clause (a) is not reasonably practicable, must have 6 months experience on a similar system and have demonstrated their competence to the employer.
- (5) Divers and ADS operators involved in a dynamically positioned vessel dive must be protected from a health or safety hazard that may be caused by

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- (a) the normal movements of the vessel and any movements caused by unexpected loss of power or stability;
  - (b) any suction or water current encountered or resulting from the operation of the vessel;
  - (c) equipment on the vessel involved in the dive.
- (6) In consultation with the dive team for a dynamically positioned vessel dive, plans must be made that provide for the protection and recovery of divers and ADS operators if the vessel used for the dive loses power.

**Diving Hazards**

**Water flow hazards**

- 25.62 (1)** A dive must not be conducted in hazardous water flow conditions.
- (2)** Before a dive is conducted, any water flow that may pose a health or safety hazard to a diver or ADS operator must be identified and described to the diver or ADS operator, the diver or ADS operator must be provided with the means to identify the water flow hazard in such a manner as to differentiate it from any other similar water flow hazard in the location, and one of the following must occur:
- (a) the water flow must be stopped at the source and secured by a lock or other inhibiting device;
  - (b) the health and safety of a diver or ADS operator approaching the water flow hazard must be assessed by the determination of flow patterns using measures such as direct measurement or calculation and the water flow must be controlled in a way that
    - (i) ensures that the water flow is not a health or safety hazard to the diver or ADS operator, and
    - (ii) is satisfactory to the diving supervisor and the diver or ADS operator.

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**Hazardous mechanisms**

- 25.63 (1)** Before a dive is conducted, any mechanism that may pose a health or safety hazard to a diver or ADS operator must be
- (a) identified and described to the diver or ADS operator; and
  - (b) locked-out or controlled in a way that
    - (i) ensures that the mechanism is not a health or safety hazard to the diver or ADS operator, and
    - (ii) is satisfactory to the diving supervisor and the diver or ADS operator.
- (2)** A dive must not be conducted if a health or safety hazard may be caused by equipment near the dive site, unless the divers and ADS operators are protected from the hazard.

**Blasting with explosives at dive site**

- 25.64** A blast from an explosive must not be initiated at a dive site until the diving supervisor
- (a) has determined that it is safe to initiate the blast; and
  - (b) has informed the blaster responsible for initiating the blast that it is safe to initiate the blast.

**Low visibility**

- 25.65** During any period of darkness or low visibility at a dive site or underwater work site
- (1)** each diver must be provided with a lamp or other suitable device that indicates the diver's position and that attaches to the diver's helmet or mask; and
  - (2)** the dive site or underwater work site must be adequately illuminated if the nature of a dive permits.

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### **Weather or water conditions**

**25.66** Weather and water conditions in the area of a dive or a planned dive must be considered and diving must be suspended if weather or water conditions are hazardous or are likely to become hazardous.

### **Sonar emissions**

**25.67** A diver or ADS operator must be protected from health or safety hazards that may be caused by sonar emissions.

### **Radiation**

**25.68** A diver or ADS operator must be protected from health or safety hazards that may be caused by a device emitting electromagnetic or ionizing radiation.

### **Impressed current cathode protection devices**

**25.69** An impressed current cathode protection device that is within 5 m of an underwater work site must be deactivated and locked-out.

### **Diving contaminated environments**

**25.70 (1)** In a contaminated environment, all of the following work zones must be established at a dive base:

- (a) an exclusion work zone, where a diver or ADS operator must exit the water, that is designed and equipped for
  - (i) handling, storing and disposing of contaminants collected during a dive, and
  - (ii) initially decontaminating a diver or ADS operator when the diver or ADS operator exits the water;
- (b) a contaminant-reduction work zone, where a person must exit the exclusion zone, that must be designed and equipped for
  - (i) decontaminating personnel who have been exposed to a contaminant, and
  - (ii) cleaning equipment that has been exposed to a contaminant; and

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- (c) a support work zone that must be designed and equipped for storing and disposing of equipment that is exposed to a contaminant.
- (2) A work zone must only be used for the purposes that it is designed for.
- (3) A work zone must be clearly marked.
- (4) A person must exit the exclusion work zone only through the contaminant-reduction work zone.
- (5) Only authorized persons may enter a work zone.
- (6) No food, drink or tobacco may be brought into a work zone.

