

chapter S-2.1, r. 13

## **Regulation respecting occupational health and safety**

### **An Act respecting occupational health and safety**

(chapter S-2.1, s. 223)

#### **DIVISION I**

##### **INTERPRETATION AND SCOPE**

#### **1. Definitions:** In this Regulation,

“ACNOR” means the Canadian Standards Association or the Association canadienne de normalisation;

“aerial basket lifting device” means any elevator equipped with an extendable/retractable or jointed arm designed to be fitted with a carrier and used to lift workers or supplies by means of a basket on work sites;

“air recirculation” means local exhaust ventilation by extraction, filtering of the air and redistribution of the filtered air in a work area;

“all-terrain vehicle” means any passenger vehicle designed for sports driving off public highways and whose net weight does not exceed 450 kg;

“ANSI” means the American National Standards Institute;

“asbestos” means the fibrous form of mineral silicates belonging to rock-forming minerals of the serpentine group, namely chrysotile, and the amphibole group, namely actinolite, amosite, anthophyllite, crocidolite, tremolite or any mixture containing one or more of these minerals;

“asbestos dust” means airborne asbestos particles or deposited asbestos particles liable to become airborne in the work area;

“ASME” means the American Society of Mechanical Engineers;

“CGA” means the Canadian Gas Association or the Association canadienne du gaz;



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“continuous noise” means a steady noise including a noise caused by mechanical shocks of solid bodies or by impulses repeated at a frequency greater than one per second;

“corrected dBA” means the sound level expressed in dBA after an increase in the measured level of the predominant frequency band;

“CSA” means the Canadian Standards Association or the Association canadienne de normalisation;

“dB” means a dimensionless unit used to express in logarithmic form the relation existing between a measured quantity and a reference value which, when applied to sound pressure, is established in accordance with section 3 of publication No. 179 (second edition, 1973) of the Central Office of the International Electrotechnical Commission;

“dBA” means the value of the overall sound level measured on the A scale established in accordance with the standards and methods prescribed in publication No. 179 (second edition, 1973) of the Central Office of the International Electrotechnical Commission;

“EN”: a European standard issued by the European Committee for Standardisation;

“enclosed area” means any area that is completely or partially enclosed, especially a reservoir, a silo, a vat, a hopper, a chamber, a vault, a tank, a sewer including a ditch and a temporary manure storage ditch, a pipe, a chimney, an access shaft, a truck or freight car tank, which has the following inherent conditions:

- (1) is not designed for human occupation, nor intended to be, but may occasionally be occupied for the performance of work;
- (2) access to which can only be had by a restricted entrance/exit;
- (3) can represent a risk for the health and safety of anyone who enters, owing to any one of the following factors:
  - (a) its design, construction or location, except for the entrance/exit provided for in paragraph 2;
  - (b) its atmosphere or insufficiency of natural or mechanical ventilation;



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(c) the materials or substances that it contains;

(d) or other related hazards;

“friable material” means material that can be crumbled, pulverized or powdered by hand pressure when dry or that is crumbled, pulverized or powdered;

“heat stress” means heat unbalance in a worker caused by working in a hot environment;

“high-efficiency filter” means any filter capable of filtering particles 0.3 µm in size at an efficiency rate of at least 99.97%;

“hoisting apparatus” includes cranes, travelling cranes, gantries, winches, blocks, lift trucks, aerial basket lifting devices, work platform lifts, screw-type jacks, rack-type jacks and other similar apparatus but does not include elevators and dumb-waiters;

“impact noise” means any noise caused by mechanical shocks of solid bodies or by impulses repeated or not repeated at a frequency less than or equal to one per second;

“instructor” means a person in charge of the practical training and communication of theoretical knowledge required for the acquisition of occupational skills;

“linear dB” means the overall sound level measured in such a way that the various frequencies of the sound spectrum are in no way attenuated;

“NFPA” means the National Fire Protection Association;

“peak value” means the maximum level reached by a sound wave;

“predominant frequency band” means a frequency band whose level passes through a maximum that exceeds the arithmetic average of the levels of the preceding and following octave bands by 4 dB or more, and for the bands at the upper and lower limits of the sound spectrum, whose level exceeds that of the contiguous octave band by 5 dB;

“protective device” means a set of devices which when used alone or with a protector on machinery, eliminates dangers or reduces risks for the health, safety and physical well-being of workers;

“rated load” means the maximum load set by the manufacturer or an engineer;



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“respirable asbestos fibre” means asbestos fibre having a diameter of less than 3 µm and a ratio of length to diameter of more than 3:1. Only fibres longer than 5 µm are taken into account for measurement purposes;

“respiratory zone” means the zone within a hemisphere having a 300 mm radius extending in front of the face and measured from the midpoint of an imaginary line joining the ears;

“SAE” means the Society of Automotive Engineers;

“safety factor” means the ratio between the rupture load and the working load;

“self-propelled vehicle” means a motor vehicle mounted on wheels, on tracks or on rails, used for the transportation of objects or materials, or for towing or pushing trailers or materials, with the exception of an all-terrain vehicle or an elevating or lifting device;

“stationary work station” means any work station in which a worker is required to perform his duties for at least 4 hours of his working day over a usual work surface of 30 m<sup>2</sup> or less;

“washroom” means any room containing one or several toilets, urinals, sinks or showers to meet the sanitary needs of the workers of an establishment;

“work station” means any place, including a vehicle occupied by a worker to perform his work;

“ULC” means the Underwriters' Laboratories of Canada or the Laboratoires des assureurs du Canada.

O.C. 885-2001, s. 1; O.C. 510-2008, s. 1.

**2. Scope:** Notwithstanding any provisions to the contrary, this Regulation applies to all establishments.

Sections 1 to 5, 17, 40, 42, 44 to 48, 64 and 65, subparagraphs 1 to 3 of the first paragraph and the second paragraph of section 66, sections 107 to 111, 113 to 115, 121 to 124 and 144, the first paragraph of section 145 and sections 146, 148 to 151, 162 to 165 and Division XXVI.1 also apply, with the necessary modifications, to construction sites or, if applicable, to categories of sites specified therein.

O.C. 885-2001, s. 2; O.C. 119-2008, s. 8; O.C. 425-2010, s. 1.

## **DIVISION II**

### **GENERAL PROVISIONS**





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**3. Purpose:** The purpose of this Regulation is to establish standards pertaining in particular to the quality of air, temperature, humidity, heat stress, lighting, noise and other contaminants, sanitary facilities, ventilation, hygiene, sanitation and cleanliness in establishments, area conditions, storage and handling of dangerous substances, machine and tool safety, certain high risk tasks, individual protective equipment and the transportation of workers to ensure the quality of the work environment, to safeguard the health of workers and to ensure their safety and physical well-being.

O.C. 885-2001, s. 3.

**4. Employer's obligations:** The employer shall comply with the standards set hereunder, with the exception of those of sections 312.5 and 339.

O.C. 885-2001, s. 4; O.C. 425-2010, s. 2.

**5. Operational status of equipment:** Any equipment used or installed in an establishment for purposes of preventing the emission of gases, dusts, fumes and vapours, to ensure proper conditions for lighting, ventilation, temperature, salubrity and hygiene prescribed hereunder or to ensure that noise or heat stress conditions comply with the requirements hereunder, shall always be in operational condition and shall give optimal performance during the establishment's business hours in such manner as to provide the performance for which it was designed.

O.C. 885-2001, s. 5.

### **DIVISION III ESTABLISHMENT CONDITIONS**

**6. Access routes and passageways:** Access routes providing access to buildings and reserved pedestrian passages shall be:

- (1) kept in good condition and free from any obstructions;
- (2) maintained to keep the surface from becoming slippery;
- (3) protected from falling objects or materials;
- (4) properly lit.

O.C. 885-2001, s. 6.



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**7. Passageway markings:** In yards, passages and walkways reserved for pedestrians, and if applicable, their intersections with vehicle roadways, shall be clearly marked with signs in full view.

O.C. 885-2001, s. 7.

**8. Yards:** Yards or parts of yards used for the handling and transportation of supplies shall be kept level and drained so as to ensure safe usage, particularly in preventing the destabilization of loads, vehicles and equipment.

O.C. 885-2001, s. 8.

**9. Horizontal openings:** Excavations, wells or basins presenting a falling hazard shall be solidly covered or protected with guardrails on all exposed sides.

The same applies to vats, tanks, reservoirs, basins and other containers used for the storing or mixing of substances that are open and whose opening is less than 750 mm above floor level or above a working platform.

This section does not apply to basins used for recreational or fish-breeding purposes.

O.C. 885-2001, s. 9.

**10. Vertical openings:** Any opening made through a wall that presents a falling hazard for a worker or for any object shall be protected with a guardrail or a protective screen.

O.C. 885-2001, s. 10.

**11. Exceptions:** Sections 9 and 10 do not apply when the use of a cover, guardrail or protective screen prevents the carrying out of a task that could not be reasonably performed otherwise.

In such a case, the cover, guardrail or protective screen may be removed, but only while the work is being performed. The wearing of a safety harness is then compulsory for any worker exposed to a danger of falling in the opening, except if the worker is protected by some other device that provides him with equivalent safety or by a safety net.



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O.C. 885-2001, s. 11.

**12. Guardrails:** Any guardrail incorporated in a building, with the exception of a guardrail that is part of any equipment, shall comply with the National Building Code as applied at the time of its installation.

Other guardrails shall be so designed, constructed and installed as to withstand the following minimum loads:

- (1) a 0.55 kN horizontal single point load applied at any location on the top rail;
- (2) a 1.5 kN per linear metre load applied vertically at the top rail.

In addition, such guardrails shall be provided with a top rail located between 900 mm and 1,100 mm from the floor and at least an intermediate rail fixed at midway between the top rail and the floor.

The intermediate rail may be replaced by balusters or panels.

O.C. 885-2001, s. 12.

**13. Toeboard:** If there is danger from falling objects capable of causing injuries, the guardrails shall be fitted with a minimum 100 mm high toeboard at floor level.

O.C. 885-2001, s. 13.

**14. Floor:** Any floors shall be:

- (1) kept in good order, clean and free from any obstruction;
- (2) provided with walkways that comply with section 15;
- (3) provided with drains, if required for maintenance and the draining off of liquids;
- (4) free from any opening capable of causing an accident, unless they are protected with a guardrail or a cover capable of withstanding loads to which they may be exposed.

O.C. 885-2001, s. 14.

**15. Walkways:** Walkways inside a building shall:



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- (1) be kept in good order and free from any obstruction;
- (2) be maintained to keep the surface from becoming slippery, even through wear or humidity;
- (3) be wide enough to allow the safe handling of materials and be at least 600 mm wide;
- (4) be at least 1,100 mm wide if they serve as direct access to an exit;
- (5) be clearly marked out by lines traced on the floor or be bordered by facilities, equipment, walls or material or merchandise depots, to permit the safe passage of persons;
- (6) have a free space of at least 2 m above the floor unless the danger is made known by means of a visible sign;
- (7) be equipped with a guardrail wherever there is a falling hazard.

O.C. 885-2001, s. 15.

**16. Work stations:** A work station shall

- (1) be kept in good condition and free from any obstructions;
- (2) be situated on a surface that is maintained so as not to become slippery, even through wear or humidity;
- (3) have sufficient free space between machines, facilities or material depots in order that workers may carry out their task safely; this free space shall not be less than 600 mm.

Subparagraph 3 of the first paragraph does not apply to a work station in a vehicle.

O.C. 885-2001, s. 16.

**17. Cleaning:** Subject to section 326, the upkeep of the work premises of an establishment shall be ensured through vacuuming, wet mopping or any other method that controls and reduces to a maximum the stirring up of dust.

O.C. 885-2001, s. 17.





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**18. Refuse containers:** Refuse, sweepings and other residues shall be removed from work stations.

Appropriate containers shall be available in various locations for such purpose.

O.C. 885-2001, s. 18.

**19. Location of machines:** Machines shall be located in such manner as to provide necessary free space for their upkeep and the safe handling of material and refuse.

O.C. 885-2001, s. 19.

**20. Machine guidance tracks:** Machine guidance tracks such as those of conveyors, gantries or machines used for transporting persons or things, can only be crossed in the following cases:

- (1) at places protected and so designated;
- (2) according to a procedure ensuring worker safety;
- (3) at any place where they can be crossed safely, in the case of a slow-moving conveyor.

O.C. 885-2001, s. 20.

**21. Work station access:** Machines, machine rooms or service platforms for these machines, which constitute a work station, shall, if they are situated above or below a floor and if they are not serviced by a stairway, be accessible by a service stairway, an access ramp or a fixed ladder.

However, access to such a place by means of a fixed ladder is prohibited when a worker cannot use both hands for holding onto the side rails or rungs of the permanent ladder.

This section does not apply to a vehicle.

O.C. 885-2001, s. 21.

**22. Service stairs:** Any service stairs shall:



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- (1) have a minimum width of 550 mm for stairways built or modified on or after 2 August 2001;
- (2) have a slope between at least 20° and at most 50° with the horizontal, except for stairways installed before 1 January 1973 which may have a slope up to 60°;
- (3) be provided with guardrails along any free side;
- (4) be provided with steps having:
  - (a) a uniform depth and width in any one flight;
  - (b) a depth of at least 150 mm (nose excluded);
  - (c) a maximum height of 240 mm, except for stairs built before 1 January 1973 for which the stair height may reach 280 mm;
- (5) have a free space of at least 2 m above each stair, measured from the nose or the forward part of the stair.

The depth of stairs on circular or spiral service stairs shall measure 230 mm from the post or the supports for the inside railing.

Subparagraph 5 of the first paragraph applies only to stairs built, installed or modified on or after 2 August 2001 and whose construction, installation or modification does not require a modification of the existing building structure. Stairs that do not have to comply with subparagraph 5 shall have an adequate warning sign.

O.C. 885-2001, s. 22.

**23. Permanent ladders:** Permanent ladders used to replace service stairs shall:

- (1) be of safe construction and solidly anchored to withstand a mass of 90 kg at the centre of the rungs with a safety factor of 4;
- (2) for ladders exceeding 9 m, have rest platforms equipped with guardrails, at least at 6 m intervals;
- (3) have a free space behind the rungs of at least 150 mm;
- (4) have a free space on each side of at least 375 mm and forward of at least 800 mm, measured from the centre of a rung;
- (5) extend 900 mm beyond the top storey;



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(6) be provided with guardrails surrounding the floor opening with a removable gate for access to the ladder;

(7) be provided with crinolines or cages or a fall arrestor in compliance with CAN/CSA Standard Z259.2.1-98 Fall Arresters, Vertical Lifelines and Rails, where there is danger of a fall greater than 6 m.

Subparagraphs 3 and 4 of the first paragraph apply only to permanent ladders built, installed or modified on or after 2 August 2001.

O.C. 885-2001, s. 23.

**24. Exception:** Notwithstanding subparagraph 2 of section 23, the permanent ladders servicing elevated towers, water reservoirs or other elevated constructions to which workers only occasionally have access, may be exempt from rest platforms.

O.C. 885-2001, s. 24.

**25. Compliance with the standard:** Any portable ladder and any stepladder used on a work site shall comply with the CAN3-Z11-M81 Portable Ladders standard.

However, portable ladders and stepladders in use on 2 August 2001 may also be used if they are in good condition and if they comply with the ACNOR Z11-1969 Portable Ladders standard.

This section does not apply to three-rail orchard ladders.

O.C. 885-2001, s. 25.

**26. Operating conditions:** Portable ladders shall:

- (1) rest on a firm base with the upper part propped on the 2 siderails;
- (2) be firmly held in place by one or more persons, if they are not firmly attached and if their length is equal to or more than 9 m;
- (3) be protected against any sliding and against any shock that could compromise equilibrium;
- (4) if not firmly fixed, be so inclined that the horizontal distance between the base of the ladder and the vertical plane of its top support is approximately between the quarter and the third of the length of the ladder between its supports;



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- (5) where used as a means of access:
  - (a) be firmly fixed in place;
  - (b) extend 900 mm beyond the top storey;
  - (c) have a space behind the rungs of at least 150 mm;
- (6) be set in such a manner that there is sufficient space at the base allowing safe access;
- (7) never be used as a horizontal prop;
- (8) never be linked to another ladder, end to end, by lapped joints;
- (9) when used close to electrical conductors, be made of wood or other insulating material;
- (10) have a sufficient length so the worker does not work from the 2 top rungs;
- (11) not be put on scaffolding, an elevated platform, an aerial basket or platform, on crates, barrels or in front of a door opening onto the ladder.

O.C. 885-2001, s. 26.

**27. Maximum length:** The length of a portable extension ladder with 2 or more extensions, measured along the siderails, cannot exceed 15 m.

O.C. 885-2001, s. 27.

**28. A stepladder:** Any stepladder used on a work site shall:

- (1) when used close to electrical conductors, be made of wood or other insulating material;
- (2) have the legs fully spread and the retaining device locked.

O.C. 885-2001, s. 28.

**29. Prohibited usage:** The top and the pail shelf of a stepladder shall never be used as a step.

O.C. 885-2001, s. 29.





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DRILLING  
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**30. Safety precaution:** The worker shall always be turned facing the ladder or stepladder while climbing or descending.

O.C. 885-2001, s. 30.

**31. Gangways and stationary platforms:** Gangways and stationary platforms shall:

- (1) not be subject to loads greater than the ones specified by the manufacturer or by an engineer;
- (2) be provided with guardrails complying with sections 12 and 13 on the sides exposed to falls, if their height from the ground or floor is higher than 450 mm, except for unloading piers and loading platforms;
- (3) if made of perforated materials and located more than 1.8 m from the floor or the ground, not include openings through which a sphere 30 mm in diameter can pass;
- (4) have a minimum width of 600 mm for gangways or platforms built or modified on or after 2 August 2001;
- (5) have a free space of at least 2 m above and below, unless a danger sign is posted.

O.C. 885-2001, s. 31.

**32. Installation of scaffolds:** Scaffolds or devices designed and built for lifting persons shall be used in places where workers, from the ground or a solid structure, are unable to perform their work.

However, the use of a ladder or stepladder is permitted for work of short duration.

O.C. 885-2001, s. 32.

**33. Operating conditions:** Scaffolds shall be designed for the type of work to be performed and the probable risks. They shall meet the following conditions:

- (1) be so designed, constructed, trussed, braced and maintained as to support any loads and stresses they may be subjected to, and resist wind action;



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- (2) have a safety factor of at least 4 for each constituent element;
- (3) rest on firm ground or foundations;
- (4) be provided with guardrails when workers are exposed to a danger of falling more than 3 m.

The guardrails of the scaffolds may be temporarily removed if they prevent the carrying out of work that cannot reasonably be performed otherwise. In these cases, the wearing of a safety harness is compulsory for the worker and the worksite shall be marked off to prevent access to those persons not working there.

O.C. 885-2001, s. 33.

#### **DIVISION IV** EMERGENCY SAFETY PRECAUTIONS

**34. Evacuation plan:** In any establishment, an emergency evacuation plan shall be drawn up and be in force, if applicable.

O.C. 885-2001, s. 34.

**35. Drills:** Rescue and evacuation drills shall be held at least once a year. These drills are to be adapted to risks found in the establishment as well as to the nature of activities carried on there.

O.C. 885-2001, s. 35.

**36. Portable fire extinguishers:** portable fire extinguishers shall be installed in all buildings so that action may be taken in the early stages of a fire.

The choice, installation, utilization and maintenance of these portable fire extinguishers shall comply with the NFPA-10 Portable Fire Extinguishers standard, applicable according to the year the extinguishers were installed.

Additional fire extinguishers shall be installed in places where there is a localized risk of fire.

O.C. 885-2001, s. 36.



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**37. Operating conditions:** Portable fire extinguishers shall:

- (1) be approved by Underwriters' Laboratories of Canada (ULC);
- (2) provide protection according to the nature of the hazard;
- (3) be filled after use;
- (4) bear the name of the person entrusted therewith and the date of the last inspection.

O.C. 885-2001, s. 37.

**38. Emergency systems:** Alarm and detection systems as well as emergency lighting shall always be in good working order.

O.C. 885-2001, s. 38.

**DIVISION V**  
**AIR QUALITY**

**39. Replacement:** Insofar as possible, dangerous substances that are sources of dusts, fumes, mists, vapours or gases shall be replaced with substances that are not dangerous or are the least dangerous possible.

O.C. 885-2001, s. 39.

**40. Oxygen:** Subject to section 45, the percentage in volume of airborne oxygen in any work location of an establishment shall not be less than 19.5% at normal atmospheric pressure.

O.C. 885-2001, s. 40.

**41. Standards:** Subject to section 45, any establishment whose operation could cause the emission of gases, dusts, fumes, vapours and mists into the work area shall be operated so that the concentration of any gas, dust, fume, vapour or mist does not exceed, in the respiratory zone of the workers, the standards provided for in Schedule I for any time period specified therein.

The use of crocidolite, amosite or a product containing either of these substances is prohibited, except where their replacement is not reasonable or practicable.

Such an establishment shall be designed, constructed, fitted or provided with an evacuation system for gases, dusts, fumes, vapours or mists to comply with the standards provided for in the first paragraph.

The first paragraph also applies to any work station located in a vehicle, wherever situated.

O.C. 885-2001, s. 41.

**42. Carcinogenic and isocyanate substances:** When a worker is exposed to a substance identified in Schedule I as having a known or suspected carcinogenic effect on humans or being diisocyanate or isocyanate oligomers, such exposure shall be reduced to a minimum, even when it remains within the standards in that Schedule.

O.C. 885-2001, s. 42.

**43. Measurement:** In any establishment that employs 50 workers or more where the concentration of gases, dusts, fumes, vapours or mists at a work location exceeds or could exceed the standards prescribed in Schedule I, the concentration of such gases, dusts, fumes, vapours or mists emitted into the work environment concerned shall be measured at least once a year, in compliance with paragraph 1 of section 44.