**Contaminant management plan**

- 25.71** (1) Before a dive is conducted in a contaminated environment, a written contaminant management plan for the dive must be developed that meets the requirements of this Section.
- (2) A contaminant management plan must be developed in consultation with
    - (a) the diving supervisor; and
    - (b) the committee or representative, if any.
  - (3) A contaminant management plan must include all of the following:
    - (a) the name of any contaminants;
    - (b) a description of the health or safety hazards posed to an employee who may be exposed to an identified contaminant;
    - (c) a description of the protective equipment that must be used or worn by an employee;
    - (d) the locations of the work zones;
    - (e) the procedures to be followed by all persons moving between the work zones;

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- (f) the procedures to be followed if someone is exposed to a health or safety hazard resulting from an identified contaminant;
  - (g) the procedures for handling all contaminants that are likely to be encountered.
- (4) A contaminant management plan must be posted at the dive site where the dives are conducted that are identified through contaminant testing;

**Protective equipment to protect against contaminants**

**25.72 (1)** In a contaminated environment, a diver must be equipped with the following protective equipment and a diver must use the following equipment:

- (a) a diving helmet designed for and adequate for the work that is performed;
  - (b) where reasonably practicable, a totally enclosed diving suit that is made of non-absorbent material and that mates to a diving helmet with a positive seal and locking device;
  - (c) protective devices that minimize the exposure of diving equipment to a contaminant.
- (2) A person at the dive site must be equipped with and use adequate apparel and protective devices to prevent exposure to a contaminant.

**Diving equipment exposed to contaminant**

- 25.73**
- (a) Diving equipment that is exposed to a contaminant must be inspected for deterioration and must be adequately cleaned before it is used again.
  - (b) Diving equipment that is exposed to a contaminant must be adequately cleaned or must be stored in an adequate receptacle before it is removed from a dive site.

**Diving records**

**25.74 (1)** A diver and an ADS operator must each keep a logbook that

- (a) has the name of the diver or ADS operator written on it;

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- (b) is permanently bound; and
  - (c) has consecutively numbered pages.
- (2) A diver and an ADS operator must keep their logbook at the dive site at all times when they are at the dive site.

**Entry in diver's or ADS operator's logbook**

**25.75 (1)** A diver or ADS operator must make and sign an entry in their logbook as soon as reasonably practicable after a dive and before leaving a dive site.

- (2) A diving supervisor must countersign an entry in a diver's or ADS operator's logbook and make note if they disagree.
- (3) An entry in the diver's or ADS operator's logbook must include all of the following:
- (a) the date of the dive;
  - (b) the geographic location of the dive;
  - (c) the name of the diver's employer;
  - (d) the name of the diving supervisor for the dive;
  - (e) if applicable, the name, call number or other unique identifier of any vessel or installation from which the dive was conducted;
  - (f) the type of diving apparatus used;
  - (g) the time the diver left the surface;
  - (h) the bottom time of the dive;
  - (i) the time the diver left the bottom;
  - (j) the time the diver reached the surface;
  - (k) the task performed during the dive;



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- (l) the surface interval, if a repetitive dive was undertaken;
  - (m) the gas media breathed;
  - (n) the maximum depth of dive attained;
  - (o) any decompression table and schedule used;
  - (p) any decompression procedure followed;
  - (q) any accident, near miss or unusual incident with the potential to affect health or safety;
  - (r) any discomfort, illness or injury experienced by the diver or ADS operator;
  - (s) any other factor or remark that the diver or ADS operator considers relevant to their health or safety.
- (4) An alteration to an entry in a diver's or ADS operator's logbook must be initialed by the diver or ADS operator and the diving supervisor.
- (5) A diver or ADS operator must produce their logbook for inspection on the request of an officer or a physician performing a medical examination required by Section 25.8.
- (6) A diver or ADS operator must retain the diver's or ADS operator's logbook for 2 years after the date of the last entry in the logbook.

**Diving supervisor's record**

**25.76 (1)** A diving supervisor must keep a diving supervisor's record.

- (2) A diving supervisor's record must include all of the following:
- (a) the name of the diving supervisor;
  - (b) the names of all employers;
  - (c) records of all equipment examinations required by these regulations;

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- (d) if used, confirmation of testing of hyperbaric chambers, SCCs and ADSs;
  - (e) an entry for each planned dive or dives conducted by a diver.
- (3) A diving supervisor must make and sign an entry as soon as reasonably practical after each dive.
- (4) An entry in the diving supervisor's record must include all of the following for each planned dive or dives:
  - (a) the date of the dive;
  - (b) the geographic location of the dive;
  - (c) the name of each diver or ADS operator;
  - (d) the names of each standby diver and diver's tender;
  - (e) if applicable, the name, call number or other unique identifier of any vessel or installation from which the dive was conducted;
  - (f) the type of diving apparatus used;
  - (g) the weather and water conditions;
  - (h) all underwater work site hazards;
  - (i) a notation indicating whether a dive was conducted in a contaminated environment;
  - (j) the time each diver or ADS operator left the surface;
  - (k) the time each diver or ADS operator arrived at the bottom of the dive;
  - (l) the time each diver or ADS operator left the bottom of the dive;
  - (m) the time each diver or ADS operator re-emerged at the surface;

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- (n) the times at which a stage, SCC or ADS used in the dive left the surface;
  - (o) the times at which a stage, SCC or ADS used in the dive returned to the surface;
  - (p) the work performed and procedures used during the dive;
  - (q) the gas media breathed;
  - (r) the maximum depth of the dive;
  - (s) any decompression table and schedule used;
  - (t) any decompression procedure followed;
  - (u) the surface interval, if a repetitive dive was undertaken;
  - (v) the certificate number of any hyperbaric chamber used and the expiration date of the record of certification;
  - (w) any accident, near miss or unusual incident with the potential to affect health or safety;
  - (x) any discomfort or illness experienced by a diver or ADS operator;
  - (y) any other factor that the diving supervisor considers relevant to the health or safety of the divers or ADS operators.
- (5) If a dive involves a diver or ADS operator repeatedly submerging and returning to the surface without exiting the water, a dive entry must include the information required by clauses (4)(j) to (m) for each time that the diver or ADS operator leaves the surface.
- (6) A diving supervisor must file a signed copy of their diving supervisor's record with each employer within 7 days of the end of a planned dive or dives.

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- (7) An employer with whom a diving supervisor's record is filed must retain the diving supervisor's record for at least 2 years after the date for which the last entry was made.

**Work involving SCUBA**

**When SCUBA is not permitted**

**25.77** SCUBA must be not used at construction or industrial underwater work sites that involve any of the following functions:

- (a) welding;
- (b) burning or cutting;
- (c) high-pressure jetting;
- (d) explosives;
- (e) hoisting;
- (f) dredging;
- (g) using power tools;
- (h) working in a contaminated environment; or
- (i) liveboating.

**Code of practice required for SCUBA**

**25.78 (1)** A written code of practice that includes the dive plan required by Section 25.16 must be adopted and written confirmation from the Director that the code of practice is acceptable to the Director must be obtained before SCUBA is used at construction or industrial underwater work sites involving

- (a) underwater intakes;
- (b) entry into pipes or confined spaces;
- (c) underwater approaches to operating intakes, or exhausts;

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- (d) water control structures;
  - (e) the use of enriched air as a breathing mixture.
- (2) The Director may consider, but is not limited to, the following in determining the acceptability of a code of practice required by subsection (1):
- (a) the nature of the work to be performed;
  - (b) the duration of the work to be performed;
  - (c) the training of diving personnel;
  - (d) the risk of diver entrapment;
  - (e) access to the surface;
  - (f) potential exposure to a contaminated environment;
  - (g) whether or not the use of surface-supplied air would reduce potential adverse effects from the work activity.