However, in any establishment where workers are exposed to asbestos, the concentration of airborne asbestos dust and the concentration of respirable asbestos fibres in the respiratory zone of the workers shall also be measured at least once a year. A sampling strategy may provide for more frequent measuring, at shorter intervals, depending on the extent of the risk to the health, safety or physical well-being of the workers.

These measurements shall also be taken each time there is a change in industrial processes or each time facilities are installed for improving the quality of the air in the work environment of the establishment.

The results of any measurement of the quality of the air taken in the work environment by the employer shall be entered in a register that shall be kept by the employer for a period of at least 5 years.

O.C. 885-2001, s. 43.

**44. Methods:** Dusts, gases, fumes, vapours and mists found in the workplace environment shall be measured in the respiratory zone of workers





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or, if this proves to be impossible owing to the lack of equipment for taking a sampling in this zone, then outside the breathing zone but in a place located as close as possible to such zone.

These dusts, gases, fumes, vapours and mists found in the workplace environment shall be sampled and analyzed to obtain an accuracy equivalent to that obtained by applying the methods described in the Sampling Guide for Air Contaminants in the Workplace published by the Institut de recherche Robert-Sauvé en santé et sécurité du travail du Québec.

The sampling strategy for these contaminants shall be carried out in accordance with common practices in industrial hygiene as summarized in the aforementioned guide.

O.C. 885-2001, s. 44.

## **DIVISION VI**

### **INDIVIDUAL PROTECTIVE RESPIRATORY EQUIPMENT**

**45. Protective equipment:** Where existing technology prevents an employer from complying with sections 40 and 41, and for work involving maintenance, inspection or repairs outside the workshop, or transportation where the standards provided for in sections 40 and 41 are not complied with or, where the technology exists, while waiting for the measures required for compliance with those sections to be implemented, the employer shall provide the worker, free-of-charge, with respiratory protective equipment and ensure that he uses it, as indicated in the Guide des appareils de protection respiratoire utilisés au Québec, published by the Institut de recherche Robert-Sauvé en santé et en sécurité du travail.

The equipment shall be selected, adjusted, used and cared for in accordance with the CSA Standard Z94.4-93 Selection, Use and Care of Respirators. A respiratory protection program shall be drafted and applied in compliance with that standard.

Notwithstanding the foregoing, where the exposure of a worker to asbestos does not exceed 5 times the time-weighted average exposure value, the employer may provide him with a mask certified at a minimum FFP2, pursuant to the Appareils de protection respiratoire: demi-masques filtrants contre les particules: exigences, essais, marquage EN-149 Standard of the European Committee for Standardisation, by a laboratory accredited by the latter. In such case, the employer shall make sure that the worker wears this equipment.



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The preceding provision in no way diminishes the employer's obligation to reduce at the source the dangers to the health, safety and physical well-being of workers.

O.C. 885-2001, s. 45.

**46. Prohibition:** Notwithstanding section 45, an employer may not provide the worker with a self-contained or air-supplied protective respiratory apparatus equipped with an automatic device which interrupts or restricts the air supply in the part of the apparatus covering the face.

O.C. 885-2001, s. 46.

**47. Use of protective equipment:** The respiratory protective equipment prescribed in section 45 shall be:

- (1) designed to offer protection from the danger to which the worker is exposed;
- (2) kept in good working order;
- (3) inspected by the worker each time he wears it;
- (4) inspected by the employer at least once a month and each time the worker using the equipment reports to his employer that it is not working properly;
- (5) disinfected before being used by another worker, except in an emergency;
- (6) stored in a clean place.

The principles of operation and the use of the equipment shall be explained to the workers, and the employer shall ensure that its use is fully understood by the workers.

O.C. 885-2001, s. 47.

**48. Air supply:** Compressed breathing air for supplied-air respirators or self-contained respiratory protective apparatuses referred to in section 45 must comply with CSA Standard CAN/CSA-Z180.1-00, Compressed Breathing Air and Systems, and compressed breathing air that supplies diving equipment must comply with CSA Standard CAN3 Z180.1-M85, Compressed Breathing Air and Systems. Systems that produce, store and distribute air must comply with the standard that applies to them.



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DRILLING  
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Samples of compressed breathing air shall be taken and analyzed to obtain an accuracy equivalent to that obtained by applying the methods described in the Sampling Guide for Air Contaminants published by the Institut de recherche Robert-Sauvé en santé et sécurité du travail du Québec. The analyses must be made at least every 6 months, except for ambient air systems. The results of these analyses shall be entered in a register that shall be kept for a period of at least 5 years.

Breathable compressed air supply and distribution systems shall be maintained in compliance with the manufacturers' instructions. The date on which such maintenance is performed as well as the name of the person who performed it shall be recorded by the employer in a register that shall be kept for a period of at least 5 years.

O.C. 885-2001, s. 48; O.C. 915-2011, s. 1.

## **DIVISION VII**

### **FLAMMABLE VAPOURS AND GASES**

**49. Lower explosion limit:** The concentration of inflammable vapours or gases in a building or other workplace that is not an enclosed area shall be kept below 25% of the lower explosion limit.

O.C. 885-2001, s. 49.

**50. Flammable source:** No flammable source shall be allowed either inside or outside, where the concentration of flammable gases or vapours is equal to or exceeds 25% of the lower explosion limit.

O.C. 885-2001, s. 50.

**51. Smoking prohibition:** Smoking in any area where there may be flammable vapours or gases is prohibited.

O.C. 885-2001, s. 51.

**52. Static electricity:** In areas or rooms containing flammable vapours or gases, the following rules must be complied with:

(1) any metallic equipment and machine must be bonded together and commonly grounded or be grounded separately to a grounding network with

equivalent conductivity so as to prevent the accumulation of static electricity;  
and

(2) any non-metallic equipment and machine must be built and installed to first limit the accumulation of static electricity under a safety threshold and then to prevent such an accumulation in excess of the safety threshold.

O.C. 885-2001, s. 52; O.C. 392-2011, s. 1.

**53. Ventilation system:** Any ventilation system for removing flammable vapours or gases that may present a danger of fire or explosion shall:

(1) be made of non-combustible substances;

(2) use ventilators whose rotating parts are made of materials that do not produce sparks;

(3) have all metallic components bonded together and commonly grounded or grounded separately to a grounding network with equivalent conductivity so as to prevent the accumulation of static electricity;

(3.1) have all non-metallic components built and installed to first limit the accumulation of static electricity under a safety threshold and then to prevent such an accumulation in excess of the safety threshold;

(4) be equipped with airtight exhaust conduits oriented directly outdoors without ever passing through an intermediate room, and built to resist explosions.

O.C. 885-2001, s. 53; O.C. 392-2011, s. 2.

## **DIVISION VIII**

### **COMBUSTIBLE DUSTS AND DRY MATERIALS**

**54. Preventive cleaning:** All rooms where combustible dusts are generated shall be cleaned as often as necessary to prevent the accumulation of dusts on floors, beams, equipment, and machines, in quantities that can present a fire or explosion hazard.

O.C. 885-2001, s. 54.

**55. Static electricity:** The rules provided for in section 52 apply in areas or rooms containing combustible dusts that present a fire or explosion hazard.





**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 55; O.C. 392-2011, s. 3.

**56. Flammable source:** No flammable source is permitted in areas where combustible dusts present a fire or explosion hazard. Smoking is prohibited.

O.C. 885-2001, s. 56.

**57. Fire or explosion hazard:** Machines and equipment presenting a fire or explosion hazard due to combustible dusts, shall be so located, constructed, enclosed or purged as to protect employees near such machines or equipment.

O.C. 885-2001, s. 57.

**58. Collection and processing systems:** In addition to the requirements of section 108, every blower, conveyor, transfer or processing system for pulverized combustible dust and any other suspended matter presenting a fire or explosion hazard must be designed, built, installed, used and maintained in compliance with the following standards according to their respective application:

(1) NFPA Standard 61-2002 Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities;

(2) NFPA Standard 484-2002 Combustible Metals, Metal Powders and Metal Dusts;

(3) NFPA Standard 664-2002 Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities.

For any other field of application, the system must comply with NFPA Standard 654-2000 Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids.

Any system referred to in the first paragraph installed before 4 January 2007 must comply with one of those standards or with the standard applicable at the time of the installation of the system.

O.C. 885-2001, s. 58; O.C. 1120-2006, s. 1.

**59. Enclosed dust collectors:** Every enclosed collector for combustible dust or any other suspended matter presenting a fire or explosion hazard must



**LOGAN  
DRILLING  
GROUP**

- (1) be designed, manufactured and maintained according to the rules of the trade; and
- (2) be placed and installed
  - (a) outside a building if provided with explosion vents in compliance with NFPA Standard 68-1998 Guide for Venting of Deflagrations; vents already installed on collectors on 4 January 2007 must also comply with that standard or with the standard applicable at the time of installation of the vents and be in good order;
  - (b) inside a building in either of the following cases:
    - (i) if adjacent to an outside wall or ceiling towards which the explosion vents are channelled by explosion proof ducts and if they comply with NFPA Standard 68-1998 Guide for Venting of Deflagrations; vents already installed on the collectors on 4 January 2007 must also comply with that standard or with the standard applicable at the time of the installation of the vents and be in good order; or
    - (ii) if equipped with an automatic explosion prevention system in compliance with NFPA Standard 69-2002 Explosion Prevention Systems; the automatic prevention systems installed on the collectors on 4 January 2007 must also comply with that standard or with the standard applicable at the time of the installation of the systems and be in good order.

O.C. 885-2001, s. 59; O.C. 1120-2006, s. 1.

**59.1. Open dust collectors:** Every open collector for combustible dust or any other suspended matter presenting a fire or explosion hazard and used in the wood industry may be placed and installed inside a building

- (1) if it is not connected to a sander or abrasive planer with mechanical feed;
- (2) if its capacity does not exceed 2.4 m<sup>3</sup> per second;
- (3) if the fan motor is designed for Class II or III locations according to the Canadian Electrical Code, First Part, Nineteenth Edition, CSA Standard C22-10-04 with Québec Amendments;
- (4) if it is emptied as needed sufficiently often to ensure safety and collecting efficiency;
- (5) if installed at least 6 m from a work station, a travelway or an emergency exit, unless a protective blast screen, such as a steel sheet, a fire-



**LOGAN  
DRILLING  
GROUP**

resistant synthetic sheet or a gypsum wall, is installed between the station, the travelway or the exit and the open dust collector if it is not possible to comply with that distance; and

(6) where there is more than one open dust collector, if the collectors are at least 6 m apart, unless a protective blast screen, such as a steel sheet, a fire-resistant synthetic sheet or a gypsum wall is installed between the collectors if it is not possible to comply with that distance.

For the purposes of this section, “open dust collector” means equipment for the separation of air from solid particles designed and used to remove dust and having the following features:

- (1) filtering is done by dust-laden air passing through a filtering element that gathers dust inside the filter and allows clean air to return to the ambient air;
- (2) the filtering element is not enclosed or installed in a rigid casing;
- (3) the filtering element is not shaken mechanically or by pulsed air jets;
- (4) the filtering element is under positive pressure; and
- (5) the cleaning of collected dust is neither continuous nor mechanical.

O.C. 1120-2006, s. 1.

**60. Silos:** Silos used for storing dry combustible substances shall be:

- (1) made of fire resistant materials;
- (2) provided with covers and adequate ventilation;
- (3) provided with explosion vents complying with NFPA Standard 68-1998 Guide for Venting of Deflagrations, where there is a risk of explosion. Vents already installed in silos on 2 August 2001 may also be used if they comply with a previous text of that standard and are in good working order.

O.C. 885-2001, s. 60.

## **DIVISION IX**

### **SPECIAL PROVISIONS CONCERNING VARIOUS DANGEROUS SUBSTANCES**

**61.** *(Revoked).*



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 61; O.C. 476-2013, s. 1.

**62. Dust or scraps:** Any asbestos dust or scraps of crumbling material whose concentration of asbestos is at least 0.1% shall be stored and transported in a sealed container.

For the purposes of this section, the second paragraph of section 69.5 applies.

A label shall be affixed to any container referred to in the preceding paragraph. The label shall permanently include the following indications and be easily legible:

- (1) materials containing asbestos;
- (2) toxic if inhaled;
- (3) keep container tightly closed;
- (4) do not inhale the dust.

O.C. 885-2001, s. 62; O.C. 476-2013, s. 2.

**63. Protective suit:** The employer shall supply a protective suit to any worker whose personal clothing risks being contaminated by chrysotile asbestos fibres from exposure thereto while performing his duties.

The employer shall ensure the care of this protective suit that shall not be worn outside the workplace.

O.C. 885-2001, s. 63.

**64. Lead:** The recovery of lead or lead products and other related operations shall be performed inside an establishment in compliance with the requirements under section 107.

O.C. 885-2001, s. 64.

**65. Floor:** In any establishment where lead, mercury or their compounds are handled, stored or used in either solid or liquid form, the floor covering shall be made of a non-porous material.

O.C. 885-2001, s. 65.





**LOGAN  
DRILLING  
GROUP**

**66. Protective clothing:** The employer shall make sure that workers wear protective clothing used exclusively for their work when performing any of the following activities:

- (1) the recovery or melting of lead or lead products;
- (2) the manufacturing of lead batteries;
- (3) the manufacturing of lead powders or salts, chlorine, fluorescent lamps or caustic soda where workers must handle lead or mercury;
- (4) any work involving exposure to crocidolite asbestos, amosite or any other type of amphibole;
- (5) any work involving exposure to chrysotile asbestos fibres that cannot be contained within the exposure value levels specified in Schedule I.

Before reuse, the employer shall ensure that such clothing has been cleaned with a vacuum equipped with a high-efficiency filter, unless the clothing has been washed.

O.C. 885-2001, s. 66.

**67. Double changing room:** 2 separate lockers: one for the worker's street clothes and the other for his work clothes shall be put at his disposal in an establishment where workers are exposed to lead, mercury, asbestos or beryllium or their compounds, in the form of steam or dust.

These lockers shall be placed in 2 separate rooms used exclusively for that purpose, between which a shower room shall be installed so that the workers may take a shower before putting on their street clothes. The storage space of each locker shall be at least 0.14 m<sup>3</sup>, and there shall be a clearance of at least 600 mm in front of each row of lockers.

Workers thus exposed may not wear their work clothes elsewhere than on the work premises.

O.C. 885-2001, s. 67.

**68. Abrasive blast cleaning:** Any industrial cleaning operation using abrasive air blasting inside an establishment shall be carried out in an isolated room or booth ventilated by extraction.

O.C. 885-2001, s. 68.



**LOGAN  
DRILLING  
GROUP**

**69. Other protective equipment:** In addition to the requirements under section 68, the employer shall make sure that any worker exposed to dust raised by abrasive air blast cleaning wears an air-supplied abrasive hood, gloves, leg protectors and clothing designed to ensure protection from dust and abrasive or metal projections. This equipment shall be put at the disposal of workers by the employer.

The worker shall put on, remove and store the protective equipment described in the first paragraph away from the place where the abrasive air blast cleaning is being carried out.

O.C. 885-2001, s. 69.

## **DIVISION IX.I**

### **PROVISIONS ON THE SAFE MANAGEMENT OF ASBESTOS**

O.C. 476-2013, s. 3.

**69.1. Definitions:** In this Division,

“flocking” means a mixture of friable materials applied by spray to cover a surface; (*flocage*)

“heat insulating material” means insulating material that covers a facility or equipment to prevent heat loss. (*calorifuge*)

O.C. 476-2013, s. 3.

**69.2. Concentration:** For the purposes of this Division, a material, product, flocking or heat insulating material contains asbestos where the asbestos concentration is at least 0.1%.

O.C. 476-2013, s. 3.

§1. *Flocking and heat insulating material*

O.C. 476-2013, s. 3.

**69.3. Inspection:** Every building built before 15 February 1990 must be inspected in order to locate flocking containing asbestos.



**LOGAN  
DRILLING  
GROUP**

Every building built before 20 May 1999 must be inspected in order to locate heat insulating material containing asbestos.

It is the employer's responsibility to locate flocking and heat insulating material in respect of any building under the employer's authority.

O.C. 476-2013, s. 3.

**69.4. Demonstration:** Flocking and heat insulating material are presumed to contain asbestos unless demonstrated otherwise by

(1) verifiable documentary information, such as a technical description or a material safety data sheet, which establishes the composition of flocking and heat insulating material or the date of their installation; or

(2) a sampling report complying with section 69.7 including the results of an analysis carried out on a sufficient number of representative samples so that the presence of asbestos on flocking and heat insulating material may be shown in accordance with section 69.5.

O.C. 476-2013, s. 3.

**69.5. Analysis:** The analysis of samples must be carried out according to one of the methods specified in the Sampling Guide for Air Contaminants in the Workplace, published by the Institut de recherche Robert-Sauvé en santé et en sécurité du travail, as it reads at the time that it is applied, or according to a method enabling to obtain an equivalent accuracy.

Depending on the analysis method used, a concentration result greater than trace is equivalent to an asbestos concentration of at least 0.1%.

The laboratory that carries out the analysis must participate in an interlaboratory quality control program.

O.C. 476-2013, s. 3.

**69.6. Results:** Flocking or heat insulating material from which a sample was taken is deemed to contain asbestos if the sample's asbestos concentration is at least 0.1%.

O.C. 476-2013, s. 3.

**69.7. Sampling report:** The employer must obtain a sampling report where samples are taken for analysis from flocking and heat insulating material.

Such a report must contain the following information:

- (1) the name and qualification of the person responsible of the sampling report;
- (2) for each flocking and heat insulating material, a list of the samples taken and their location;
- (3) the analysis report of the samples;
- (4) the analysis method used; and
- (5) the name and address of the laboratory having carried out the analyses and the identification of the interlaboratory quality control program in which the laboratory participates.

O.C. 476-2013, s. 3.

**69.8. Frequency of inspections:** The employer must check, during the initial inspection and every 2 years thereafter, flocking and heat insulating material containing asbestos, except if they are entirely enclosed in a permanent structure resistant to fibres and access to flocking and heat insulating material is only possible by a destructive operation of the structure.

For the purposes of this section, the protective coating of heat insulating material does not constitute a permanent structure.

O.C. 476-2013, s. 3.

**69.9. Corrective measures:** Where flocking or heat insulating material is liable to produce asbestos dust emissions, the employer must, taking into account the degradation and dispersal factors, remove it, enclose it entirely in a permanent structure resistant to fibres, coat it with or soak it in a binder, or cover it with material resistant to fibres.

O.C. 476-2013, s. 3.

## *§2. Materials and products containing asbestos*

O.C. 476-2013, s. 3.





**LOGAN  
DRILLING  
GROUP**

**69.10. Exclusions:** For the purposes of this subdivision, gypsum boards and joint compounds manufactured after 1 January 1980 are deemed not to contain asbestos.

O.C. 476-2013, s. 3.

**69.11. Verification:** Before undertaking work liable to generate dust by a direct or indirect action on or inside a building or any civil engineering works under the employer's authority, the employer must check for the presence of asbestos in the materials and products likely to contain some.

Depending on the availability of information, the employer must also check for the presence of asbestos when purchasing those materials or products.

The employer may be exempted from the obligation imposed by the first paragraph if the employer shows that the work to be carried out is not liable to produce asbestos dust emissions.

O.C. 476-2013, s. 3.

**69.12. Applicable provisions:** Sections 69.4 to 69.7 apply to a material or product likely to contain asbestos, with the necessary modifications.

O.C. 476-2013, s. 3.

**69.13. Corrective measures:** Where an interior finish likely to contain asbestos may emit dust because of its state, the employer must repair it or remove it taking into account the degradation and dispersal factors.

O.C. 476-2013, s. 3.

**69.14. Control of dust emissions:** The employer must take the required measures to control the emission of asbestos dust before undertaking work on materials or products, including flocking and heat insulating material, containing asbestos. The employer has, in that respect, the same obligations as those provided for in the Safety Code for the construction industry (chapter S-2.1, r. 4).

The employer may be exempted from the obligations imposed by the first paragraph if the employer shows that the work to be carried out is not liable to produce asbestos dust emissions.



**LOGAN  
DRILLING  
GROUP**

O.C. 476-2013, s. 3.

**69.15. Training and information:** Before undertaking work liable to produce asbestos dust emissions, the employer must train and inform the worker of the risks, prevention methods and safe working methods relevant to the work to be carried out.

O.C. 476-2013, s. 3.

*§3. Recording and disclosure of information*

O.C. 476-2013, s. 3.

**69.16. Register:** The employer must keep and update a register that must contain the following entries and documents:

(1) the location of flocking and heat insulating material that were inspected and the location of the materials and products that were checked;

(2) the presence and type of asbestos or the absence of asbestos, in flocking and heat insulating material, materials and products, and the verifiable documentary information or sampling reports carried out by the employer indicating the types of asbestos or showing the absence of asbestos;

(3) the dates and results of the inspections of flocking and heat insulating material containing asbestos conducted in accordance with sections 69.3 and 69.8 and the dates and results of any other verification of materials and products; and

(4) the nature and the date of the work carried out on flocking, heat insulating material, materials and products containing asbestos.

The employer must keep the register provided for in the first paragraph for as long as the building or civil engineer works are under the employer's authority.

The employer must put the register at the disposal of workers and their representatives who work in the employer's establishment.

O.C. 476-2013, s. 3.

**69.17. Disclosure of information:** The employer must disclose to every person who plans to or will carry out work liable to produce asbestos dust emissions the entries relevant to that work that are noted in the register provided for in section 69.16, so that the person may plan and implement the required measures.

Every person who plans to or will carry out work liable to produce asbestos dust emissions must so inform all the workers likely to be exposed to asbestos dust.

O.C. 476-2013, s. 3.