**Permitted use of SCUBA**

**25.79 (1)** If it is integral to normal operations and the employer has implemented a written code of practice that includes the dive plan required by Section 25.16 and obtained written confirmation from the Director that the code of practice is acceptable to the Director, SCUBA is permitted to be used at non-construction underwater work sites, non-industrial underwater work sites and commercial seafood harvesting underwater work sites for

- (a) high-pressure jetting;
- (b) hoisting;
- (c) using power tools;
- (d) diving near underwater intakes more than 10 cm in diameter.

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- (2) SCUBA is permitted to be used at commercial seafood harvesting underwater work sites for
  - (a) diving near underwater intakes less than 10 cm in diameter; or
  - (b) diving near pipes less than 10 cm in diameter.
- (3) The Director may consider, but is not limited to, the following in determining the acceptability of a code of practice required by subsection (2):
  - (a) the nature of the work to be performed;
  - (b) the duration of the work to be performed;
  - (c) the training of diving personnel;
  - (d) the risk of diver entrapment;
  - (e) access to the surface;
  - (f) potential exposure to a contaminated environment;
  - (g) whether or not the use of surface-supplied air would reduce potential adverse effects from the work activity.

**Rebreathers**

- 25.80** (1) A carbon dioxide absorbent used in a rebreather must be a type recommended by the manufacturer of the rebreather.
- (2) A carbon dioxide absorbent used in a rebreather must be stored in accordance with the specifications of the manufacturer of the absorbent.
- (3) A rebreather in which the breathing loops are not sealed must be made up immediately before the dive in which it is used.
- (4) A rebreather in which the breathing loops are sealed must be made up some time in the 24 hours immediately before the dive in which it is used.

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**Rebreather hazard training**

**25.81** A diver who uses a rebreather during a dive must be trained about the health and safety hazards associated with the use of rebreathers, including carbon dioxide poisoning, oxygen toxicity, and hypoxia.

**Monitoring of time and depth of SCUBA dives**

**25.82** The time and depths of all dives must be adequately monitored.

**Surface-supplied dives**

**25.83** A diver conducting a surface-supplied dive must wear a helmet or face mask that is all of the following:

- (a) adequate for the task;
- (b) designed for its intended purpose;
- (c) fitted with a non-return valve;
- (d) fitted with an adequate locking or fastening device;
- (e) attached by a hose to the diver's bail-out system.

**Bail-out systems**

**25.84 (1)** A diver conducting a surface-supplied dive must wear a bail-out system that provides a sufficient amount of breathing mixture to enable the diver to safely reach one of the following:

- (a) the surface;
- (b) the SCC, if an SCC is being used in the dive;
- (c) the lock-out submersible, if a lock-out submersible is being used in the dive;
- (d) a location at which breathing mixture can be obtained.

**(2)** A bail-out system must not be used to inflate a diving suit.

**Breathing mixture supply line**

**25.85** A breathing mixture supply line used in surface-supplied diving must be

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- (a) capable of providing a sufficient breathing mixture supply for the circumstances of the dive;
- (b) free of couplings, other than those required to attach the breathing mixture supply line to
  - (i) the diver or ADS operator, and
  - (ii) the breathing mixture source;
- (c) fitted with a breathing mixture supply valve that is
  - (i) clearly marked to identify the diver or ADS operator whose breathing mixture supply it controls,
  - (ii) under the control of a diver's tender,
  - (iii) protected from interference, and
  - (iv) readily accessible;
- (d) fitted with a pressure gauge that is
  - (i) located downstream of the breathing mixture supply valve, and
  - (ii) positioned so that the gauge's dial and figures are clearly visible to the diver's tender.

**Breathing mixture supply line during dive**

**25.86** During a surface-supplied dive, a breathing mixture supply line used in surface-supplied diving must be protected against damage and kinking.

**Additional requirements for deep dives**

**25.87** An adequate stage, or other adequate means must be provided to enable a diver conducting a deep dive to maintain the decompression stop depths and times set out in the dive plan for the dive without undue exertion.

**When SCC required for deep dive**

**25.88** An SCC must be used in any of the following deep dives:



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- (a) a deep dive that is conducted in environmental or marine conditions that pose a hazard to the health or safety of a diver or ADS operator;
- (b) a deep dive in which the maximum depth of the dive is greater than 50 m and the bottom time is longer than 30 minutes;
- (c) a deep dive in which the maximum depth of the dive is greater than 60 m and the bottom time is longer than 25 minutes;
- (d) a deep dive in which the maximum depth of the dive is greater than 70 m.

**Exposure limits for deep dives**

**25.89 (1)** During a deep dive that has a maximum depth of 150 m or less,

- (a) the diver must spend no longer than 4 hours in the water; and
- (b) the diver must spend no longer than 10 hours in the SCC.

**(2)** During a deep dive that has a maximum depth of more than 150 m,

- (a) the diver must spend no longer than 3 hours in the water; and
- (b) the diver must spend no longer than 8 hours in the SCC.

**Rest period before and between deep dives**

**25.90** A diver who is conducting a deep dive must have a rest period of at least

- (a) 12 consecutive hours before their first dive; and
- (b) 12 hours in every 24 hours after their first dive starts.

**Restrictions on diving following deep dive**

**25.91 (1)** A diver who conducts a deep dive, other than a saturation dive, must not work at a pressure greater than the air pressure at the dive base for 24 hours after the dive.

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- (2) A diver who conducts a saturation dive with a saturation period of shorter than 14 days must not work at a pressure greater than the air pressure at the dive base for 14 days after the dive.
- (3) A diver who conducts a saturation dive with a saturation period of between 14 and 31 days must not work at a pressure greater than the air pressure at the dive base for a time period equal to the saturation period after the dive.
- (4) A diver who conducts a saturation dive with a saturation period of more than 31 days must not work at a pressure greater than the air pressure at the dive base for 31 days after the dive.

**Back-up power source**

**25.92** A back-up power source for all powered equipment related to the dive must be available at the dive base for immediate use during a deep dive.

**SCUBA and deep dives**

**25.93** SCUBA must not be used in a deep dive.

**Part 27: Health and Safety Committees and Representatives**

*[Note: This is a new topic that is not currently addressed in any occupational health and safety regulations. It will be added as Part 27 of the Workplace Health and Safety Regulations.]*

**Application**

- 27.1** (1) This Part of these regulations applies to all of the following:
- (a) a committee required under Section 29 of the Act;
  - (b) a representative required under Section 33 of Act.
- (2) Except for subsections 27.4(2), and (3) that place specific requirements on an employer and a constructor, a duty imposed by this Part of these regulations on an employer is also imposed on a constructor for a committee established by a constructor on a project as required under Section 29 of the Act.

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**Implementation and support**

- 27.2 (1)** An employer must ensure that all reasonably practicable measures are taken to facilitate the implementation of all of the following:
- (a) the functions and duties of a committee or a representative;
  - (b) the rules of procedure adopted by a committee including those referred to in Section 27.3 and those that may be imposed by the Director under the Act.
- (2)** An employer must support the committee or the representative in performing their functions, where reasonably practicable, which may include providing any of the following:
- (a) information;
  - (b) instruction;
  - (c) facilities, including meeting rooms;
  - (d) materials;
  - (e) equipment;
  - (f) administrative support.

**Rules of procedure**

- 27.3** A committee must address all of the following in its rules of procedure:
- (a) the composition of the committee as required under subsection 30(1), (2) and (3) of the Act;
  - (b) the term of appointment of a member,
  - (c) quorum for a meeting;
  - (d) the selection of a co-chairperson or chairperson in accordance with subsections 30(8) and (9) of the Act;