## **DIVISION X**

### **STORAGE AND HANDLING OF DANGEROUS SUBSTANCES**

#### *§1. Interpretation and general provisions*

**70. Dangerous substances:** In this Division, “dangerous substance” means a substance that is either a controlled product or a substance that appears on the list in Schedule II and that belongs to one of the following categories:

- (1) compressed gases;
- (2) flammable and combustible substances;
- (3) combustive substances;
- (4) toxic substances;
- (5) corrosive substances;
- (6) dangerously reactive substances.

O.C. 885-2001, s. 70.

**71. Controlled product:** In this Division, “controlled product” means a product controlled within the meaning of the Regulation respecting information on controlled products (chapter S-2.1, r. 8).

A dangerous substance that is both a controlled product and one appearing on the list in Schedule II shall meet the requirements of this section applying to it, as regards each and every category to which it belongs both as a controlled product and a substance appearing on the list.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 71.

**72. Safety precautions:** The storage and handling of dangerous substances shall be so controlled as to prevent accidental spillage or lighting of these substances. The following precautions shall be taken:

- (1) separate or isolate any dangerous substances which when mixed with other substances, may cause a fire or an explosion, or may discharge flammable or toxic gases;
- (2) keep containers, piping and other apparatus in good working order;
- (3) clean immediately but safely any dangerous substance spilled on floors or shelves;
- (4) when pouring from one container to another, use a secure recipient taking into account the type of dangerous substance being poured;
- (5) depending on the category in which the dangerous substance is classified, it shall comply with sections 77 to 99.

O.C. 885-2001, s. 72.

**73. Monitoring devices:** The devices for monitoring any open recipient containing liquid state dangerous substances at temperatures in excess of 60 °C shall be isolated or equipped with screens in order to protect workers from splashes if such substances are agitated or heated.

O.C. 885-2001, s. 73.

**74. Level indicators:** Level indicators on reservoirs, vats or other containers with liquid state dangerous substances at temperatures in excess of 60 °C shall be provided with protective screens.

O.C. 885-2001, s. 74.

**75. Emergency equipment:** Emergency showers and eye wash fountains shall be put at the disposal of workers in the following circumstances:

- (1) when a corrosive substance or other dangerous substance is likely to rapidly cause serious or irreversible damage to the skin or eyes of workers;





**LOGAN  
DRILLING  
GROUP**

(2) when a toxic substance is likely to be rapidly absorbed by the skin or the eyes and cause them to have serious irritations.

In other cases, equipment for rinsing eyes and washing skin, such as showers, portable showers, eye wash fountains or any other type of plumbing shall be put at the disposal of workers, according to the nature of the dangers to which they are exposed. Such equipment shall be located near the work station of the exposed workers.

O.C. 885-2001, s. 75.

**76. Shower facilities:** Emergency showers and eye wash fountains referred to in the first paragraph of section 75 shall be clearly identified and easily accessible. In addition, they shall be located within the immediate vicinity of exposed workers and supplied with warm water.

Water from showers supplied by a drinking water network as well as water supplying portable showers shall be regularly changed to ensure its safety.

The warm water supply only applies to showers installed or modified on or after 2 August 2002.

O.C. 885-2001, s. 76.

## §2. *Compressed gases*

**77. Compressed gas cylinders:** All compressed gas cylinders shall:

(1) comply with the Act respecting pressure vessels (chapter A-20.01) and its regulations;

(2) be kept away from any source of heat and not be exposed to temperatures in excess of 50 °C;

(3) be used only for the purposes for which they were designed;

(4) be handled in such a manner as not to damage them, and be fastened upright or held in a cart when in use;

(5) be kept in an upright position with the valves facing upwards and be solidly held in place;

(6) be equipped with a protective cap for the valves when not connected for use.

O.C. 885-2001, s. 77.



**LOGAN  
DRILLING  
GROUP**

**78. Compressed gas cylinders in series:** Compressed gas cylinders linked in a series via a collector shall be supported, held together and form a unit by means of a rack or other frame designed for such purpose, and the cocks and safety valves shall be protected from being accidentally bumped or knocked.

O.C. 885-2001, s. 78.

**79. Prohibition:** The protective cap or a valve collar shall not be used for raising a compressed gas cylinder unless the collar has been specifically designed for such purpose.

O.C. 885-2001, s. 79.

**80. Propane gas:** Any propane gas cylinder that is not connected for use shall be stored in accordance with the Propane Installation Code, CAN/CGA B149.2-M91.

Non-reusable propane gas cylinders shall also be stored in compliance with paragraph 9.5.6 of that Code.

O.C. 885-2001, s. 80.

### *§3. Flammable and combustible substances*

**81. Storage:** Flammable and combustible substances shall be stored:

- (1) away from areas with a high fire hazard;
- (2) away from combustive substances or powerful oxidizing agents.

O.C. 885-2001, s. 81.

**82. Liquid state flammables and combustibles:** The storage, handling and use of liquid state flammables and combustibles shall be carried out in accordance with NFPA Standard 30-1996 Flammable and Combustible Liquids Code.



**LOGAN  
DRILLING  
GROUP**

In the case of buildings in existence on 2 August 2001, the employer may, however, take precautions that ensure a level of safety equivalent to that prescribed in that standard.

O.C. 885-2001, s. 82; O.C. 1120-2006, s. 2.

**83. Gaseous state flammable substances:** Gaseous state flammable substances such as ammonia gas, hydrogen, acetylene and hydrogen sulfide shall never be stored with combustive substances or with oxidizing agents in a gaseous state such as chlorine, fluorine, nitrogen dioxide, nitrous oxides, nitrogen tetroxide, oxygen or compressed air.

O.C. 885-2001, s. 83.

**84. Reactive substances flammable in contact with air:** Reactive substances that are flammable in contact with air to the point of being able to burn shall be kept either:

- (1) under an inert liquid;
- (2) in an inert atmosphere;
- (3) in air-tight containers.

O.C. 885-2001, s. 84.

**85. Reactive substances flammable in contact with water:** Reactive substances that are flammable in contact with water shall be stored:

- (1) in closed containers;
- (2) away from sources of humidity;
- (3) away from plumbing with condensation or drippings.

O.C. 885-2001, s. 85.

#### §4. *Combustive substances*

**86. Interpretation:** For the purposes of sections 87 to 91, powerful oxidizing agents such as chlorine and fluorine are considered to be combustive substances.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 86.

**87. Storage:** Combustive substances shall be stored away from substances with which they may react and especially from the following substances:

- (1) a corrosive substance with which they may react by exploding;
- (2) an inflammable or combustible substance with which they may react violently;
- (3) a toxic substance;
- (4) a reducing agent, especially a metallic powder;
- (5) a substance which oxidizes easily, including wood surfaces.

O.C. 885-2001, s. 87.

**88. Containers for combustive substances:** Containers having combustive substances shall:

- (1) be stored closed;
- (2) have their content clearly identified;
- (3) be kept in cool, dry places.

O.C. 885-2001, s. 88.

**89. Gaseous state combustive substances:** Gaseous state combustive substances shall never be stored with gaseous state flammable substances.

O.C. 885-2001, s. 89.

**90. Ground:** Equipment, including machines, used for processing or handling combustive substances such as organic peroxides, nitrates and chlorates shall be grounded.

O.C. 885-2001, s. 90.



**91. Contaminated clothing:** Clothing contaminated by combusive substances shall be removed immediately and washed before being worn again.

O.C. 885-2001, s. 91.

*§5. Toxic substances*

**92. Storage:** Toxic substances shall be stored:

- (1) away from areas of high fire hazard and from heat sources;
- (2) away from combusive substances and powerful oxidizing agents;
- (3) in cool and well-ventilated areas.

O.C. 885-2001, s. 92.

**93. Overflow prevention devices:** Reservoirs and vats containing liquid state toxic substances shall be equipped with overflow prevention devices.

Level indicators on such open reservoirs and vats shall be provided with protective screens.

O.C. 885-2001, s. 93.

**94. Identification of cylinders:** Any cylinder containing a gaseous state toxic substance shall be clearly identified.

O.C. 885-2001, s. 94.

**95. Posting warnings:** A warning indicating the type of danger shall be posted at all entrances where a gaseous state toxic substance is stored.

O.C. 885-2001, s. 95.

*§6. Corrosive substances*

**96. Storage:** Corrosive substances shall be stored:

- (1) away from areas with a high fire hazard;



**LOGAN  
DRILLING  
GROUP**

- (2) away from combustive substances and powerful oxidizing agents;
- (3) protected against direct sun rays;
- (4) in cool and well-ventilated areas.

In addition, corrosive acid substances shall be stored away from corrosive antacid substances.

O.C. 885-2001, s. 96.

**97. Containers for corrosive substances:** Containers for corrosive substances shall:

- (1) be kept closed;
- (2) have their content clearly identified;
- (3) be handled with care.

O.C. 885-2001, s. 97.

**98. Protection from splashes:** Open reservoirs and vats in which liquid-state corrosive substances are agitated with compressed air or steam heated shall be protected so that workers are not exposed to splashes.

O.C. 885-2001, s. 98.

**99. Overflow prevention devices:** Reservoirs and vats containing liquid state corrosive substances shall be equipped with an overflow prevention device.

Level indicators on such reservoirs and vats shall be provided with protective screens.

O.C. 885-2001, s. 99.

§7. *Dangerously reactive substances*

**100. Storage:** Dangerously reactive substances and substances that could trigger a violent polymerization, decomposition or condensation

reaction due to vibrations, light or sound waves shall be stored separately, well protected and stabilized, as the case may be.

O.C. 885-2001, s. 100.

## **DIVISION XI**

### **VENTILATION AND HEATING**

**101. Necessity:** Establishments shall be adequately ventilated either by natural or mechanical means, and excessive air draughts shall be avoided.

Ventilation systems and devices in service shall be designed, manufactured and installed in compliance with state-of-the-art techniques current at the time of their installation.

In addition, all work stations shall be ventilated as to comply with the standards provided under sections 40 and 41, with the exception of work stations assigned to out-of-shop inspections, maintenance or repairs.

O.C. 885-2001, s. 101.

**102. Natural ventilation:** In any establishment where overall ventilation is provided by natural means, it shall be obtained by means of windows, shutters or vents having a ventilation area at least equal to the percentage of floor area indicated in the following table, according to the type of establishment in question:

<b>Type of establishment floor area</b>	<b>Percentage of</b>
Laboratories and office buildings	5%
Any other establishment	2%

For the purposes of this section, floor area does not include stairwells and other vertical empty spaces.

O.C. 885-2001, s. 102.



**LOGAN  
DRILLING  
GROUP**

**103. Air changes:** Any mechanical ventilation system installed in an establishment shall be able to furnish a minimum number of fresh air changes at the time indicated in Schedule III, in accordance with the category or use of the establishment or any of its parts.

O.C. 885-2001, s. 103.

**104. Inspection:** Mechanical ventilation systems shall be inspected and adjusted at least once a year with the filters being maintained or replaced as the need arises.

O.C. 885-2001, s. 104.

**105. Ducts:** Ducts used to transport contaminated air shall not be used for any other purpose, and must not risk contaminating the workplace.

O.C. 885-2001, s. 105.

**106. Air intakes:** Air intakes shall be so placed as not to introduce into the establishment air that is already contaminated or unhealthy.

O.C. 885-2001, s. 106.

**107. Local ventilation:** Any localized source at a stationary work station that emits dusts, gases, fumes, vapours or mists shall be equipped with a local exhaust ventilation system for trapping the dusts, gases, fumes, vapours or mists at their source.

O.C. 885-2001, s. 107.

**108. Recirculation of air:** Any air recirculation system shall be designed so that:

(1) the concentration of dusts, fumes, gases, vapours and mists in any work station is lower than the weighted average exposure value permissible in the work environment and the permissible recirculation concentration provided for in Schedule I;

(2) a duct is provided for evacuating contaminated air outside the establishment in case the air filtering system breaks down or is not working properly;





(3) no dusts, fumes or mists are discharged into a room where no dusts, fumes or mists were present before the air recirculation system is put into operation; and

(4) there is no recirculation of gases, vapours, mists, fumes or dusts which are identified under Schedule I as a substance whose recirculation is prohibited.

O.C. 885-2001, s. 108.

**109. Fresh air intake:** Subject to section 108, an establishment ventilated mechanically shall be equipped with a fresh air intake system designed to replace the volume of air evacuated from the work environment with fresh air from the atmosphere.

The fresh air intake shall be situated so that no air already evacuated from an establishment is reintroduced.

O.C. 885-2001, s. 109.

**110. Adjacent facilities:** All establishments shall be designed, built, equipped and operated so that they do not emit gases, dusts, fumes, vapours, odours or mists through ceilings, walls, floors, corridors, stairwells, or freight or passenger elevator hoistways into any building or facility adjacent to the establishment.

O.C. 885-2001, s. 110.

**111. Ventilation of change rooms and toilets:** During the hours of operation of an establishment, the change rooms and washrooms shall be ventilated toward the outside of the establishment, either naturally in accordance with section 102, or mechanically by extraction in accordance with the standards prescribed in the following table:

Place cubic per hour)	Ventilation (in metres of air



**LOGAN  
DRILLING  
GROUP**

**Change** hooks or lockers 18 m<sup>3</sup>/h per  
square for street clothes metre of the  
**rooms** or unsoiled work surface area.  
room's clothes

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hooks or lockers **the greater of:**  
for damp work 36 m<sup>3</sup>/h per  
square clothes (drying metre of the  
room's facilities) surface area,  
and 12 m<sup>3</sup>/h per  
locker.

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**Toilets and** **the greater of:**  
**urinals** - 36 m<sup>3</sup>/h per  
square metre of the  
room's surface area,  
and - 45 m<sup>3</sup>/h per  
toilet or urinal, but  
not less than 350 m<sup>3</sup>/h.

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**Showers** **the greater of:**  
square - 36 m<sup>3</sup>/h per  
room's metre of the  
and surface area,  
shower - 90 m<sup>3</sup>/h per



less than

head, but not

350 m<sup>3</sup>/h.

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Where a washroom is ventilated naturally, the ventilation area per toilet shall be 0.1 m<sup>2</sup>.

O.C. 885-2001, s. 111.

**112. Ventilation of a lunch room:** Where a lunch room is put at the disposal of workers for eating their meals, the room shall be ventilated naturally in accordance with the standards applicable to laboratories and to office buildings prescribed in section 102 or ventilated mechanically by the addition of air at the rate of 20 m<sup>3</sup> of air per hour per worker in accordance with section 109.

Where a stove is used for the cooking of food, the lunch room shall be provided with a hood for evacuating smoke and odours into the atmosphere outside the establishment.

This section does not apply to facilities used as offices.

O.C. 885-2001, s. 112.

**113. Combustion products:** Except in the cases provided for in sections 114 and 115, combustion products vented by the air heating facilities of an establishment shall be evacuated directly outside the establishment by means of a duct.

O.C. 885-2001, s. 113.

**114. Infrared heating:** In any establishment heated by a gas-fired infrared device, air contaminated by combustion gases shall be evacuated outside by natural or mechanical ventilation at the minimum rate of

9 m<sup>3</sup>/h

\_\_\_\_\_  
MJ/h

O.C. 885-2001, s. 114.



**LOGAN  
DRILLING  
GROUP**

**115. Make-up air heaters:** Any make-up air heater used in an establishment and operated with natural or propane gas shall comply with CGA Standard 3.7-1976 of the Canadian Gas Association published in a document entitled Direct Gas-Fired Non-Recirculating Make-up Air Heaters and with the standards of the Installation Code for natural gas burning appliances and equipment and the Installation Code for propane burning appliances and equipment (O.C. 174-80, 80-01-23).

O.C. 885-2001, s. 115.

## **DIVISION XII**

### **HEATING ENVIRONMENT**

**116. General conditions:** Subject to sections 117 and 118, in any closed rooms, an appropriate temperature shall be maintained considering the nature of work performed therein as well as outdoor climatic conditions; if such temperature cannot be reasonably maintained, a heated place shall be put at the disposal of workers.

O.C. 885-2001, s. 116.

**117. Stationary work station:** In any establishment, the minimum temperature prescribed in Schedule IV shall be maintained at any stationary work station inside a building according to the type of work performed, except if the purpose for which the rooms are used or the nature of a process or of the products handled requires a cooler temperature, and unless the work station is situated in a motor vehicle, or the work involves maintenance, inspection or repairs outside the workshop.

O.C. 885-2001, s. 117.

**118. Lunch room:** Where a lunch room is put at the disposal of workers for eating their meals, the room shall be kept at a minimum temperature of 20 °C.

This section does not apply to facilities used as offices.

O.C. 885-2001, s. 118.



**119. Relative humidity:** In any closed rooms, a suitable relative humidity percentage shall be maintained according to the type of work performed therein and the outdoor climatic conditions.

A relative humidity percentage of at least 20% shall be maintained during business hours in any office building or commercial establishment built or operated after 19 December 1979.

O.C. 885-2001, s. 119.

**120. Measuring humidity:** The humidity in an establishment is measured with a psychrometer or hygrometer.

O.C. 885-2001, s. 120.

### **DIVISION XIII HEAT STRESS**

**121. Compulsory measurements:** In any establishment employing 50 workers or more where workers are exposed to heat stress conditions in which the heat stress index reaches or exceeds the continuous work curve in the graph in Schedule V, this index shall be measured twice a year, once during the summer, at each work station where the index is reached or exceeded.

The measurements obtained in accordance with the first paragraph shall be entered in a register. The register shall be kept for at least 5 years.

O.C. 885-2001, s. 121.

**122. Method:** For the purposes of this Regulation, the heat stress index is measured by the Wet BulbGlobe Temperature Index (W.B.G.T. method) as established in Schedule V.

O.C. 885-2001, s. 122.

**123. Index exceeds the continuous work curve:** In any establishment where workers are exposed to heat stress conditions such that the heat stress index exceeds the continuous work curve in the graph in Schedule V, the employer shall ensure that the workers thus exposed undergo medical supervision and shall provide them with water at a temperature of between 10 °C and 15 °C, and one shower per 15 exposed workers.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 123.

**124. Special measures:** In any establishment where workers are exposed to heat stress conditions such that the heat stress index exceeds the continuous work curve in the graph in Schedule V, the following measures shall be taken:

(1) re-equip the exposed work station with reflecting screens, additional insulation or ventilation to reduce the heat stress index of the work station to a value less than or equal to the values of the continuous work curve;

(2) if the application of paragraph 1 proves impossible or does not allow the continuous work curve to be reached, control the work load, the time of exposure and the rest time in accordance with the alternate work-rest regimen prescribed for that purpose in Schedule V;

(3) if the application of paragraphs 1 and 2 proves impossible or does not allow the continuous work curves indicated in the graph in Schedule V to be reached or while waiting for the alterations required under paragraph 1 to be done, ensure that the workers wear appropriate individual equipment in accordance with the nature of the heat stress.

O.C. 885-2001, s. 124.

## **DIVISION XIV**

### **LIGHTING**

**125. Illumination levels:** Every establishment shall be provided with natural or artificial lighting the intensity of which depends on the nature of the work done at any work station or the nature of the places where workers circulate in order to provide the illumination levels required under Schedule VI.

O.C. 885-2001, s. 125.

**126. Method of measurement:** For the purposes of section 125, the illumination level shall be measured at a distance of 750 mm from the floor on the usable work surface, with a luxmeter corrected for incident light rays.

O.C. 885-2001, s. 126.

**127. Lunch room:** Where a lunch room is put at the disposal of workers for eating their meals, the room shall have a minimum level of illumination of 250 lux.

This section does not apply to facilities used as offices.

O.C. 885-2001, s. 127.

**128. Toilets:** In any establishment, toilet facilities shall have a minimum level of illumination of 250 lux.

O.C. 885-2001, s. 128.

**129. Exception:** This Division does not apply to tasks which by their very nature shall be performed without illumination or under controlled lighting conditions.

O.C. 885-2001, s. 129.

## **DIVISION XV**

### **NOISE**

**130. Operations and organization:** Any establishment the operation of which is likely to emit noise at the auditory level of workers shall be operated in accordance with section 136 so that the noise measured at any work station does not exceed the standards prescribed in sections 131 to 135 for any time period indicated therein.

An establishment shall be designed, constructed or equipped so that the standards and requirements prescribed in the first paragraph are complied with and so that the ceilings, walls, floors, corridors, stairwells, or freight or passenger elevator hoistways of the establishment do not emit noise toward any building or facility adjacent to the establishment.

O.C. 885-2001, s. 130.

**131. Continuous noise:** No worker in an establishment may be exposed to the continuous noise levels prescribed below during a time period longer than that indicated in the following table:

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DRILLING  
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Sound level (in dBA, corrected dBA or dBA equivalent)	Duration of exposure* permitted (hours per day)
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85	16
86	13.9
87	12.1
88	10.6
89	9.2
90	8
91	7
92	6
93	5.3
94	4.6
95	4
96	3.5
97	3
98	2.6
99	2.3
100	2
101	1.75
102	1.50
103	1.3
104	1.2
105	1
106	0.9
107	0.8
108	0.7
109	0.6
110	0.5
111	0.45
112	0.4
113	0.35
114	0.30
115	0.25
>115	0

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\* this includes any continuous exposure or number of short term exposures during a worker's work period.

The permitted duration of exposure for any worker at any sound level indicated in the preceding table is reduced by one half, effective from a date to be determined by a regulation made in accordance with section 223 of the Act respecting occupational health and safety (chapter S-2.1).

O.C. 885-2001, s. 131.





**132. Continuous noises at different levels:** Where a worker is exposed to continuous noises at different levels, the combined effect of those levels shall be computed by using one of the following methods:

(1) by adding the following fractions:

$C_1 + C_2 + \dots + C_m$ , where C indicates the total time in hours

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_m}{T_m}$$

of exposure at a specific level and where T indicates the total duration in hours of exposure permitted in accordance with section 131;

(2) by computing the equivalent sound level in dBA equivalent with the following formula:

$$L_{eq} = 16.61 \log_{10} \left( \frac{1}{T} \int_0^T 10^{L(t)/16.61} dt \right)$$

where:  $L_{eq}$  = equivalent sound level

L = instantaneous sound level in dBA

T = total duration of worker's exposure, expressed in hours and by using the sound level thus obtained to apply the table in section 131.

Where the method of computation specified in subparagraph 1 of the first paragraph is used, a worker shall not be exposed to a sound level such that the sum of the fractions exceeds the unit.

The computations specified in this evaluation shall not include any exposure of a worker to a sound level of less than 85 dBA.

O.C. 885-2001, s. 132.

**133. Predominant frequency band:** Where a continuous noise includes predominant frequency bands, the continuous level shall be computed in corrected dBA in accordance with the method prescribed in Schedule VII.

O.C. 885-2001, s. 133.



**134. Impact noise:** In an establishment, the daily exposure of a worker to impact noise shall not exceed the number indicated in the following table:

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Sound level in dB linear as peak value	Permitted number of impacts (per 8 hours)
120	10,000
121	7,943
122	6,310
123	5,012
124	3,981
125	3,162
126	2,512
127	1,995
128	1,585
129	1,259
130	1,000
131	794
132	631
133	501
134	398
135	316
136	251
137	200
138	158
139	126
140	100
>140	0

---

O.C. 885-2001, s. 134.

**135. Impact noises at different levels:** Where a worker is exposed to impact noises at different levels, the combined effect of these levels shall be computed by using one of the following methods:

(1) by adding the following fractions:

$C_1 + C_2 + \dots + C_m$ , where C indicates the total number of impacts at a specific level and N indicates the total



**LOGAN  
DRILLING  
GROUP**

\_\_\_ \_\_\_ \_\_\_ number of impacts permitted according to section 134;

$N_1$   $N_2$   $N_m$

(2) by computing the equivalent level in dB linear peak value with the following formula:



$$SEA = L_{eq} + 10 \log N$$

where: SEA = sum of acoustic energies

$L_{eq}$  = equivalent level of impact noises

$L_n$  = impact noise level in dB linear peak value

$N$  = total number of impact noises to which a worker is exposed per day

$n$  = number of impact noises for each sound level of impact noises

Where the method of computation specified in subparagraph 1 of the first paragraph is used, a worker shall not be exposed to an impact sound level such that the sum of the fractions exceeds the unit.

Where the measurements are taken pursuant to subparagraph 2 of the first paragraph, a worker shall not be exposed to impact noises such that the SAE exceeds 160 or such that the peak value in dB linear exceeds 140.

The computations in this evaluation shall not include any exposure of a worker to a sound level of less than 120 dB linear as peak value.

O.C. 885-2001, s. 135.

**136. Corrective measures and individual protective equipment:** The employer shall comply with the standards established under sections 131 to 135 by implementing the measures indicated hereafter in the following order:

- (1) reduce the noise at its source;
- (2) isolate any work station exposed to the noise;
- (3) insulate the work areas acoustically.

When, in taking the measures presented in the first paragraph, it proves to be impossible to comply with the standards prescribed in sections 131 to 135 or until the changes stipulated in the said paragraph are made, the employer

shall put hearing protectors at the disposal of workers or shall limit the time that they are exposed to noise, in conjunction with an audiometric testing program.

The measures stipulated in the first paragraph shall be implemented, even if the employer is unsuccessful in complying with the standards prescribed under sections 131 to 135.

O.C. 885-2001, s. 136.

**137. Hearing protectors:** Any hearing protector provided to a worker in accordance with the second paragraph of section 136 shall reduce the noise such that the worker is no longer exposed to noises that exceed the standards established in sections 131 to 135.

These hearing protectors shall comply with the CSA Standard Z.94.2-1974 entitled Hearing Protectors.

They shall also be disinfected before being used by another worker, except in an emergency.

O.C. 885-2001, s. 137.

**138. Posting of notices:** Where a worker is exposed to noises that exceed the standards established in sections 131 to 135, a poster indicating that the wearing of ear protectors is mandatory shall be displayed near the work station or room where the worker is assigned. If the notice includes characters, the latter shall be at least 30 mm high.

O.C. 885-2001, s. 138.

**139. Measuring devices:** For the purposes of this Division, the sound level shall be measured with a Type 2 sound level meter for general use or a Type I sound level meter for precision purposes as prescribed in CSA Standard Specifications for Sound Level Meters Z.107.1-1973.

Devices used to determine predominant frequency bands shall comply with CSA Standard Z.107.5-1975 entitled Octave, Half-Octave and Third Octave Band Filter Sets.

O.C. 885-2001, s. 139.





**LOGAN  
DRILLING  
GROUP**

**140. Measurement methods:** For the purposes of this Division, except for the case provided for in section 133, the noise shall be measured in accordance with CSA Standard Z.107.2-1973 Methods for the Measurement of Sound Pressure Levels.

O.C. 885-2001, s. 140.

**141. Measurement of noise:** Noise emitted at a work station shall be measured at least once a year in any establishment that employs 50 workers or more and where such noise is likely to exceed the standards prescribed in sections 131 to 135.

Measurements shall also be taken within 30 days after a change in industrial processes or equipment or after the installation of devices for reducing the levels of noise emitted at a work station.

Measurements shall be entered in a register and kept for a period of at least 5 years.

O.C. 885-2001, s. 141.

## **DIVISION XVI**

### **HAZARDOUS RADIATIONS**

**142. Infra-red radiation:** All intense infra-red radiation sources shall be shielded by one of the following devices:

- (1) heat absorbent screens;
- (2) water screens;
- (3) any other devices to protect workers.

O.C. 885-2001, s. 142.

**143. Ultra-violet radiations:** In areas where operations producing dangerous emanations of ultra-violet radiations such as arc welding and cutting and resistance welding are carried out, the following precautions shall be taken:

- (1) enclose the emanation sources with protective screens;
- (2) protect the hands and forearms of workers exposed to appreciable doses with gloves or protective creams;



**LOGAN  
DRILLING  
GROUP**

(3) protect eyes and face as required under section 343.

O.C. 885-2001, s. 143.

**144. Ionizing radiation:** Workers exposed to ionizing radiation shall be monitored by dosimetry.

In the event of an overdose, workers thus exposed shall undergo medical examinations at more or less regular intervals, depending on the duration of exposure.

O.C. 885-2001, s. 144.

## **DIVISION XVII**

### **QUALITY OF WATER**

**145. Drinking water:** Any establishment shall provide workers with drinking water whose quality complies with the Regulation respecting the quality of drinking water (chapter Q-2, r. 40).

The daily quantity of drinking water that an establishment shall put at the disposal of its workers is that prescribed in Schedule VIII.

O.C. 885-2001, s. 145.

**146. Authorization:** A person intending to establish, reconstruct, enlarge or alter a water supply intake designed to supply an establishment with drinking water shall submit the plans and specifications thereof to the Minister of Sustainable Development, Environment and Parks and obtain his authorization in accordance with section 32 of the Environment Quality Act (chapter Q-2).

The authorization provided for in the first paragraph is not required where the establishment receives its water supply from a municipal waterworks system or from a waterworks system operated by a holder of the permit prescribed in section 32.1 of that Act.

O.C. 885-2001, s. 146.

**147. Analysis:** In any establishment that is not supplied with water by a municipal waterworks system or a waterworks system operated by a holder of the permit prescribed in section 32.1 of the Environment Quality Act (chapter



**LOGAN  
DRILLING  
GROUP**

Q-2), the results of a bacteriological analysis of a sample of the water provided to the workers for consumption purposes shall be sent to the Minister of Sustainable Development, Environment and Parks once a month.

This section does not apply to bottled water.

O.C. 885-2001, s. 147.

**148. Bottled water:** Any bottled water distributed in an establishment shall comply with the stipulations in the Regulation respecting bottled water (chapter P-29, r. 2).

O.C. 885-2001, s. 148.

**149. Distributors:** All establishments shall be equipped with distributors of drinking water intended for consumption by the workers in a proportion of one distributor per group of 75 workers and an additional distributor for any fraction of that number above 75 workers. In an establishment with less than 75 workers, at least one drinking water distributor shall be provided.

Drinking water distributors shall be easy to clean and made of leakproof material. They shall be kept free from any source of water contamination.

O.C. 885-2001, s. 149.

**150. Water unsafe for drinking:** Any drinking water distribution system intended for workers' consumption shall be designed and installed to eliminate any possibility of cross-connection or contamination with any piping system likely to contain water that is unsafe for drinking.

Any tap for water that is unsafe for drinking shall be identified.

O.C. 885-2001, s. 150.

**151. Paper cups:** Except where workers are provided with water fountains, they shall have at their disposal sanitary individual disposable paper cups.

The use of a common glass or cup is prohibited.

When workers are provided with paper cups, a refuse container shall be placed less than 2 m from the drinking water distributor.

O.C. 885-2001, s. 151.



**LOGAN  
DRILLING  
GROUP**

## **DIVISION XVIII** COMMON FACILITIES

**152 .** In this Division as well as in Division XIX, the word “disinfected” means being washed with a bleach-based solution or with some comparable product.

O.C. 885-2001, s. 152.

**153. Lunch room:** A lunch room shall be provided for workers who eat their meals in the establishment.

The lunch room shall:

- (1) occupy a minimum area of 1.1 m<sup>2</sup> per worker for all workers likely to eat there at the same time;
- (2) be provided with tables and seats for all workers likely to eat there at the same time;
- (3) be separate from the work premises;
- (4) be cleaned after each meal period, except for unused spaces;
- (5) be disinfected daily;
- (6) be equipped with covered garbage containers that shall be leakproof, corrosion resistant, and cleaned daily on working days;
- (7) be provided with hooks for hanging clothes, except where cloakrooms or hooks already exist in an area adjacent to the lunch room;
- (8) not be used for storage purposes.

This section does not apply to facilities used as offices.

O.C. 885-2001, s. 153.

**154. Change rooms:** In the case of an establishment or a part of an establishment referred to in section 41 or 69 or in paragraph 3 of section 124 where the workers wear clothes used exclusively for work, the workers shall be provided with a place separate from the workplace and equipped with hooks or lockers for hanging such clothes.



This room shall be equipped with a minimum level of illumination of 250 lux and kept at a minimum temperature of 20 °C.

O.C. 885-2001, s. 154.

**155. Change room with drying facilities:** A change room with drying facilities shall be put at the disposal of workers assigned to do work involving compressed air, unless such work is performed occasionally.

The change room with drying facilities shall consist of a room with:

- (1) a space where the workers may change their clothes;
- (2) benches and lockers or hooks;
- (3) a clearance of at least 600 mm in front of each row of lockers;
- (4) facilities with sources of heat for drying workers' clothes;
- (5) showers with hot and cold water installed in an adjacent room, in the proportion of one shower per 15 workers who finish their shift at the same time.

O.C. 885-2001, s. 155.

**156. Maintenance:** All change rooms and other common facilities put at the disposal of workers shall be maintained in sanitary conditions and cleaned daily.

In addition, change rooms adjacent to toilets or a bathroom or showers shall be disinfected daily.

O.C. 885-2001, s. 156.

**157. Heated shelter:** Where a sanitary landfill is operated more than 16 hours per week, a heated shelter equipped with drinking water, a telephone or a radio transceiver, lighting and a toilet facility shall be installed.

O.C. 885-2001, s. 157.

**158 . Camp:** A camp and eating facilities shall be provided to workers who perform work in remote areas that do not offer lodging accommodations, except where the work is carried out over short periods.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 158.

**159. Transportation facilities:** Where a camp is not provided in accordance with section 158, the employer shall provide workers with transportation facilities in accordance with Division XXXI.

O.C. 885-2001, s. 159.

**160. Camp facilities:** For the purposes of sections 158 and 159, “camp” means an aggregate of temporary or permanent facilities, as well as their outbuildings, that the employer organizes to lodge workers, whether it involves permanent camps, permanent summer camps or temporary camps as defined in the Regulation respecting sanitary conditions in industrial or other camps (chapter Q-2, r. 11).

O.C. 885-2001, s. 160.

## **DIVISION XIX**

### **SANITARY FACILITIES**

**161. Sanitary facilities:** All establishments shall have installed one or more washrooms that are separate from the other rooms in the establishment.

The quantity of washrooms, toilets, urinals, sinks, showers and other facilities shall comply in number with the standards provided in Schedule IX.

O.C. 885-2001, s. 161.

**162. Sinks:** In any establishment, a sink for individual use may be replaced by a sink for common use having a length of 600 mm.

O.C. 885-2001, s. 162.

**163. Items for ensuring hygiene:** In washrooms, the following items shall be at the disposal of workers:

- (1) soap or another cleaning product;
- (2) paper towels, hand dryers or roller towels;



**LOGAN  
DRILLING  
GROUP**

(3) where paper towels are used, waste paper baskets for disposal of such towels.

O.C. 885-2001, s. 163.

**164. Accessories, operation and maintenance:** The toilets of any establishment shall be:

- (1) provided with toilet paper;
- (2) kept in good working order;
- (3) provided with seats.

Any cracked or damaged toilet seat shall be replaced immediately.

O.C. 885-2001, s. 164.

**165. Facilities and upkeep:** The toilets of any establishment shall be:

- (1) used exclusively for the purposes for which they were designed;
- (2) free from any obstacle or obstruction that could prevent them from being used;
- (3) kept clean and free of vermin, rodents or insects;
- (4) maintained in sanitary condition;
- (5) cleaned and washed before each shift or on the first half of each shift, except if they have not been used;
- (6) disinfected daily.

O.C. 885-2001, s. 165.

## **DIVISION XX**

### **SPECIAL ERGONOMIC MEASURES**

**166. Handling:** Workers assigned to the handling of loads or persons shall be instructed in the proper manner of performing their work safely.

When the manual moving of loads or persons compromises the worker's safety, mechanical devices shall be put at his disposal.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 166.

**167. Working on piles:** A worker shall have the necessary equipment allowing him to reach the top of piles of material safely, such as step ladders, ladders, pinch grips or any other equipment designed for such purpose.

O.C. 885-2001, s. 167.

**168. Level of work:** The height of workbenches and the position of chairs shall be adapted to the work and the worker in such manner as to ensure workers a correct posture and to reduce their fatigue.

O.C. 885-2001, s. 168.

**169. Position:** Tools, handles and materials shall be located in positions that facilitate work and reduce strain.

O.C. 885-2001, s. 169.

**170. Chairs and benches:** Workers shall have chairs or benches put at their disposal when the nature of their work so permits.

O.C. 885-2001, s. 170.

**171. Break for meals:** When the duration of the work exceeds 5 hours, a break of at least 30 minutes shall be granted to allow workers to eat a meal.

Unless there is agreement to the contrary, this break for meals shall begin in a 2-hour period situated in the middle of the worker's work period.

O.C. 885-2001, s. 171.

## **DIVISION XXI MACHINES**

### *§1. Protectors and protective devices*



**172.** In this Division as well as in section 323, “danger zone” means any zone situated inside or around a machine and which poses a risk for the health, safety or physical well-being of workers.

In this Division as well as in sections 239 and 267, “protector” means the part of a machine used specifically to isolate a machine's danger zone by means of a material barrier, such as a housing, a cover, a screen, a door or a cabinet.

O.C. 885-2001, s. 172.

**173. Applicable provisions:** Subdivisions 1 to 3 apply, with the necessary modifications, to all types of machines, subject to the provisions of subdivisions 4 to 9.

O.C. 885-2001, s. 173.

**174. Permanent protector:** A permanent protector is one that can only be removed with the assistance of a tool or is set in place permanently, for instance, by being welded.

O.C. 885-2001, s. 174.

**175. Interlocking protector:** A protector equipped with an interlocking device shall have the following features:

- (1) it causes the stoppage of the machine or of the operation of its dangerous parts when it is moved;
- (2) it makes it impossible to start the machine or to operate its dangerous parts for as long as it is being moved;
- (3) it does not cause the machine or its dangerous parts to be restarted once it is restored to its place.

O.C. 885-2001, s. 175.

**176. Interlocked protector:** An interlocked protector equipped with an interlocking device shall have the following characteristics:

- (1) it remains in place and is interlocked as long as the machine or its dangerous parts remain in operation;



**LOGAN  
DRILLING  
GROUP**

(2) it makes it impossible to start the machine or to operate its dangerous parts for as long as it has not been restored to its place and reactivated;

(3) it does not cause the machine or its dangerous parts to be restarted once it is restored to its place and reactivated.

O.C. 885-2001, s. 176.

**177. An automatic closing protector:** An automatic closing protector is one that returns to its place automatically to isolate the worker completely from the danger zone, once the material that triggered its movement is removed from the machine.

O.C. 885-2001, s. 177.

**178. Adjustable protector:** An adjustable protector is one that shall be adjusted to the material in order to isolate the worker from the danger zone completely and at all times.

O.C. 885-2001, s. 178.

**179. Sensor device:** A sensor device is one that reacts by causing the elimination of risks associated with the danger zone, as soon as a worker approaches within a given distance of this zone.

O.C. 885-2001, s. 179.

**180. Two-hand control:** Any 2-hand control shall have the following characteristics:

(1) it operates in such a manner that the worker shall use both hands to start the machine;

(2) it is designed and located to prevent involuntary or accidental operations;

(3) it is kept at a safe distance from the danger zone.

O.C. 885-2001, s. 180.

**181. Multiple two-hand control:** If one of the machine's functions is started by more than one two-hand control, these controls shall be designed

in such a manner that none of them can start the machine unless all the other controls are also activated and held in this same position.

O.C. 885-2001, s. 181.

**182. Controlling the danger zone:** Subject to section 183, a machine shall be designed and built so as to make its danger zone inaccessible, failing which it shall be equipped with at least one of the following protectors or protective devices:

(1) in the case where no one will have access to the machine's danger zone while it is in operation:

- (a) a permanent protector;
- (b) a protector fitted with an interlocking device;
- (c) an interlocked protector fitted with an interlocking device;
- (d) a sensor device;

(2) in the case where at least one person will have access to the machine's danger zone while it is in operation:

- (a) a protector fitted with an interlocking device;
- (b) an interlocked protector fitted with an interlocking device;
- (c) an automatic closing protector;
- (d) an adjustable protector;
- (e) a sensor device;
- (f) a two-hand control.

O.C. 885-2001, s. 182.

**183. Equivalent safety precautions:** Section 182 does not apply when it is foreseeable that the effects of installing a protector or a protective device on a machine will make the operations for which it was designed reasonably impractical, such as a snow blower, a railway switch or a medical appliance intended to act directly on a patient.

In this case, the employer shall take precautions that ensure the equivalent safety of workers, namely with respect to the organization of the work, worker training, the machine's operating conditions and operating modes, and

individual protective means and equipment that take into account the absence of a protector or of a protective device.

O.C. 885-2001, s. 183.

**184. Installation:** Subject to section 186, before operating a machine, the protectors shall be installed or the protective devices shall be operational.

O.C. 885-2001, s. 184.

**185. Making secure:** Subject to the provisions of section 186, before undertaking any maintenance, repair or unjamming work in a machine's danger zone, the following safety precautions shall be taken:

- (1) turn the machine's power supply switch to the off position;
- (2) bring the machine to a complete stop;
- (3) each person exposed to danger locks off all the machine's sources of energy in order to avoid any accidental start-up of the machine for the duration of the work.

O.C. 885-2001, s. 185.

**186. Adjustment, repair, unjamming, maintenance and apprenticeship:** When a worker must access a machine's danger zone for adjustment, unjamming, maintenance, apprenticeship or repair purposes, including for detecting abnormal operations, and to do so, he must move or remove a protector, or neutralize a protective device, the machine shall only be restarted by means of a manual control or in compliance with a safety procedure specifically provided for allowing such access. This manual control or this procedure shall have the following characteristics:

- (1) it causes any other control mode or any other procedure, as the case may be, to become inoperative;
- (2) it only allows the operation of the dangerous parts of the machine by a control device requiring continuous action or a two-hand control device;
- (3) it only allows the operation of these dangerous parts under enhanced security conditions, for instance, at low speed, under reduced tension, step-by-step or by separate steps.

O.C. 885-2001, s. 186.





**LOGAN  
DRILLING  
GROUP**

**187. Characteristics of a protector:** A protector or a protective device shall not:

- (1) cause additional risks for workers;
- (2) be in itself a source of danger, for instance due to the presence of cutting edges, irregularities or burrs.

O.C. 885-2001, s. 187.

**188. Spare part:** When a protector or a protective device is replaced, the spare protector or protective device shall offer safety features at least equivalent to those of the original part.

O.C. 885-2001, s. 188.

## §2. *Control devices or switches*

**189. Control devices and switches:** Control devices and switches shall be designed, installed and maintained so as to avoid the accidental start-up or shut-down of a machine.

O.C. 885-2001, s. 189.

**190. Start and stop switches:** Each machine shall be equipped with a control device or switch making it possible to start and stop the machine under safe conditions.

O.C. 885-2001, s. 190.

**191. Warning device:** When the starting up of a machine constitutes a danger for anyone near the machine, a warning device or any other effective means of communication shall announce the starting up of the machine.

O.C. 885-2001, s. 191.

**192. Emergency stop:** Subject to section 270, any machine whose operation requires the presence of at least one worker shall be equipped with an emergency stopping device or switch.



**LOGAN  
DRILLING  
GROUP**

This device or switch stops the machine, considering the machine's design, in the shortest possible time. In addition, it has the following characteristics:

- (1) it is easily visible and within reach of the worker;
- (2) a single action activates it;
- (3) it is clearly identified.

The resetting of the emergency stopping device after it is used shall not by itself cause the machine to start up.

O.C. 885-2001, s. 192.