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- (e) the frequency of meetings in accordance with subsections 30(4) and (5) of the Act;
- (f) how meetings will be conducted;
- (g) the notice to be given for regular or emergency meetings;
- (h) conduct of a meeting;
- (i) recording, maintaining and storing minutes of a meeting;
- (j) the conditions that warrant the calling of an emergency meeting by a co-chairperson or chairperson or, in the absence of a co-chairperson or chairperson, a member of the committee;
- (k) how the agenda will be set for a meeting;
- (l) ensuring policies, procedures and other matters are reviewed by the committee in all of the following circumstances:
  - (i) when consultation with the committee is required under the Act or regulations,
  - (ii) periodically to ensure they are consistent with workplace conditions at the time they are reviewed;
- (m) how inspections will be scheduled, initiated and conducted;
- (n) how the committee will handle complaints or concerns of employees, work refusals, accidents or incidents reported to the committee or a member of the committee;
- (o) how a recommendation or a response to a complaint or a concern is made, including a response to the employee who made the complaint or raised the concern;
- (p) how records relating to the performance of the committee's functions will be maintained and where the records will be kept.

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### **Training required**

- 27.4** (1) An employer must conduct, in consultation with a committee, an annual review of the training program for the committee to determine the training requirements for its members.
- (2) An employer, other than a constructor on a project, must ensure that every committee member required under the Act, has received a minimum of 21 hours of training, within 90 days of being appointed.
- (3) A constructor on a project where a committee is required must ensure that the employee co-chair and the employer co-chair of the committee have received a minimum of 21 hours of training, within 90 days of being appointed to the committee.
- (4) An employer must ensure that every representative required under the Act has received a minimum of 7 hours of training, within 90 days of being appointed as a representative.
- (5) A committee member or representative must receive training at least once every five years.
- (6) An employer who establishes, in writing, that a committee member or representative has previously received training that meets the content described in section 27.5 within the past five years, is not required to retrain that employee until five years has lapsed from the date of the training.
- (7) An employer must pay the cost of the training required by these regulations.
- (8) An employee who is a member of a committee or a representative must be paid their applicable rate for attending training in accordance with subsections 30(6) and 33(5) the Act, as applicable.

### **Training topics**

- 27.5** Training for a committee member and a representative must include, but is not limited to, the following topics:

- (a) an overview of Act with particular emphasis on all of the following:

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- (i) the internal responsibility system,
  - (ii) requirements for a policy and program in a workplace and the content required by Sections 27 and 28 of the Act,
  - (iii) the role and function of a committee or representative, as applicable,
- (b) overview of the content of the regulations under the Act;
  - (c) hazard recognition, evaluation and risk control;
  - (d) workplace inspection;
  - (e) incident investigation; and
  - (f) effective communication between a committee or representative and the employer and employees at their workplace.

**Training instructors**

- 27.6 (1)** Except as provided in subsections (2) and (3), an instructor delivering training under this Part of these regulations must hold at least 1 of the following sets of qualifications and experience:
- (a) a bachelor's degree from a Canadian university, or an equivalent degree from a university outside of Canada, and 12 months of instructing experience;
  - (b) a diploma from the Nova Scotia Community College or another college, trade or vocational school, or an equivalent institution, and 12 months of instructing experience.
- (2)** A person who does not meet any of the requirements of subsection (1) may deliver training as an instructor under this Part of these regulations if the person meets all of the following requirements:
- (a) they have at least 1000 hours of teaching experience;

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- (b) they must be enrolled in an instructional methods or train-the-trainer program in their 1st year as an instructor;
  - (c) they must make available for inspection at the request of an officer, proof of enrollment of the instructional methods or train-the-trainer program and documentation supporting their teaching experience.
- (3) An instructor is not required to comply with subsections (1) or (2) if they deliver the training through any of the following organizations:
- (a) a private career college within the meaning of the Private Career Colleges Regulation Act;
  - (b) an institution authorized to grant degrees or to provide a program of post-secondary study leading to a degree under the Degree Granting Act;
  - (c) a community college governed by the Community Colleges Act.
- (4) An employer must ensure that its employees are trained using an instructor who meets the requirements of this Section.

**Training records**

**27.7** An employer, must keep all of the following and provide a copy to the person trained:

- (a) a description of the training undertaken in the course; and
- (d) a record of the completion of the course signed by the training instructor or a representative from the organization that delivered the training.