**193. Groups of machines:** Any stopping device or switch for a machine belonging to a group of machines that are wired to operate in series, including an emergency shut-off switch, shall in addition be designed to stop serial upstream and downstream machines if their operations constitute a danger for worker safety.

O.C. 885-2001, s. 193.

### *§3. Pulleys and belts*

**194. Prohibited use:** No cracked pulleys or broken rim pulleys shall be used.

O.C. 885-2001, s. 194.

**195. Safety precaution:** The installing of belts or cables shall not be done while the pulleys are in motion.

O.C. 885-2001, s. 195.

**196. Clutch mechanisms:** When the clutch of a machine is engaged by means of pulleys, this clutch mechanism shall be equipped with a mechanism that prevents the belts from sliding from the idle pulley to the fast pulley.

O.C. 885-2001, s. 196.

### *§4. Grinding machines and abrasive materials*



**LOGAN  
DRILLING  
GROUP**

**197. Grinding machines:** Grinding machines, with the exception of grinders, which are equipped with a 50 mm diameter grindstone or more, shall be provided with a guard compatible with the task being performed and offering the most efficient protection.

O.C. 885-2001, s. 197.

**198. Mounting a flat grinding wheel:** A flat grinding wheel that is non-permanently mounted on its spindle shall be mounted between 2 plates whose diameter is at least 1/3 the nominal diameter of the grinding wheel by inserting a buffer of blotter paper between the wheel and the plates.

O.C. 885-2001, s. 198.

**199. Storage of grinding wheels:** Grinding wheels shall be stored:

- (1) in compliance with the manufacturer's recommendations;
- (2) protected from impacts, in chests or drawers specially designed for such purpose;
- (3) in dry areas, protected from sudden temperature changes.

O.C. 885-2001, s. 199.

**200. Installing and using grinding wheels:** Before installing or using a grinding wheel, the following precautions shall be taken:

- (1) the grinding wheel shall not be cracked, split, chipped or unbalanced;
- (2) at no time during its use shall the manufacturer's rated rotational speed be exceeded.

O.C. 885-2001, s. 200; O.C. 1120-2006, s. 3.

#### §5. Grinders

**201. Protectors and protective devices:** A grinder shall be equipped with the following protectors and protective devices:

- (1) a grinder casing and, if applicable, a wire brush casing;



**LOGAN  
DRILLING  
GROUP**

- (2) an adjustable spark shield;
- (3) an adjustable workpiece support or chuck;
- (4) a transparent screen.

O.C. 885-2001, s. 201.

**202. Housing:** The grinding wheel housing shall be built to withstand impacts and the projection of fragments if the wheel ruptures.

O.C. 885-2001, s. 202.

**203. Spark shield:** The spark shield is designed to prevent sparks and grinding wheel fragments from being projected outside the housing.

The gap between the spark shield and the grinding wheel shall be adjusted as the wheel wears down and this gap shall not exceed 5 mm with a 1 mm margin of error.

O.C. 885-2001, s. 203.

**204. Gap adjustment:** The gap between a workpiece holder or adjustable chuck and the grinding wheel shall be adjusted as the grinding wheel wears down such that the gap does not exceed 3 mm.

O.C. 885-2001, s. 204.

**205. Transparent screen:** The purpose of the transparent screen is to prevent particles from being projected into the operator's face and eyes.

The screen shall be made of a shock-resistant transparent material.

O.C. 885-2001, s. 205.

**206. Abrasive materials:** Sections 198 to 200 apply to grinders.

O.C. 885-2001, s. 206.

§6. *General purpose machines for wood working and saws*





**LOGAN  
DRILLING  
GROUP**

**207. Bandsaw:** Bandsaw wheels shall be housed in a casing.

Moreover, the saw shall be equipped with a protector or protective device that prevents access to the band over its entire length, except on the side where sawing is carried out between the blade shield and the bench.

O.C. 885-2001, s. 207.

**208. Circular saw:** Circular saws shall be provided with protective hoods or protective devices.

O.C. 885-2001, s. 208.

**209. Prohibition:** The use of a saw blade that is not properly adjusted is prohibited.

O.C. 885-2001, s. 209.

**210. Safety precautions:** All circular saw blades shall be used solely for the purposes for which they were designed.

Moreover, the saw shall not be operated beyond the maximum speed specified by the blade manufacturer, nor shall the blade exceed the maximum diameter specified by the machine manufacturer.

O.C. 885-2001, s. 210.

**211. Guide blocks and gages:** Guide blocks and gages for pit saws and crosscut saws shall be available and in good condition.

O.C. 885-2001, s. 211.

**212. Knife-type splitter:** Hand-fed circular saws such as pit saws and crosscut saws shall be equipped with a knife-type splitter, which shall be chosen and installed according to trade practice.

O.C. 885-2001, s. 212.

**213. Accessories:** On wood working machines, accessories such as push sticks, jigs or mounting devices intended to keep workers' hands away from the danger zones shall be used whenever the work so permits.

O.C. 885-2001, s. 213.

**214. Recoiling parts:** Wood working machines likely to cause the projection of parts, such as circular ripsaws and planing machines, shall be equipped with a device to prevent the recoil of parts.

O.C. 885-2001, s. 214.

#### §7. Presses

**215. Applicable provisions:** The provisions of this subdivision apply to all presses, including full-cycle punch presses and friction clutch presses.

O.C. 885-2001, s. 215.

**216. Power shut-off mechanism:** A press shall be equipped with a power shut-off mechanism, such as a switch or a general circuit breaker.

The purpose of this power shut-off mechanism is to cut all power to the punch press, including that of the auxiliary circuits. It shall be possible to lock off this mechanism in the off position.

O.C. 885-2001, s. 216.

**217. Start-up:** The starter of the punch press motor shall be protected against inadvertent or accidental starts.

In the event of a power failure, the starter shall return to the off position.

O.C. 885-2001, s. 217.

**218. Auxiliary circuits:** The auxiliary circuits of the punch press, such as those linked to two-hand control units and solenoid valves, shall only be powered by a transformer having a secondary conductor that is insulated, i.e. grounded.

This transformer's rated output voltage shall not exceed 120 V.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 218.

**219. Protection of the pedal mechanism:** The pedal of the punch press and its components shall be protected both on top and on the sides by a stationary guard to shield it from inadvertent or accidental movements.

When the punch press is in operation, this pedal shall only be accessible to the operator.

O.C. 885-2001, s. 219.

**220. Purge valve:** The pneumatic components of a punch press shall be equipped with an automatic purge valve which will close off the air supply and automatically purge the circuit.

A pressure gauge shall be installed on the punch press in full view of the worker to indicate that the line has been purged.

O.C. 885-2001, s. 220.

**221. Pressure detector:** When a pneumatic system is used to control the punch press clutch, a pressure detector shall be installed to prevent the operation of the clutch control when the pressure falls below the minimum operating pressure.

O.C. 885-2001, s. 221.

**222. Anti-repetition device:** When the punch press has a two-hand control unit, it shall be equipped with an anti-repetition device.

Such a punch press shall also be equipped in such a way as to prevent the simultaneous use of other types of controls to operate the machine.

O.C. 885-2001, s. 222.

§8. *Full-cycle punch presses*

**223. Single action mechanism:** A full-cycle punch press shall be equipped with a single action mechanism which disconnects the controls of the trigger mechanism, including those of the pedal, at the end of each cycle.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 223.

**224. Rod or guide for springs:** The springs of the single action mechanism, those of the mechanism that controls the clutch and those of the rod linkage assembly of the clutch control shall be of the compression type, mounted on a rod or placed in a guide, to prevent the windings from becoming entangled in the event of breakage. The space between the windings shall be less than the diameter of the wire.

O.C. 885-2001, s. 224.

**225. Prevention of early triggering:** The punch press control unit components, such as the pedal or control lever, shall have a device that prevents early triggering.

O.C. 885-2001, s. 225.

§9. *Friction clutch presses*

**226. Safety precautions:** A friction clutch press shall:

- (1) have clutch-braking control devices that automatically stop the press by activating the clutch and brakes; this clutch action shall remain inoperative until activated;
- (2) be equipped with lockable control devices for switching off-circuit and for single or automatic step advancing;
- (3) require the use of a two-hand control device in step-by-step advancing mode, except if the danger zone is not accessible or is protected by a protector or protective device;
- (4) never be used for production in step-by-step advance mode;
- (5) be equipped with double or twin load breakers when the clutch is air-powered; any failure of a load breaker shall prevent the press from operating.

O.C. 885-2001, s. 226.

## **DIVISION XXII**

### **HAND TOOLS AND PORTABLE POWER TOOLS**



**227. Safe usage:** Hand tools and portable power tools shall be appropriate for the job for which they are intended and be used solely for the purposes for which they were designed.

O.C. 885-2001, s. 227.

**228. Inspection and maintenance:** Hand tools and portable power tools shall be examined regularly and if found defective, be repaired or replaced.

O.C. 885-2001, s. 228.

**229. Storage of hand tools:** Hand tools shall not:

- (1) be left on the floor, in passages, on stairs or in other areas where people work or circulate;
- (2) be placed in elevated locations from where they could fall on people.

O.C. 885-2001, s. 229.

**230. Handles:** Handles for tools such as: axes, hammers, sledge-hammers, shall be carefully adjusted at the heads, firmly fixed and replaced if found defective.

O.C. 885-2001, s. 230.

**231. Files:** Files shall have metal ferruled handles or other sturdy handles and shall not be used without them.

O.C. 885-2001, s. 231.

**232. Extensions:** It is prohibited to adapt an extension to a tool used for tightening or loosening nuts, screws, bolts or pipes unless the tool was designed to be fitted with such an extension.

O.C. 885-2001, s. 232.

**233. Burrs:** The head of a steel tool used with a hammer or a sledge-hammer, such as a punch, stone chisel or other similar tool, shall be kept free of burrs.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 233.

**234. Cutting tool:** A cutting tool, such as an axe or a saw shall be transported in such manner as to prevent any contact with the worker, namely by being stored in a box or in a covered container, or firmly attached to the vehicle.

O.C. 885-2001, s. 234.

**235. Ground:** A portable electric power tool shall use an extension with a third conductor for grounding which is connected to the tool's exterior metal casing, unless the tool is battery powered or equipped with double-layered insulation.

O.C. 885-2001, s. 235.

**236. Position of trigger:** The trigger on a portable electric power tool shall be so designed as to eliminate any risk of an accidental start-up.

O.C. 885-2001, s. 236.

**237. Air supply inlet valve control:** The switch for an air-driven portable tool shall, in addition, be designed to automatically close the compressed air supply inlet valve when the operator releases the trigger.

O.C. 885-2001, s. 237.

**238. Electrical wire and flexible hose:** If they hamper circulation, the electrical wire feeding an electric power tool and the flexible hose supplying an air-driven power tool with compressed air shall:

(1) when left on the ground, be protected so as not to be damaged and be secured so as to eliminate any risk of falling;

(2) when suspended, be at a sufficient height to ensure clearance, but at least at 2 m.

O.C. 885-2001, s. 238.

**239. Protectors and protective devices:** Protectors or protective devices for portable power tools shall be left in place when such tools are being used.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 239.

**240. Safety precautions:** When carrying a portable power tool from one working area to another, the following precautions shall be taken:

- (1) cut off the power supply;
- (2) wait for the tool to come to a complete stop.

O.C. 885-2001, s. 240.

**241. Chain saw:** Portable power saws and chain saws shall comply with the CAN3-Z62.1-M85 Chain Saw standard.

Notwithstanding the first paragraph, they shall be equipped with an anti-vibrating system.

O.C. 885-2001, s. 241.

**242. Conditions for using a chain saw:** A portable power saw or chain saw shall only be used under the following conditions:

- (1) it may only be started at a distance of over 3 m from the place where the gasoline tank was filled;
- (2) it may only be started if the chain stopper is applied;
- (3) it may only be started if it is firmly set on the ground or if the worker holds it by gripping the main handle near the chain stopper while securing the rear handle between his knees except if it weighs less than 4.3 kg;
- (4) it shall be used by holding it with both hands and with both feet firmly standing on a stable surface;
- (5) it shall have the chain stopper applied when not held firmly by the worker and while being carried from one work area to another;
- (6) it shall be equipped with a chain that is sharpened, adjusted and maintained according to the manufacturer's recommendations;
- (7) it shall never be used any higher than shoulder level;
- (8) it shall only be adjusted or serviced when the motor is turned off;
- (9) it shall never be fueled when there is a fire or explosion hazard.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 242; O.C. 510-2008, s. 2.

## **DIVISION XXIII**

### **HANDLING AND TRANSPORTING MATERIAL**

#### *§1. Handling techniques*

**243. Inclined plane:** Where a worker uses an inclined plane for raising or lowering heavy objects, he shall:

- (1) avoid standing on the lower end of the plane;
- (2) control the movement of such objects by means of cables, blocks, wedges or other apparatus.

O.C. 885-2001, s. 243.

**244. Rollers:** Where rollers are used for moving objects, tools designed for this type of work such as bars or sledge-hammers shall be used; it is prohibited to use one's hands or feet to change the position of moving rollers.

O.C. 885-2001, s. 244.

#### *§2. Hoisting devices*

**245. Operating conditions:** Every hoisting device shall be used, maintained and repaired in such a manner that its use does not compromise the health, safety or physical well-being of workers. Consequently, such a device shall:

- (1) be inspected before it is used for the first time;
- (2) have its motor turned off when filling the gas tank;
- (3) not be used if strong winds, storms or extreme temperatures make it dangerous to use;
- (4) not be used when repair or maintenance work is being carried out;
- (5) be inspected and maintained in accordance with the manufacturer's instructions or standards offering equivalent safety;





**LOGAN  
DRILLING  
GROUP**

(6) when one of its parts is repaired, reconditioned or replaced, provide as regards this part a level of safety that is equivalent to that of the original part;

(7) not be modified to increase its rated load or to be used for any other purpose without a signed and sealed certificate from an engineer or a written certificate from the manufacturer, indicating that the modification is safe.

O.C. 885-2001, s. 245.

**246. Hoisting accessories:** Hoisting accessories shall be solidly built, have requisite resistance, depending on their use, and be kept in good working order.

O.C. 885-2001, s. 246.

**247. Safe access:** When a hoisting device has an operator's station for moving the device about or a control station for hoisting, the latter shall be safely accessible by means of a ladder, steps, grip handles or any other means.

O.C. 885-2001, s. 247.

**248. Precautions:** A hoisting device shall not:

- (1) be loaded beyond its rated load;
- (2) be subject to sudden movements.

O.C. 885-2001, s. 248.

**249. Rated load:** The rated load shall be indicated on all hoisting devices, at a place where it is easy to read.

O.C. 885-2001, s. 249.

**250. Load-rating table:** A table shall indicate the rated loads of a crane or of a similar device. This table shall:

- (1) be so placed as to be easily read by the operator;
- (2) provide information which complies with that provided by the manufacturer;

(3) furnish all the necessary information for the safe operation of the crane or apparatus.

O.C. 885-2001, s. 250.

**251. Mobile crane:** A mobile crane shall meet the requirements of the CSA Z150-1974 Safety Code for Mobile Cranes standard and its supplement No. 1-1977, or any other recognized standard offering equivalent safety.

O.C. 885-2001, s. 251.

**252. Transformed mobile crane:** A mobile crane with a luffing boom transformed and used for purposes other than the hoisting of loads, and serving as a scoop, a dragging bucket, a clamshell bucket or a pile hammer shall be equipped:

- (1) with bumpers or boom stops;
- (2) a high boom angle switch.

O.C. 885-2001, s. 252.

**253. Signalman:** If the operator of a hoisting device does not have an unrestricted view during any manoeuvre, one or more signalmen shall assist the operator. The signalman shall:

- (1) observe the movement of the apparatus or the load when it is out of sight of the operator;
- (2) communicate with the operator by a well-established, uniform signal code or by means of a telecommunication system, when conditions so require or when the operator judges it necessary.

O.C. 885-2001, s. 253.

**254. Travelling crane:** A general purpose overhead travelling crane, with the exception of a single-girder overhead crane, shall conform to the CSA B167-1964 General Purpose Electric Overhead Travelling Cranes standard.

O.C. 885-2001, s. 254.

**254.1. Training of the overhead travelling crane operator:** An overhead travelling crane must be operated exclusively by an operator who has received theoretical and practical training given by an instructor.

The theoretical training must cover, among other things,

- (1) a description of the different types of overhead travelling cranes and hoisting accessories used in the establishment;
- (2) the workplace and how it affects the operation of the overhead travelling crane;
- (3) the operations involved in operating the over-head travelling crane and hoisting accessories, such as using slings and control devices, signalling using the universal system, handling and moving loads, and any other manoeuvre necessary to the operation of the overhead travelling crane;
- (4) the means of communication used in the operation of the overhead travelling crane;
- (5) the inspection to verify the working order and proper functioning of the overhead travelling crane and hoisting accessories prior to operation by the operator; and
- (6) the rules governing the operation of the overhead travelling crane, and the establishment's directives regarding the work environment.

The practical training must pertain to the subjects described in subparagraphs 1 to 6 of the second paragraph and be given in the workplace under conditions that do not expose the operator and other workers to hazards arising from the overhead travelling crane operation training. The training must also be of sufficient duration to enable the overhead travelling crane and hoisting accessories to be operated safely.

When the operation of the overhead travelling crane and hoisting accessories requires the presence of a signaller or slinger, those persons must also be given theoretical and practical training on the duties they are to perform.

O.C. 510-2008, s. 3.

**255. Safe handling of loads:** The handling of loads on a work site shall take place in accordance with the following standards:

- (1) before hoisting a load, the operator or the signalman shall ensure that all the cables, chains, slings or other moorings are properly attached to the load and that hoisting does not present any hazard;



**LOGAN  
DRILLING  
GROUP**

- (2) the hoisting of loads shall be done vertically;
- (3) when oblique hoisting is absolutely necessary, precautions dictated by the circumstances shall be taken, and this operation shall be performed in the presence of a competent person representing the employer;
- (4) if the uncontrolled movement or the swinging of a raised load involves a danger, one or more guide ropes shall be used;
- (5) the hoisting device shall not be left unsupervised when a load is suspended therefrom;
- (6) the moving of loads above people shall be avoided and, if this is not possible, then specific measures shall be taken to ensure the safety of these persons;
- (7) it is prohibited for any person to stand on a load, a hook or a sling suspended from a hoisting device;
- (8) the hooks used to hoist loads as well as those attached to slings shall be equipped with a safety catch except where these hooks are specifically designed for the safe hoisting of certain loads.

O.C. 885-2001, s. 255.

**256. Lift truck:** A lift truck built on or after 2 August 2001 shall conform to the ASME B56.1-1993 Safety Standard for Low Lift and High Lift Trucks.

A lift truck built before 2 August 2001 shall conform to the CSA B335.1-1977 Low Lift and High Lift Trucks standard or the ANSI B56.1-1975 Low Lift and High Lift Trucks standard.

O.C. 885-2001, s. 256.

**256.1. Lift truck operator retention device:** A counterbalanced high-lift truck with a centre operating station, that cannot be lifted with the operator in a sitting position, referred to in the second paragraph of section 256, must be equipped with a retention device, such as a safety belt, mesh doors, enclosed cabin, bucket seat or winged seat to prevent the operator from being crushed by the structure of the truck in the event the lift truck tips over.

The devices must, where applicable, be kept in good order and used.

O.C. 1120-2006, s. 4.





**LOGAN  
DRILLING  
GROUP**

**256.2. Minimum age of operator:** Every operator of a fork lift truck must be at least 16 years old.

O.C. 1120-2006, s. 4.

**256.3. Training of operator:** A fork lift truck must be operated only by an operator who has undergone

- (1) training including
  - (a) basic notions concerning fork lift trucks;
  - (b) the work environment and how it affects the operation of a fork lift truck;
  - (c) the operation of a fork lift truck; and
  - (d) safety rules and measures; and
- (2) practical training under the supervision of an instructor and dealing with the operation of a fork lift truck such as starting, moving and stopping, handling loads and any other manoeuvre necessary to operate a fork lift truck.

The practical training must begin, if possible, outside of the area used for current operations and then be completed in the regular work area.

In addition, the training prescribed in subparagraphs 1 and 2 must include the directives concerning the work environment, its specific conditions and the type of fork lift truck to be operated.

O.C. 1120-2006, s. 4.

**257. Lifting jacks:** Lifting jacks that are used to lift loads shall:

- (1) rest on solid bases;
- (2) be lined up with the load to lift;
- (3) be equipped with a positive stop to prevent overstop or a stop indicator.

O.C. 885-2001, s. 257.

**258. Hoisting devices that can be dismantled:** Hoisting devices that can be dismantled shall be assembled, maintained and dismantled in accordance with the manufacturer's instructions or trade practice.

O.C. 885-2001, s. 258.

**259. Brakes and warning device:** A hoisting device shall be equipped with:

- (1) hoisting brakes so designed and installed as to stop a load of at least one and half times that of the rated load;
- (2) a warning device when the hoisting device is motorized, except in the case of a person-lifter.

The warning device shall be used each time that a load is moved over a work station or a traffic area.

O.C. 885-2001, s. 259.

**260. Prohibition:** Subject to section 261, no operator shall lift a worker using a hoisting device, unless the latter was designed for that purpose by the manufacturer.

O.C. 885-2001, s. 260.

**261. Lifting of a worker:** The lifting of a worker using a mobile crane is permitted if the conditions set out in section 3.10.7 of the Safety Code for the construction industry (chapter S-2.1, r. 4) are respected.

The lifting of a worker using a fork lift truck must be done in compliance with ASME Standard B56.1 (1993-A.1995) Safety Standard for Low Lift and High Lift Trucks.

Each worker must wear a safety harness that complies with sections 347 and 348.

O.C. 885-2001, s. 261; O.C. 1120-2006, s. 5.

**262. Aerial basket lifting device:** Every aerial basket lifting device must be designed, manufactured and installed on a carrier vehicle in compliance with CSA Standard C225 or ANSI Standard A92.2 applicable at the time of its manufacture.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 262; O.C. 1120-2006, s. 6.

**263. Aerial basket lifting device - design and manufacture:** Every aerial basket lifting device designed and manufactured before November 1976 must

(1) be equipped with an emergency stop button located within reach of the worker occupying the basket; and

(2) be installed on a carrier that must provide a stable and structurally sound support when the basket is used.

O.C. 885-2001, s. 263; O.C. 1120-2006, s. 6.

**263.1. Aerial basket lifting device - training:** Every worker operating an aerial basket lifting device must undergo training in compliance with articles 10.11 to 10.11.3 of CSA Standard C225-00 Vehicle-Mounted Aerial Devices and more specifically on the operating methods related to the operation in motion of the carrier vehicle of the aerial basket lifting device.

O.C. 1120-2006, s. 6.

**264. Protection against falls:** The wearing of a safety harness is compulsory for any worker occupying the aerial basket of a lifting device, except if the worker is protected by some other device that provides him with equivalent safety.

A safety harness shall be equipped with an energy absorber and a lifeline attached to an anchorage point specified by the manufacturer or any other anchorage point independent of the basket and offering a resistance to breakage of at least 18 kilonewtons per worker who is anchored thereto.

O.C. 885-2001, s. 264.

### §3. *Conveyors*

**265. Carrying elements:** The carrying elements of conveyors shall be designed to safely support the loads that are hauled.

O.C. 885-2001, s. 265.

**266. Transmission devices:** Belts, chains, gears, drive-shafts, drums, sheaves, chain pinions of conveyor installations shall be guarded, if these parts are located 2.1 m or less above the floor or the working platform.

O.C. 885-2001, s. 266.

**267. Protection from falling objects:** Conveyors shall preferably not be installed above passages and work stations; otherwise they shall be provided with guardrails to prevent the falling of objects.

O.C. 885-2001, s. 267.

**268. Aerial conveyor:** Subject to section 324, an aerial conveyor shall be equipped with a footbridge in compliance with section 31, when there is a danger of falling, and when workers must circulate on the conveyor.

O.C. 885-2001, s. 268.

**269. Safety precaution:** When a conveyor is in operation, it is prohibited to climb onto the moving part or to stand on the conveyor frame.

This prohibition does not apply to conveyors designed specifically for moving people and used for such purpose, or to slow-moving conveyors to which workers may safely have access.

O.C. 885-2001, s. 269.

**270. Emergency stop:** The emergency stop device of a conveyor to which workers have access comprises several control devices located at loading and unloading piers as well as at other points along the conveyor's itinerary. In addition, these devices have the following features:

- (1) they are easily visible;
- (2) one single action activates them;
- (3) they are clearly identified.

The resetting of the emergency stop device after it is used shall not by itself cause the start up of the machine, except if the conveyor is moving slowly and workers can have access to it safely.

O.C. 885-2001, s. 270.





**LOGAN  
DRILLING  
GROUP**

**271. Bucket conveyors:** A bucket conveyor shall be:

- (1) covered on all sides and from top to bottom;
- (2) equipped with doors or removable panels to facilitate inspection, cleaning and repairs. These panels shall be equipped with an interlocking device.

O.C. 885-2001, s. 271.

*§4. Self-propelled vehicles*

**272. Conditions of use and maintenance:** Every self-propelled vehicle shall be used, made and repaired in such way that it does not compromise the health, safety and well-being of workers. Consequently:

- (1) the vehicle motor shall be in the off position during fueling, except if a safe work method has been established;
- (2) the vehicle shall not be used if repair or maintenance work is being carried out on it;
- (3) the vehicle shall be maintained and inspected in accordance with the manufacturer's instructions or standards offering equivalent safety;
- (4) when one of its parts is repaired, reconditioned or replaced, this new part shall provide a level of safety that is equivalent to that of the original part.

O.C. 885-2001, s. 272.

**273. Safe access:** The control or operating station of a self-propelled vehicle shall be easily and safely accessible by means of a step, grip handles or a ladder.

O.C. 885-2001, s. 273.

**274. Brakes and warning device:** Every self-propelled vehicle shall:

- (1) be equipped with efficient brakes;
- (2) be equipped with a warning device (siren).

The warning device shall be used in yards and in buildings when there are persons nearby and in areas presenting a risk, such as doors and around bends.

Subparagraph 2 of the first paragraph does not apply to tracked bulldozers and hauling machines.

O.C. 885-2001, s. 274.

**275. Design and safe layout:** A self-propelled vehicle shall be designed, built and laid out so as to ensure that the driver is not struck or does not get caught by a moving vehicle part, and is not otherwise injured by operating the vehicle or on entering or leaving the cab.

O.C. 885-2001, s. 275.

**276. Protection of the driver:** The self-propelled vehicle shall be equipped with a roof, a protective screen, a cab or a structure to protect the driver in the following cases:

- (1) where there is a risk of falling objects;
- (2) if the driver risks impact with an object being handled.

O.C. 885-2001, s. 276.

**277. Protective structure of self-propelled vehicles:** The following self-propelled vehicles manufactured on or after 2 August 2001 shall be provided before 28 January 2002 with a roll-over protective structure which meets the CSA B352-M1980 Roll-over Protective Structures standard for farm, construction, landscaping, forestry, industrial and mining vehicles:

- (1) industrial tractors, motor graders, prime movers, tracked hauling machines, crawler tractors, tracked loaders, wheeled tractors and wheeled loaders, whose mass is greater than 700 kg;
- (2) compacting machines and rollers whose mass is greater than 2,700 kg, except machines designed for compacting asphalt;
- (3) wheeled agricultural tractors of more than 15 kW.

This section does not apply to a low profile agricultural tractor when it is used in an orchard.

O.C. 885-2001, s. 277.



**LOGAN  
DRILLING  
GROUP**

**278. Protective structures of existing self-propelled vehicles:** The following self-propelled vehicles manufactured before 2 August 2001 shall be provided with a roll-over protective structure which meets a standard from the Society of Automotive Engineers (SAE) standardization organization or a standard providing equivalent safety:

- (1) power rams, and tracked or wheeled loaders and hauling machines;
- (2) graders;
- (3) tractor scrapers;
- (4) agricultural and industrial tractors of more than 15 kW.

The design, manufacture or installation of a protective structure is deemed to be in compliance with the standard if it has been certified, signed and sealed by an engineer.

This section does not apply to graders or loaders used for snow removal if these vehicles only circulate in places where there is no risk of overturning. Nor does it apply to a low profile agricultural tractor when used in an orchard.

O.C. 885-2001, s. 278.

**279. Identification plate:** A plate shall be attached to the roll-over protective structure. This plate shall indicate:

- (1) the name of the manufacturer;
- (2) the protective structure's serial number;
- (3) the standard with which it complies;
- (4) the make and model of equipment for which it was designed.

The plate shall be permanently attached and the inscriptions thereupon shall be legible at all times.

O.C. 885-2001, s. 279.

**280. Safety belt:** The wearing of a safety belt is mandatory for the driver of a self-propelled vehicle equipped with a roll-over protective structure as well as for any worker in the vehicle while it is in motion.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 280.

**281. Protective shield:** Self-propelled vehicles equipped with a winch for towing materials shall have a protective shield between the winch and the driver if there is a risk of injuring the driver should the cable snap.

O.C. 885-2001, s. 281.

**282. Seat and belt:** Any persons other than the driver are prohibited from being on a self-propelled vehicle, if it is not equipped with a seat and a belt to accommodate each person.

O.C. 885-2001, s. 282.

**283. Vehicle in motion:** No worker shall remain on the load of a self-propelled vehicle in motion.

O.C. 885-2001, s. 283.

**284. Signalman:** When a self-propelled vehicle moves in reverse, a signalman shall direct the driver if such a move poses a risk for the safety of a worker or the driver.

O.C. 885-2001, s. 284.

**285. Prohibition:** The driver of a self-propelled vehicle referred to in section 277 or 278 shall not leave his vehicle unattended when the mobile part of the device used for lifting, towing or pushing a load is in a raised position.

O.C. 885-2001, s. 285.

§5. *All terrain vehicles*

**286. Operating conditions:** The use of an all-terrain vehicle is only permitted under the following conditions:

- (1) the vehicle is mounted on at least 4 wheels;





**LOGAN  
DRILLING  
GROUP**

(2) it is equipped with a portable fire extinguisher of the type ABC approved by Underwriters' Laboratories of Canada (ULC), if the task involves any risk of fire;

(3) it is equipped with a yellow warning flag measuring at least 0.05 m<sup>2</sup> and placed at least 1.5 m above ground level, if the vehicle is used in yards;

(4) the workers have been trained and warned of the specific dangers related to the use of this type of vehicle;

(5) the driver shall wear the following individual protective equipment:

(a) a protective helmet of the type for motorcyclists or snowmobile users in compliance with the Protective Helments Regulation (chapter C-24.2, r. 6);

(b) protective goggles or a visor designed to be attached to a protective helmet;

(c) flexible gloves that provide a firm grip on the vehicle's handles and controls;

(6) The wearing of protective equipment provided in subparagraphs *a* and *b* of paragraph 5 is also mandatory for all passengers.

O.C. 885-2001, s. 286.

**287. Prohibition:** It is prohibited to use an all-terrain vehicle for pulling a load with any attachment which in the event it snaps, may cause a backlash effect.

O.C. 885-2001, s. 287.

#### **DIVISION XXIV PILING OF MATERIALS**

**288. Piles of material:** Piling of materials shall be performed such that the piles do not obstruct:

- (1) the proper distribution of natural or artificial lighting;
- (2) the proper operation of machines or other facilities;
- (3) traffic in passages, aisles, stairs, elevators and near doors;
- (4) access to electric panels;



**LOGAN  
DRILLING  
GROUP**

- (5) access to showers and other emergency equipment;
- (6) the efficient operation of automatic sprinkler systems or access to fire fighting equipment.

The distance between the pile and the sprinkler shall not be less than 450 mm.

O.C. 885-2001, s. 288.

**289. Resistance of walls and bulkheads:** No material shall be piled against building walls or bulkheads without there being a previous determination that such walls or bulkheads can withstand the lateral pressure.

O.C. 885-2001, s. 289.

**290. Stability of piles:** Material shall not be piled to a height that may compromise the stability of the pile.

O.C. 885-2001, s. 290.

## **DIVISION XXV**

### **HANDLING AND USING EXPLOSIVES**

**291. Scope:** This Division applies to all blasting work or all work requiring the use of explosives. However, it does not apply to such work when carried out in a mine within the meaning of the Regulation respecting occupational health and safety in mines (chapter S-2.1, r. 14).

O.C. 885-2001, s. 291.

**292. Shot-firer:** Every person who carries out blasting operations or any work requiring the use of explosives shall hold a valid shot-firer's certificate issued by the Commission de la santé et de la sécurité du travail or by an agency recognized by the latter.

O.C. 885-2001, s. 292.

**293. Assistants:** A shot-firer may not be assisted by more than 2 assistants who do not hold the shot-firer's certificate referred to in section 292.

Assistants can help the shot-firer in his work, with the exception of setting off the blast which shall be done by the shot-firer himself.

The shot-firer shall supervise and co-ordinate the work of his assistants.

O.C. 885-2001, s. 293.

**294. Minimum age:** Every worker must be at least 18 years old to perform blasting work or any work requiring the use of explosives.

O.C. 885-2001, s. 294.

**295. Handling and use of explosives:** All blasting work or all work requiring the use of explosives shall be carried out in conformity with Division IV of the Safety Code for the construction industry (chapter S-2.1, r. 4), with the exception of Subdivision 4.2.

O.C. 885-2001, s. 295.

**296. Cancellation or suspension:** The Commission de la santé et de la sécurité du travail shall cancel the certificate of a shot-firer who is found guilty of an offence under section 236 or 237 of the Act respecting occupational health and safety (chapter S-2.1).

The Commission can also cancel or suspend, for a period of from 3 to 24 months, the certificate of a shot-firer when the work he does is the subject of a remedial order under section 182 of the Act respecting occupational health and safety or of an order under section 186 of that Act, by reason that he refused to comply with the Act or this Regulation.

O.C. 885-2001, s. 296.

## **DIVISION XXVI**

### **WORKING IN AN ENCLOSED AREA**

**297. Definitions:** For the purposes of this Division,



**LOGAN  
DRILLING  
GROUP**

“hot work” means any work that requires the use of a flame or that can produce an ignition source;

“qualified person” means a person who, by reason of his knowledge, his training or his experience, is able to identify, assess and control the dangers relating to an enclosed area.

O.C. 885-2001, s. 297.

**298. Qualified workers:** Only those workers who have the knowledge, training or experience required to do work in an enclosed area are qualified to perform work there.

O.C. 885-2001, s. 298.

**299. Entry prohibited:** Entry to an enclosed area is prohibited for any person who is not assigned to do work, to perform a task or to carry out a rescue there.

O.C. 885-2001, s. 299.

**300. Gathering information before work:** Before any work or task is carried out in an enclosed area, the following information shall be available, in writing, on the work premises:

(1) information on the specific dangers associated with the enclosed area and that concern:

(a) the prevailing internal atmosphere, namely the concentration of oxygen, inflammable gases and vapours, combustible or explosive dusts as well as the categories of contaminants likely to be present in this enclosed area or nearby;

(b) the fact that the natural or mechanical ventilation is insufficient;

(c) the materials that are present there and that can cause the worker to sink, to be buried or to drown, such as sand, grain or a liquid;

(d) the interior configuration;

(e) energies such as electricity, moving mechanical parts, heat stress, noise and hydraulic energy;

(f) ignition sources such as open flames, lighting, welding and cutting, static electricity or sparks;





**LOGAN  
DRILLING  
GROUP**

(g) any other special circumstances such as the presence of rodents or insects;

(2) the prevention measures that should be taken to protect the health and to ensure the safety and well-being of workers, and in particular those concerning:

(a) safe methods and techniques for carrying out the work;

(b) appropriate and necessary work equipment to perform the work;

(c) the personal or collective protective means and equipment that the worker shall use when performing his work;

(d) the rescue procedures and equipment stipulated in section 309.

The information referred to in subparagraph 1 of the first paragraph shall be collected by a qualified person.

The precautionary measures referred to in subparagraph 2 of the first paragraph shall be drafted by a qualified person and implemented.

O.C. 885-2001, s. 300.

### **301. Information provided to workers prior to performing work:**

Information referred to in subparagraphs 1 and 2 of the first paragraph of section 300 shall be conveyed and explained to all workers before they enter an enclosed area; this information shall be given by someone who is capable of adequately informing the workers on how to perform the work safely.

O.C. 885-2001, s. 301.

**302. Ventilation:** Except in cases where the safety of workers is ensured in compliance with paragraph 3 of section 303, no worker may enter or be present in an enclosed area unless the latter is ventilated either by natural or mechanical means such that the following atmospheric conditions are maintained:

(1) the concentration of oxygen shall be greater than or equal to 19.5% and less than or equal to 23%;

(2) the concentration of inflammable gases or vapours shall be less than or equal to 10% of the lower explosion limit;



**LOGAN  
DRILLING  
GROUP**

(3) the concentration of one or more contaminants referred to under the sub- subparagraph of subparagraph 1 of the first paragraph of section 300 shall not exceed the standards provided in Schedule I for these contaminants;

If it proves impossible by ventilating the enclosed area to maintain an internal atmosphere in compliance with the standards provided under subparagraphs 1 and 3 of the first paragraph, a worker may only enter or be present in this area if he wears the respiratory protective equipment specified in section 45 and if the internal atmosphere of this enclosed area complies with subparagraph 2 of the first paragraph.

O.C. 885-2001, s. 302.

**303. Combustible dusts:** No worker may enter or be present in an enclosed area where there are combustible dusts posing a risk of fire or explosion unless the safety of the worker is ensured by the implementation of one of the following procedures:

- (1) by maintaining and controlling such dusts at a safe level;
- (2) by controlling existing ignition sources in the enclosed area associated with the training of the worker, by a qualified person, on the methods and techniques to be used for performing the work safely;
- (3) by making the atmosphere in the enclosed area inert, associated with the worker wearing the respiratory protective equipment specified in section 45 and the training of the latter in compliance with paragraph 2.

O.C. 885-2001, s. 303.

**304. Hot work:** Wherever hot work is performed in an enclosed area, a worker may only enter or be present therein if the following conditions are met:

- (1) the conditions provided under sections 302 and 303;
- (2) a continuous monitoring of the concentration of inflammable gases and vapours found therein is carried out by a direct reading instrument equipped with an alarm.

O.C. 885-2001, s. 304.

**305. Special measures:** Unless special precautionary measures are taken by the employer, no worker may enter or be present in an enclosed area when a qualified person has detected the presence of a contaminant,



**LOGAN  
DRILLING  
GROUP**

other than those referred to under section 300 and whose concentration requires the taking of such measures.

These measures include training devised by a qualified person and dealing with methods and techniques that shall be employed by the worker to carry out his work safely in this enclosed area. They can also provide, where necessary, for the use of equipment that is appropriate for this type of work as well as the other personal and collective protective means and equipment that the worker must use.

O.C. 885-2001, s. 305.

**306. Method and frequency of readings:** Readings of the oxygen concentration in the enclosed area as well as of inflammable gases and vapours and contaminants measurable by direct reading and likely to be present in the enclosed area or nearby shall be made:

(1) before workers enter the enclosed area and, subsequently, on a continuous or periodic basis, according to the evaluation of the danger made by a qualified person;

(2) if circumstances modify the internal atmosphere of the enclosed area and result in the evacuation of workers due to the fact that the quality of the air no longer complies with the standards set out in subparagraphs 1 to 3 of the first paragraph of section 302;

(3) if the workers leave the enclosed area and the work site, even momentarily, unless continuous monitoring is maintained.

The readings shall be taken in such a manner as to obtain an accuracy equivalent to that obtained following the methods described in section 44 or, when these measures cannot be applied, by following another recognized method.

O.C. 885-2001, s. 306; O.C. 1120-2006, s. 7.

**307. Register of readings:** The results of the readings made under section 306 shall be recorded by the employer in a register, on the work premises, identifying the enclosed area in question.

However, in the case where the readings are made using continuous reading instruments equipped with alarms that sound when the air quality does not meet the standards set out in subparagraphs 1 to 3 of the first paragraph of section 302, the readings shall only be recorded in the register if the alarm goes off.

Only those entries in the register that do not comply with the standards set out in subparagraphs 1 to 2 of the first paragraph of section 302 shall be kept for a period of at least 5 years.

O.C. 885-2001, s. 307.

**308. Supervision:** When a worker is present in an enclosed area, another person posted and having the skills and information to supervise the worker shall remain in visual contact, hearing contact or contact by any other means with the worker to initiate, if necessary, the rescue procedures quickly.

The person responsible for the supervision shall remain outside the enclosed area.

O.C. 885-2001, s. 308.

**309. Rescue procedure:** A rescue procedure making it possible to rapidly assist any worker performing work in an enclosed area shall be established and tested.

Such a procedure shall be implemented as soon as any situation so requires.

This procedure shall provide for the necessary rescue equipment. It may also make provision for a team of rescuers, an evacuation plan, alarm and communications devices, personal protective equipment, safety harnesses, lifelines, a first aid kit with emergency equipment as well as recovery equipment.

O.C. 885-2001, s. 309.

**310. Unobstructed access:** The personal or collective protective means or equipment used by workers shall not obstruct them when entering or leaving an enclosed area.

O.C. 885-2001, s. 310.

**311. Precautions regarding free flow materials:** No person may enter an enclosed area used to store free flow materials, when filling or emptying is taking place and when precautions have not been taken to prevent an accidental resumption of the operations.

O.C. 885-2001, s. 311; O.C. 1120-2006, s. 8.



**312. Safety harness:** When it is essential that workers enter an enclosed area where free flow materials are stored, each worker entering such an area shall wear a safety harness.

The safety harness shall be attached to a lifeline that is as short as possible and that is firmly attached outside the enclosed area.

O.C. 885-2001, s. 312.

## **DIVISION XXVI.I UNDERWATER WORK**

O.C. 425-2010, s. 3.

**312.1. Definitions:** In this Division,

“area of influence” means a part of a watercourse upstream or downstream from a hydraulic structure or hydroelectric plant that, following a variation in the flow of turbine discharge or discharged water, is subject to current variations that constitute danger for the diver; (*zone d'influence*)

“bottom time” means the time, rounded to the nearest whole minute, comprised between the time the dive begins and the time the diver begins to ascend; (*temps de fond*)

“breathing mixture” means compressed breathing air or a gas mixture containing oxygen in a proportion sufficient to enable the diver to breathe freely without any danger of physiological problems; (*mélange respirable*)

“buddy diving” means any free-swimming scuba diving by a team of 2 divers who ensure each other's safety; (*plongée en compagnonnage*)

“contaminated environment” means a liquid environment containing contaminants within the meaning of the Act respecting occupational health and safety (chapter S-2.1); (*milieu contaminé*)

“decompression accident” means the formation of gas bubbles in the blood and tissues following bad decompression while diving; (*accident de décompression*)

“decompression tables” means the tables indicating the duration of the stops to be complied with in the ascent of a diver according to the characteristics of the dive, such as depth, breathing mixture used and bottom time, in order to reduce the risk of decompression accidents; (*tables de plongée ou de décompression*)



**LOGAN  
DRILLING  
GROUP**

“deep diving” means any diving to depths greater than 40 m; (*plongée profonde*)

“dive time” means the time period comprising the bottom time and the time required to resurface, including decompression time; (*durée de plongée*)

“diving bell” means a vessel linked to the surface, with the bottom open and having, at its top, a dry compartment for the diver; (*cloche de plongée*)

“diving station” means a location on the surface, such as a bank, jetty, floating wharf or boat, large enough to safely hold the dive team and other workers, allow the installation of the required diving equipment and material and ensure the smooth running of the operations; (*poste de plongée*)

“environment with an obstruction” means a submerged work area from which a diver cannot be returned to the surface because of an obstacle exerting a resistance when the umbilical is pulled from the surface; (*milieu à obstacle*)

“free-swimming scuba diving” means scuba diving without a lifeline secured to the surface or a buoy; (*en nage libre ou plongée en nage libre*)

“hyperbaric chamber” means a pressure vessel and associated equipment designed to submit a person to pressures greater than atmospheric pressure; (*caisson hyperbare*)

“police diving” means any diving by police divers who are members of a diving unit constituted within a police force in Québec, during an intervention regarding public order and security in accordance with the laws in force, in particular, rescue, safety of sites, or search and recovery of persons or clues linked to an investigation; (*plongée policière*)

“restricted access area” means a submerged work area, such as a tank, from which a diver can only exit or be taken out through a narrow passageway; (*milieu à accès restreint*)

“saturation diving” means any diving consisting in maintaining the diver pressurized in a submersible compression chamber so that the total pressure of inert gases in the diver's body remains equal to the ambient pressure at the depth of the dive and thus allowing a longer bottom time without lengthening the duration of the decompression; (*plongée à saturation*)

“scientific diving” means any diving to gather specimens or data for scientific purposes, in particular, in archaeology, biology, environment sciences, oceanography, halieutics or microbiology; (*plongée scientifique*)

“scuba diving” means any diving carried out with an open-circuit underwater breathing apparatus attached only to at least one cylinder containing a breathing mixture worn by a diver; (*plongée en mode autonome*)



**LOGAN  
DRILLING  
GROUP**

“Service d'assistance médicale pour les urgences en plongée” means the medical assistance service in case of diving emergency designated by the Ministère de la Santé et des Services sociaux;

“site likely to show a pressure differential” means an underwater site where a crack, piping erosion or opening can cause a difference in pressure causing a source of suction for the diver; (*site susceptible de présenter un différentiel de pression*)

“stage” means the equipment used to bring a diver to the point of entry into the water, in particular a cage, submersible compression chamber, platform or diving bell; (*nacelle de plongeur*)

“submersible compression chamber” means a submersible hyperbaric chamber equipped with a variable pressure lock used to lower divers under pressure or bring them up at the atmospheric pressure; (*tourelle*)

“surface-supply diving” means any diving carried out with an open-circuit underwater breathing apparatus attached to an umbilical supplied from the surface with a breathing mixture; (*plongée en mode non autonome*)

“therapeutic recompression” means the treatment received by a diver, usually in a hyperbaric chamber, in accordance with the recognized treatment tables and practices; (*recompression thérapeutique*)

“treatment tables” means the hyperbaric treatment protocols, including the therapeutic recompression profiles used when treating a diver who was the victim of a decompression accident; (*tables de traitement*)

“umbilical” means a bundle of cables and flexible hoses linking a diver to the surface to supply breathing mixture, power and communication. (*ombilical*)

O.C. 425-2010, s. 3.

**312.2. Scope:** This Division applies to any underwater work, except section 312.6, paragraph 5 of section 312.20, section 312.27, paragraph 1 of section 312.86, section 312.87 and paragraph 1 of section 312.91 that do not apply to police diving.

However, this Division does not apply to the teaching and practice of recreational diving that are governed by the Act respecting safety in sports (chapter S-3.1).

O.C. 425-2010, s. 3.

§1. *General*





**LOGAN  
DRILLING  
GROUP**

O.C. 425-2010, s. 3.

**312.3. Object:** The purpose of this Division is to establish standards applicable to underwater work in order to ensure the health, safety and physical integrity of divers and any other workers, in particular with regard to the training of dive team members, composition and operation of the dive team, required equipment and material, breathing mixture to be used, diving documents, medical monitoring and general and special safety standards to apply.

O.C. 425-2010, s. 3.

**312.4. Employer's obligations:** An employer must in particular ensure that each member of the dive team performs the duties assigned.

In a scientific dive performed by a government agency, educational institution, non-profit research institution or any other non-profit institution, the employer must comply with the provisions of this Division or the Canadian Association for Underwater Science Standard of Practice for Scientific Diving, 3rd Edition, October 1998.

O.C. 425-2010, s. 3.

**312.5. Diver's obligations:** A diver must

- (1) inform the diving supervisor of any health condition that may make the diver unfit for diving; and
- (2) keep an up-to-date diving logbook and retain it for at least 5 years.

O.C. 425-2010, s. 3.

## §2. *Diving modes*

O.C. 425-2010, s. 3.

**312.6. Diving mode according to work:** Surface-supply diving is required for the following:

- (1) work performed on a construction site within the meaning of section 1 of the Act respecting occupational health and safety (chapter S-2.1);





**LOGAN  
DRILLING  
GROUP**

- (2) welding or cutting;
- (3) jetting or suction dredging;
- (4) work requiring the use of a lifting device to handle loads underwater;
- (5) work requiring the handling or use of explosives;
- (6) deep diving work;
- (7) work in a contaminated environment requiring the exceptional preventive measures referred to in sections 312.74 to 312.79;
- (8) work involving dives with special hazards requiring the safety measures referred to in sections 312.86 to 312.91; and
- (9) inspecting submerged structures or infrastructures.

O.C. 425-2010, s. 3.

### §3. *Dive team*

O.C. 425-2010, s. 3.

## **312.7. Composition of the dive team:** All diving must be performed in teams.

Subject to sections 312.19, 312.76, 312.80, 312.84, paragraph 1 of section 312.86, section 312.87, paragraph 1 of section 312.88, the first paragraph of section 312.89 and paragraph 1 of section 312.91, a dive team must consist of at least 3 divers sharing the duties of diving supervisor, diver, standby diver and diver's tender, according to the following:

- (1) the diving supervisor may also act as standby diver or diver's tender; and
- (2) the standby diver may also act as diving supervisor but not as diver's tender.

In addition, the dive team includes 2 hyperbaric chamber operators when such a chamber is required.

O.C. 425-2010, s. 3.



**LOGAN  
DRILLING  
GROUP**

**312.8. Training of dive team members:** Within 12 months after 10 June 2010, each dive team member, according to the diving mode and the position held, must

(1) receive training in occupational diving according to CSA Standard CSA Z275.5-05, Occupational Diver Training, and hold a certificate to that effect issued by an educational institution authorized to offer such training by the Ministère de l'Éducation, du Loisir et du Sport or by an educational institution approved by an occupational diving certification agency recognized by the Commission de la santé et de la sécurité du travail, or obtain skills recognition according to CSA Standard CAN/CSA Z275.4-02, Competency Standard for Diving Operations, from such an institution or agency;

(2) receive, in the case of a dive carried out in a site likely to show a pressure differential, training on the intervention techniques in a situation of pressure differential and hold a certificate to that effect issued by an educational institution authorized by the Ministère de l'Éducation, du Loisir et du Sport to offer training in occupational diving; or

(3) receive, in the case of police diving, diving training provided by a police force or recognized by the École nationale de police du Québec and, where applicable, hold a certificate to that effect.

In addition, at least every 3 years, each dive team member referred to in subparagraph 2 must update his or her knowledge and hold a certificate to that effect issued by an educational institution authorized by the Ministère de l'Éducation, du Loisir et du Sport to offer training in occupational diving.

Subparagraph 2 and the second paragraph also apply in the case of police diving. The training must however be provided by a police force or recognized by the École nationale de police du Québec.

Every person who holds a certificate of training in occupational diving or a certificate to the same effect, depending on the diving mode and the position held, issued by an occupational diving school recognized by the Commission de la santé et de la sécurité du travail before 10 June 2010 is exempt from the requirements in subparagraph 1.

O.C. 425-2010, s. 3.

**312.9. Minimum age:** A dive team member must be at least 18 years of age.

O.C. 425-2010, s. 3.



**LOGAN  
DRILLING  
GROUP**

**312.10. Experience of the diving supervisor:** The diving supervisor responsible for underwater work on a construction site must have carried out 100 dives and have at least 1,000 hours of underwater work on a construction site declared to the Commission de la construction du Québec, in accordance with the Act respecting labour relations, vocational training and workforce management in the construction industry (chapter R-20).

O.C. 425-2010, s. 3.

**312.11. Duties of the diving supervisor:** Every dive must be supervised by a diving supervisor who must, in particular,

- (1) before performing underwater work upstream or downstream from a hydraulic structure or a hydroelectric plant, communicate with its owner. Section 312.89 applies if the work is performed in the area of influence;
- (2) before each dive in seaways or port facilities, notify the authorities concerned;
- (3) before each dive, prepare a dive plan that complies with section 312.31, brief the dive team members on the plan, discuss it with them and obtain their agreement;
- (4) ensure that the diving equipment and installations comply with those described in this Division and are in good working order;
- (5) ensure that each diver wears the required diving equipment, in particular that the standby diver's mask or helmet and suit provide protection equivalent to the underwater diver's mask or helmet and suit, and that it is installed correctly;
- (6) ensure that each diver checks his or her equipment once in the water, before starting the dive;
- (7) see to the implementation of the dive plan and to the prior setting up of any installation enabling the standby diver to take action quickly and in particular to deal with any emergency;
- (8) supervise dive team members;
- (9) remain on the surface unless an intervention is required because the safety of a diver is threatened and only after delegating the responsibilities of diving supervisor to a diver on the surface;
- (10) designate the dive team member on the surface who is responsible for radio communication with each diver underwater;



**LOGAN  
DRILLING  
GROUP**

- (11) prepare and update a register of the dives supervised; and
- (12) ensure that any other activity does not endanger the health or safety of the dive team members.

O.C. 425-2010, s. 3.

**312.12. Duties of the standby diver:** The standby diver must

- (1) remain on the surface and dive only in case of emergency to help a diver underwater;
- (2) ensure that the required diving and communication equipment is ready for use in the environmental conditions surrounding the diver underwater; and
- (3) be ready to dive in the environmental conditions surrounding the diver underwater within not more than
  - (a) 5 minutes for scuba diving; or
  - (b) 7 minutes for surface-supply diving.

In addition, the standby diver may not assist more than one diver at a time, except if the distance separating the standby diver from the divers' entry points does not exceed 30 m.

A scuba diver may not act as a standby diver for a surface-supplied diver.

O.C. 425-2010, s. 3.

**312.13. Duties of the diver's tender:** The diver underwater must always be assisted by a diver's tender who must

- (1) constantly monitor the diver's lifeline; and
- (2) see to the operation of the breathing mixture supply and distribution system used by the surface-supplied diver.

O.C. 425-2010, s. 3.

**312.14. Duties of the hyperbaric chamber operator:** The hyperbaric chamber operator must

- (1) see exclusively to the operation of the hyperbaric chamber; and



(2) be assisted by another member of the dive team if the operator has been diving within the last 6 hours.

O.C. 425-2010, s. 3.

**312.15. Exclusivity of the duties of the dive team:** Dive team members must carry out only the duties assigned to them.

The duties performed on the surface in relation to diving operations must be assumed by workers who are not members of the dive team.

O.C. 425-2010, s. 3.

*§4. General safety standards*

O.C. 425-2010, s. 3.

**312.16. Lifeline:** Subject to section 312.19, a diver must be tethered to the surface by a lifeline.

The lifeline must

- (1) be made of cord
  - (a) of material other than natural fibre or monofilament polypropylene;
  - (b) at least 12 mm in diameter;
  - (c) at least 1.5 times the length used underwater;
  - (d) with a breaking strength greater than 20 kN; and
  - (e) free of knots and splices, except at the ends where only splices are allowed;
- (2) be secured, on the surface,
  - (a) to an anchorage point that ensures a breaking strength greater than 20 kN, for surface-supply diving, unless that point is a boat that cannot ensure that strength, in which case the cord must be secured to an anchorage point as solid as possible; or
  - (b) to an anchorage point that ensures a sufficient breaking strength when the lifeline is at its maximum tension, for scuba diving; and
- (3) be attached to a diving harness.



**LOGAN  
DRILLING  
GROUP**

In addition, the lifeline must

- (a) allow to transmit line signals, pull a diver up or stop a diver's movement underwater; and
- (b) protect the air hose and communication cable against tension when it is integrated into an umbilical.

O.C. 425-2010, s. 3.

**312.17. Lifeline of a standby diver:** In addition to the standards listed in section 312.16, the lifeline of a standby diver must be at least 3 m longer than that of the diver underwater.

O.C. 425-2010, s. 3.

**312.18. Umbilical:** The umbilical must be protected against kinking or crushing likely to hinder its operation and free of any intermediate linkage over its entire length.

An umbilical may be used as a lifeline if it was designed for that purpose. If not, a lifeline must be integrated to protect the umbilical against any tension.

O.C. 425-2010, s. 3.

**312.19. Free-swimming scuba diving:** If a diver's lifeline could get stuck or tangled, the diving supervisor, when another work method cannot be used, may authorize free-swimming scuba diving, on the condition that an accompanying diver secured to the surface by a lifeline goes underwater and maintains permanent visual contact with the free-swimming diver. The accompanying diver is added to the dive team referred to in section 312.7.

If the lifeline of the accompanying diver could also get stuck or tangled, the diving supervisor may authorize the 2 divers to buddy dive in accordance with section 312.20.

O.C. 425-2010, s. 3.

**312.20. Buddy diving:** While buddy diving, the divers must

- (1) establish a communication code by hand signals to be used in case of emergency or failure of the voice communication system;

- (2) maintain constant visual contact with each other during the entire dive;
- (3) terminate the dive immediately if one of the divers begins to ascend;
- (4) apply the emergency measures in the dive plan if one of the divers does not respond to a signal; and
- (5) be tethered to the surface by a cord attached to a buoy, which must be constantly visible and monitored so that immediate help may be provided to the divers in case of emergency.

O.C. 425-2010, s. 3.

**312.21. Decompression tables:** Except in saturation diving, dives, ascents and rest periods must comply with the decompression tables of the Defence and Civil Institute of Environmental Medicine of the Department of National Defence of Canada corresponding to the breathing mixture used.

Except in case of emergency, a diver must never be in a situation of undue exposure defined in those tables.

O.C. 425-2010, s. 3.

**312.22. Communication system by line signals:** Except in the case of a buddy dive in accordance with section 312.20, a 2-way communication system by line signals must be established for each dive so that

- (1) a diver may immediately obtain help from the dive team members on the surface, if needed; and
- (2) the dive team on the surface may, at any time, call a diver back to the surface.

O.C. 425-2010, s. 3.

**312.23. Voice communication system:** In addition to the system referred to in section 312.22, a 2-way voice communication system between the diver underwater and the dive team members on the surface must be used for all dives

- (1) that are surface-supplied;
- (2) with a buddy and free-swimming;
- (3) at the end of submerged pipes;



**LOGAN  
DRILLING  
GROUP**

- (4) in an environment with an obstruction;
- (5) in a restricted access area;
- (6) under ice;
- (7) in a contaminated environment; and
- (8) to a depth of more than 40 m in the case of a police dive when the location does not allow the transportation of a hyperbaric chamber to the diving station.

During a dive to a depth of more than 50 m, the 2-way voice communication between the diver and the surface must be recorded for the entire dive. The recording must be kept for at least 48 hours.

A dive must be interrupted if the 2-way voice communication system should fail.

O.C. 425-2010, s. 3.

**312.24. Features of the voice communication system:** The communication system referred to in section 312.23 must

- (1) have a transmission quality that allows the diver's breathing to be clearly heard; and
- (2) be equipped with a voice unscrambler if a gas mixture containing helium or other sound-distorting gas is used.

O.C. 425-2010, s. 3.

**312.25. Dive time:** The sum of a diver's dive times must never exceed 4 hours per 24-hour period.

O.C. 425-2010, s. 3.

**312.26. Signalling:** Any underwater work in navigational waters must be signalled in accordance with the Collision Regulations (C.R.C., c. 1416) and the Private Buoy Regulations (SOR/99-335).

When a diver is in the water, no boat or other floating equipment in the work area may be moved without the authorization of the diving supervisor.





**LOGAN  
DRILLING  
GROUP**

O.C. 425-2010, s. 3.

**312.27. Current:** When the current at the underwater workstation where the diver must perform duties is over 1 knot, a current deflector must be used to reduce the current to not more than 1 knot. The deflector manufacturing and installation drawings must be approved by an engineer and be available at the dive site.

If it is impossible to use a deflector, another means ensuring equivalent safety must be approved by an engineer.

O.C. 425-2010, s. 3.

**312.28. Handling and use of explosives:** Any work requiring the handling or use of explosives underwater must be carried out in accordance with Division IV of the Safety Code for the construction industry (chapter S-2.1, r. 4), except Subdivision 4.2 in the case of a police dive.

In addition, the lead wire must not be attached to the detonator before all divers have moved at least 800 m away from the explosion site on the water or have taken shelter on shore.

O.C. 425-2010, s. 3.

**312.29. Underwater welding and cutting:** Any underwater welding or cutting, as well as the installation, handling and maintenance of equipment required to that effect, must be carried out in accordance with Clause 9.5 of CSA Standard CAN/CSA W117.2-01, Safety in Welding, Cutting and Allied Processes, except Clause 9.5.3.3.

O.C. 425-2010, s. 3.

**312.30. Protection against electrical hazards:** Electric voltage of devices, equipment and tools used underwater must not exceed 110 V in direct current or 42 V in alternating current.

Those devices, equipment and tools must be

- (1) insulated;
- (2) equipped with a shut-off switch;



**LOGAN  
DRILLING  
GROUP**

(3) equipped with a ground fault detector if the power supply is alternating current from the public network or its equivalent; and

(4) grounded, in the case of equipment.

O.C. 425-2010, s. 3.

*§5. Diving documents*

O.C. 425-2010, s. 3.

**312.31. Dive plan:** The dive plan that must be prepared by the diving supervisor in accordance with section 312.11 must include at least the following items:

(1) the description of the dive sites, seabed characteristics and the nature of the work to be carried out;

(2) the depth and duration of the dive;

(3) the current velocity and, if applicable, the preventive measures to be taken to eliminate the risk of drifting;

(4) the diving mode prescribed and the required equipment and material, including the nature and quantity of the breathing mixture used;

(5) the identification of the hazards and the preventive measures to be taken to eliminate or control them;

(6) the preventive measures in a contaminated environment and whether they are general or exceptional;

(7) the duties assigned to each member of the dive team;

(8) the establishment of a code for communication and recall to the surface by line signals;

(9) the measures to be taken in case of emergency, such as communication failure between the surface and a diver, equipment failure or poor environmental conditions, such as wind, bad weather, currents, waves, bad visibility and contaminants; those measures must include an underwater rescue simulation at every dive site, including a site likely to show a pressure differential, or when 50% or more of the dive team is replaced;

(10) the evacuation and transportation methods for an injured diver, in particular, air transport, if applicable;



**LOGAN  
DRILLING  
GROUP**

(11) the contact information of the medical services to contact in case of decompression accident or other, particularly the contact information of the Service d'assistance médicale pour les urgences en plongée; and

(12) the contact information of the administrative authorities concerned by the underwater work, such as the police, the port authority and the authorities in charge of the navigational waters, water intakes, water purification plants and hydraulic structures.

O.C. 425-2010, s. 3.

**312.32. Diving logbook:** The diving logbook that must be prepared by the diving supervisor in accordance with section 312.11 must include, for each dive supervised, a record containing the information referred to in the second paragraph of section 312.33.

The logbook must be retained by the employer for at least 5 years.

O.C. 425-2010, s. 3.

**312.33. Diver's logbook:** The logbook kept by each diver in accordance with section 312.5 must contain the following information and documents:

- (1) the diver's name, address and date of birth;
- (2) the training certificates or recognition referred to in sections 312.8 and 312.60; and
- (3) the medical certificate referred to in section 312.57.

In addition, the diver must enter the following information in the logbook after each dive:

- (1) the name of the employer for which the dive was performed;
- (2) the description of the work;
- (3) the date and time of the dive;
- (4) the diving devices and breathing mixture used;
- (5) the maximum depth reached during the dive;
- (6) the dive time;
- (7) the bottom time;



**LOGAN  
DRILLING  
GROUP**

- (8) the water temperature;
- (9) the time of ascent and arrival on the surface;
- (10) the interval between successive dives;
- (11) in the case of a dive from a submerged or pressure vessel, the depth of that vessel as well as its time of arrival and departure; and
- (12) any other relevant information, such as weather conditions, currents, emergency simulation, use of a therapeutic recompression or hyperbaric exposure and the protocol carried out.

The diver's logbook must be available at all times at the diving station.

O.C. 425-2010, s. 3.

**312.34. Maintenance logbook:** Maintenance information on the diving equipment and material, including the breathing mixture supply system, such as a description of the location and the material maintained, the date of the maintenance as well as the name of the person doing the work, must be recorded in a logbook.

The logbook must be retained by the employer for at least 5 years.

O.C. 425-2010, s. 3.

#### *§6. Equipment and material*

O.C. 425-2010, s. 3.

**312.35. Scuba diving equipment:** The use of the following minimum equipment is compulsory for any scuba diving:

- (1) an open-circuit underwater breathing apparatus attached to at least one cylinder containing a breathing mixture and equipped with a demand regulator;
- (2) a submersible pressure gauge;
- (3) an emergency self-contained breathing apparatus;
- (4) subject to section 312.37 and paragraph 2 of section 312.69, a wet suit appropriate to the work conditions;
- (5) a diving mask;





**LOGAN  
DRILLING  
GROUP**

- (6) an inflatable buoyancy compensator;
- (7) a pair of swim fins;
- (8) a harness, designed for diving by a manufacturer, with pelvic support and at least 2 attachment points, including 1 dorsal point, with a breaking strength greater than 20 kN and that are accessible and visible when the diver is dressed and equipped;
- (9) a releasable weight belt equipped with a quick-release buckle or ballasting system;
- (10) a depth gauge;
- (11) a knife suitable for the work; and
- (12) a light and a rescue or stroboscopic beacon for night diving.

O.C. 425-2010, s. 3.

**312.36. Surface-supply diving equipment:** The use of the following equipment is compulsory for any surface-supply diving:

- (1) a surface-supplied underwater breathing apparatus including a helmet or a full face mask equipped with a continuous or demand regulator, in addition to protective headgear;
- (2) an umbilical;
- (3) an emergency self-contained breathing apparatus attached to the appropriate accessories, with a regulator equipped with a shut-off valve and a submersible pressure gauge;
- (4) subject to section 312.37 and paragraphs 2 of sections 312.69 and 312.78, a wet suit suitable for the work conditions;
- (5) non-releasable ballast;
- (6) a depth gauge or pneumo depth gauge for deep diving;
- (7) a harness, designed for diving by a manufacturer, with pelvic support and at least 5 attachment points, including 1 dorsal point accessible to the diver using an extension of at least 20 kN; in addition, the harness and the 5 attachment points must have the following features:
  - (a) a breaking strength greater than 20 kN;



**LOGAN  
DRILLING  
GROUP**

(b) they are accessible and visible by the standby diver when the diver is dressed and equipped;

(8) a suitable knife;

(9) a pair of swim fins and, for bottom work, safety boots especially designed to protect against the risks of puncture or the fall of heavy or sharp objects; and

(10) a light for night diving.

O.C. 425-2010, s. 3.

**312.37. Thermal protection when diving:** Diving in water whose temperature is higher than 40 °C is prohibited.

A diver must wear a controlled temperature suit in the following cases:

(1) when diving in water between 35 °C and 40 °C for more than 15 minutes; and

(2) when diving in water at 5 °C or colder for more than 90 minutes.

A diver must wear a variable volume dry suit in the following cases:

(1) when diving in water at 14 °C or colder for more than 15 minutes; and

(2) when diving in water at 5 °C or colder for 90 minutes or less.

The heating or cooling unit used to warm up or cool down the controlled temperature suit must be equipped with a temperature control and a hot or cold water reserve, as the case may be, to warm up or cool down the suit for the time required by the diver's ascent in case of failure of the heating or cooling unit.

A diver must wear a wet suit under the diving suit in the cases referred to in subparagraphs 1 and 2 of the first paragraph.

O.C. 425-2010, s. 3.

**312.38. Diving station and required material:** All dives require the installation of a diving station that must include at least the following material:

(1) a weighted descent line, at least 12 mm in diameter and long enough to reach the bottom at the maximum depth of the underwater workstation, that must be used in particular to guide the diver during descent and ascent; if

such a line cannot be used, any other appropriate means to guide the diver, taking into account the depth and diving conditions;

- (2) a bottom timer and clock;
- (3) a copy of the decompression tables of the Defence and Civil Institute of Environmental Medicine of the Department of National Defence of Canada;
- (4) a copy of the standards referred to in this Division; and
- (5) in addition to the equipment required in accordance with the First-aid Minimum Standards Regulation (chapter A-3.001, r. 10), an oxygen inhalation kit containing at least the items described in Part 1 of Schedule X and, if applicable, enough oxygen to be administered to a diver who was the victim of an accident until the diver enters the hyperbaric chamber or until medical attendants are able to administer oxygen to the diver.

O.C. 425-2010, s. 3.

**312.39. Stage:** A stage must be used to move divers to the entry point into the water if the diving station is more than 2 m above water.

The stage must

- (1) be built to prevent tipping or spinning;
- (2) have a floor surface of at least 0.83 m<sup>2</sup>; and
- (3) be able to support the weight of at least 2 divers with their diving equipment.

If the stage is a cage, submersible compression chamber, platform or diving bell, it must meet, in addition to the requirements referred to in the second paragraph, the requirements referred to in paragraph 3 of section 3.10.7 of the Safety Code for the construction industry (chapter S-2.1, r. 4), except subparagraph *d* of that paragraph.

If the entry point into the water is 2 m or less from the water surface and there is no stage, a ladder must be available to the divers.

When the site's configuration does not allow for a stage to be used, another means providing equivalent safety may be used to move the diver to the entry point. The drawings of the means must be prepared by an engineer and available at the diving station.

O.C. 425-2010, s. 3.

**312.40. Hoisting of a stage:** A stage must be hoisted using a crane, boom truck or device designed for lifting a worker according to the following conditions:

- (1) the crane or boom truck must comply with the requirements in subparagraphs d and e of paragraph 2 and paragraph 4 of section 3.10.7 of the Safety Code for the construction industry (chapter S-2.1, r. 4); and
- (2) the device designed for lifting a worker must
  - (a) comply with the requirements in paragraph 1 of section 3.10.7 of the Safety Code for the construction industry; and
  - (b) be the subject of drawings, including the installation and disassembly processes, signed and sealed by an engineer and available at the diving station.

The crane, boom truck or device referred to in the first paragraph must be available at all times to move divers. The crane, boom truck or device may not be used for other purposes while divers are still in the water.

Only dive team members may give instructions to the operator of the crane, boom truck or device referred to in the first paragraph. The operator must be linked to the dive team members' 2-way voice communication system when such a system is required.

O.C. 425-2010, s. 3.

**312.41. Booster power supply:** In case of main power source failure, another power source must be turned on rapidly to maintain the operation of all diving devices and equipment required to return a diver to the surface.

O.C. 425-2010, s. 3.

*§7. Breathing mixture*

O.C. 425-2010, s. 3.

**312.42. Compressed breathing air:** The compressed breathing air must comply with section 48.

O.C. 425-2010, s. 3.





**LOGAN  
DRILLING  
GROUP**

**312.43. Gas mixture:** The gas mixture used in a breathing mixture must meet the following requirements:

- (1) the gases must be at least 99.5% pure;
- (2) the proportion of oxygen, nitrogen, helium and any other gas present in the mixture must comply with the decompression tables of the Defence and Civil Institute of Environmental Medicine of the Department of National Defence of Canada;
- (3) the concentration of contaminants in the mixture must not exceed the maximum concentration provided for in Part 2 of Schedule X;
- (4) the concentration of contaminants other than those provided for in Schedule II must not reach the odour threshold or exceed 1/25 of the time-weighted average exposure values provided for in Part 1 of Schedule I;
- (5) the particles must not exceed 0.3  $\mu\text{m}$ ; and
- (6) the mixture must be odourless.

O.C. 425-2010, s. 3.

**312.44. Pure oxygen:** No submerged diver may breathe pure oxygen at a depth exceeding 7.6 m, except for decompression or therapeutic purposes.

The oxygen used must be 99.5% pure and meet the requirements of paragraphs 3 to 6 of section 312.43.

**312.45. Dew point:** The dew point of the breathing mixture must be at least 5 °C lower than the lowest temperature to which the supply system or one of its components is exposed.

O.C. 425-2010, s. 3.

*§8. Supply system*

O.C. 425-2010, s. 3.

**312.46. Composition of the supply system:** The system must supply the breathing mixture to the diver at the required temperature, pressure and rate.

The system must include the following components:



**LOGAN  
DRILLING  
GROUP**

- (1) a main supply capable of supplying the required quantity of breathing mixture for the entire dive;
- (2) an auxiliary breathing mixture reserve at the diving station; and
- (3) an emergency self-contained breathing apparatus with sufficient breathing mixture reserve to allow the diver to resurface or re-enter a diving bell or another submersible chamber in case of emergency; the apparatus must contain the following minimum quantities:
  - (a) for surface-supply diving
    - (i) to a depth equal to or less than 15 m, 1,415 litres at a minimum nominal pressure of 70%; and
    - (ii) to a depth greater than 15 m, under ice, in an environment with an obstruction or in a submerged pipe, 2,265 litres at a minimum nominal pressure of 70%;
  - (b) for scuba diving
    - (i) to a depth equal to or less than 15 m, 368 litres; and
    - (ii) to a depth greater than 15 m, 850 litres.

Each component of the supply system must operate independently. An interruption of the main supply must not prevent supply from the auxiliary reserve or the emergency self-contained breathing apparatus.

O.C. 425-2010, s. 3.

**312.47. Auxiliary reserve:** The auxiliary reserve referred to in subparagraph 2 of the second paragraph of section 312.46 must include,

- (1) for scuba diving, a complete diving breathing apparatus, including a half mask and a full cylinder, for each diver underwater;
- (2) for surface-supply diving, a breathing mixture reserve equal to 2.5 times the required quantity to allow each diver to ascend and undergo decompression; and
- (3) if a submersible compression chamber is used, a breathing mixture reserve that would allow the underwater work to be extended for 72 hours.

O.C. 425-2010, s. 3.

**312.48. Compressed breathing air supply system:** The compressed breathing air supply system and its components must meet the requirements of section 48.

O.C. 425-2010, s. 3.

**312.49. Gas mixture supply system:** The gas mixture supply system and its components must

- (1) be designed and manufactured for their intended use;
- (2) be maintained in accordance with the manufacturer's instructions, taking into account the conditions and depths in which they are used;
- (3) be repaired and tested in accordance with the manufacturer's instructions;
- (4) be protected against freezing due to the low temperature of the water or ambient air or the expansion of a gas;
- (5) include a mixture heater, if the gas mixture includes helium; and
- (6) not be modified unless that modification is approved in writing by the manufacturer.

O.C. 425-2010, s. 3.

**312.50. Lines:** Each line of the breathing mixture or oxygen supply system must

- (1) be designed for its intended use and clearly identified to the diver supplied;
- (2) include an easy-to-reach shockproof supply valve; and
- (3) be equipped with a pressure gauge, downstream from the supply valve, indicating the supply pressure of the breathing mixture or oxygen, with a dial and numbers easily readable by the diver's tender.

The use of flexible hoses in an oxygen supply line is prohibited, except if the high speed flow of the oxygen in the flexible hose does not create a differential pressure greater than 700 kPa from one end of the hose to the other.

The use of quick-opening valves in an oxygen supply line is also prohibited, except if emergency stop valves are located at the point where the line goes through the hull of a hyperbaric chamber.

For the purposes of this section, “lines” means the rigid and flexible hoses and fittings of the breathing mixture or oxygen supply and distribution system.

O.C. 425-2010, s. 3.

**312.51. Breathing mixture cylinder:** Every breathing mixture cylinder must be submitted to a hydrostatic test and maintained and stored in accordance with CSA Standard CSA Z94.4-93, Selection, Use and Care of Respirators.

O.C. 425-2010, s. 3.

**312.52. Mask, helmet and regulator:** Every mask, helmet and regulator must

(1) be used and maintained in accordance with the manufacturer's instructions; and

(2) be cleaned and disinfected in accordance with Clause 10.2 and Annex F to CSA Standard CSA Z94.4-93, Selection, Use and Care of Respirators.

O.C. 425-2010, s. 3.

**312.53. Check valve:** A surface-supplied diver's helmet and mask must be equipped with a check valve that must be checked before each dive.

O.C. 425-2010, s. 3.

**312.54. Pressure gauge:** The use of a defective pressure gauge is prohibited. A pressure gauge that cannot be repaired must be destroyed.

A pressure gauge must be checked at least every 6 months, unless the manufacturer has given instructions to the contrary.

O.C. 425-2010, s. 3.

**312.55. Compressor:** Every low pressure compressor must





**LOGAN  
DRILLING  
GROUP**

- (1) operate automatically and discharge the breathing mixture in an air cylinder having a sufficient volume to avoid excessive pressure variations;
- (2) supply and maintain a breathing mixture supply corresponding to twice the required air flow, at a pressure 25% greater than the maximum pressure required;
- (3) have a purification system that complies with Annex D to Standard CAN3 Z180.1 M85, Compressed Breathing Air and Systems; and
- (4) be used with cylinders, devices and fittings that comply with CSA Standard CSA B51-M1991, Boiler, Pressure Vessel and Piping Code.

A high pressure compressor, 6.9 MPa or more, must not be used to directly supply a surface-supplied diver.

O.C. 425-2010, s. 3.

#### *§9. Medical monitoring*

O.C. 425-2010, s. 3.

**312.56. Competence of the diving physician:** A diving physician must comply with CSA Standard CAN/CSA Z275.4-02, Competency Standard for Diving Operations. The physician must

- (1) have the basic training in Level I diving medicine provided for in the standard, in order to detect the symptoms of exposure to undue pressures and examine a diver's state of health; and
- (2) have the advance training in Level II diving medicine provided for in the standard, in order to treat in a hyperbaric chamber a diver who was the victim of a decompression accident and supervise at a distance a chamber operator during that treatment.

O.C. 425-2010, s. 3.

**312.57. Medical examination and certificate:** Every 2 years, divers must undergo a physical examination by a diving physician or more often if the physician deems it necessary and obtain a medical certificate attesting that they are fit to dive. The medical certificate is valid for a maximum of 2 years.

The diving supervisor may also require that a diver again undergo the physical examination referred to in the first paragraph and obtain a new



**LOGAN  
DRILLING  
GROUP**

medical certificate, if the supervisor considers that the diver is unfit to dive safely.

O.C. 425-2010, s. 3.

**312.58. Contents of the medical certificate:** The medical certificate must indicate

- (1) the name of the diver;
- (2) the date of the physical examination and the expiry date of the medical certificate;
- (3) whether the diver's health allows the diver to dive in the required mode;
- (4) any restriction regarding the diver's health likely to limit diving activities; and
- (5) the name and address of the diving physician who issued the certificate.

The certificate must be attached to the diver's logbook.

O.C. 425-2010, s. 3.

**312.59. Medical alert bracelet or tag:** Every diver must wear a medical alert bracelet or tag for at least 24 hours after a dive. The following information must be engraved on the bracelet or tag:

- (1) the words "professional diver"; and
- (2) the telephone number of the Service d'assistance médicale pour les urgences en plongée.

O.C. 425-2010, s. 3.

**312.60. First-aid attendants:** Every dive team member must

- (1) be trained in occupational first-aid including a component dealing with near-drowning and hold a certificate to that effect; and
- (2) attend a 4-hour training course on the administration of oxygen to a diver victim of an accident and on the use and maintenance of the oxygen inhalation kit required in section 312.38 and hold a certificate to that effect.

Those certificates must be issued by an agency recognized by the Commission de la santé et de la sécurité du travail, be renewed every 3 years and be attached to the diver's logbook or be available on request.

O.C. 425-2010, s. 3.

**312.61. Communication with the Service d'assistance médicale pour les urgences en plongée:** A communication system with the Service d'assistance médicale pour les urgences en plongée must be available at all times at the diving station so that any diver who is injured or was the victim of a decompression accident may receive the required medical supervision.

O.C. 425-2010, s. 3.

**312.62. Air transport of a diver:** When transporting by air a diver who was the victim of a decompression accident, the cabin pressure must not be lower than the pressure at an altitude of 300 m from the diving station and in-flight conditions must be established by the Service d'assistance médicale pour les urgences en plongée.

O.C. 425-2010, s. 3.

**312.63. Decompression accident:** If a diver is the victim of a decompression accident, the hyperbaric chamber operator must initiate the treatment of the decompression accident victim in the chamber.

The operator must also communicate as soon as possible with the Service d'assistance médicale pour les urgences en plongée so that the treatment may be continued under the supervision of a diving physician.

Before diving again, the diver must obtain a medical report attesting that the diver is fit to dive.

O.C. 425-2010, s. 3.

**312.64. Hyperbaric chamber and chamber medical kit:** Subject to section 312.65, a Class A hyperbaric chamber built, used and maintained in accordance with CAN/CSA Standard Z275.1-05, Hyperbaric Facilities, except Clauses 8 and 14, as well as a chamber medical kit with the basic content described in Part 3 of Schedule X, must be available at all times at the diving station in the following cases:

- (1) the dive exceeds the no-decompression limit; or



**LOGAN  
DRILLING  
GROUP**

(2) the dive depth exceeds 40 m, or 15 m for the work provided for in section 312.6.

The chamber and kit are for the divers' exclusive use. They must be kept in good condition.

For the purposes of this section, "no-decompression limit" means the bottom time that, according to the decompression tables, does not require any decompression stop because of dive depth and duration.

O.C. 425-2010, s. 3.

**312.65. Special measures concerning the hyperbaric chamber:** The following measures must be taken when a police dive is carried out in a location not accessible by land or in any other location where a hyperbaric chamber cannot be transported to the diving station:

- (1) air transport must be available on the site;
- (2) a satellite telephone must be available, if needed; and
- (3) prior to the dive, communication must be established with the nearest hospital equipped with a hyperbaric chamber in order to ensure its availability in case of emergency.

O.C. 425-2010, s. 3.

#### *§10. Special safety standards*

O.C. 425-2010, s. 3.

**312.66. Applicable provisions:** The other provisions of this Division apply, with the necessary modifications, to the types of dive referred to in this subdivision.

O.C. 425-2010, s. 3.

#### *§10.1. General preventive measures for diving in a contaminated environment*

O.C. 425-2010, s. 3.





**LOGAN  
DRILLING  
GROUP**

**312.67. General preventive measures:** The general preventive measures described in sections 312.68 to 312.73 apply to a dive in a contaminated environment as a result of industrial, agricultural or water purification activities.

O.C. 425-2010, s. 3.

**312.68. Additional preventive measures in the dive plan:** In addition to the items referred to in section 312.31, the dive plan must refer to

- (1) the protective clothing and respiratory equipment that the workers other than divers must use, if applicable;
- (2) the required material and decontamination and cleaning measures for the divers and other workers and their equipment;
- (3) a depot for contaminated clothing and equipment; and
- (4) the measures to be taken in case of intoxication, including the nature of the first-aid to be given and the telephone numbers of the Centre antipoison du Québec and the Service du répertoire toxicologique of the Commission de la santé et de la sécurité du travail.

O.C. 425-2010, s. 3.

**312.69. Diving equipment:** In addition to the equipment referred to in sections 312.35 and 312.36, except paragraph 4, the following equipment must be worn:

- (1) a positive pressure full face mask;
- (2) a dry suit; and
- (3) a pair of watertight gloves.

O.C. 425-2010, s. 3.

**312.70. Equipment and installation maintenance:** Before each dive in a contaminated environment, the equipment and the installation must

- (1) be inspected to detect any wear;
- (2) be decontaminated before being used; and
- (3) be destroyed if they cannot be decontaminated.



**LOGAN  
DRILLING  
GROUP**

O.C. 425-2010, s. 3.

**312.71. Safety instructions:** In the surface work area, the following safety instructions must be followed:

- (1) access to the work area is restricted to authorized persons only;
- (2) no food, drink or tobacco product may be brought into that area; however, drinking water protected from contamination must be available to prevent dehydration; and
- (3) the workers and their equipment must be decontaminated or cleaned before leaving the work area.

O.C. 425-2010, s. 3.

**312.72. Vaccination:** Any diver working in a contaminated environment must be provided free of charge with vaccines against polio, tetanus, hepatitis A and any other vaccine prescribed by a diving physician.

O.C. 425-2010, s. 3.

**312.73. Medical certificate:** Any diver contaminated after diving in a contaminated environment must undergo a physical examination by a diving physician and obtain a medical certificate attesting that the diver is fit to dive again.

O.C. 425-2010, s. 3.

*§10.2. Exceptional preventive measures for diving in a contaminated environment*

O.C. 425-2010, s. 3.

**312.74. Exceptional preventive measures:** In addition to the general preventive measures referred to in sections 312.68 to 312.73, the exceptional preventive measures prescribed in sections 312.75 to 312.79 apply to any dive operation in a contaminated environment conducted in one of the following locations:



**LOGAN  
DRILLING  
GROUP**

- (1) at the discharge point or in the vicinity of the discharge point of effluents from an industrial plant, a water treatment or wastewater purification station;
- (2) in the vicinity of a chemical, biological or radioactive pollutant spill; or
- (3) in a nuclear plant.

Likewise, the measures apply if sediments containing contaminants are moved with equipment resulting in their suspension at the underwater workstation.

O.C. 425-2010, s. 3.

**312.75. Identification of contaminants:** The following information must be available in writing at the diving station before the dive operation and handed over to the dive team:

- (1) the identification and concentration level of contaminants present on the surface and at the underwater workstation;
- (2) the health and safety risks that the contaminants represent for the workers; and
- (3) the material safety data sheet provided for in section 62.3 of the Act respecting occupational health and safety (chapter S-2.1) if the contaminants are controlled products.

If the concentration level of contaminants may not be established before the dive, the preventive measures in a contaminated environment in sections 312.76 to 312.79 must nevertheless be complied with.

O.C. 425-2010, s. 3.

**312.76. Composition of the dive team:** The dive team must consist of at least 4 divers, including 1 diving supervisor, 1 diver, 1 standby diver and 1 diver's tender.

O.C. 425-2010, s. 3.

**312.77. Surface-supply diving:** Surface-supply diving is compulsory.

O.C. 425-2010, s. 3.



**LOGAN  
DRILLING  
GROUP**

**312.78. Diving equipment:** In addition to the equipment referred to in section 312.36, except paragraph 4, the following equipment must be worn:

- (1) a surface-supply diving helmet suitable for working in a contaminated environment; and
- (2) a diving suit, made of non-absorbing material, resistant to the contaminants present, to which the diving helmet is attached by a positive seal and lock device.

O.C. 425-2010, s. 3.

**312.79. Delimitation of the work areas:** The exclusion, decontamination and support areas must be delimited.

The limits of each area must be clearly defined and marked and the following instructions must be followed:

- (1) only workers wearing the required protective clothing and respiratory equipment may enter the exclusion area; and
- (2) when leaving the exclusion area, the divers and their equipment must exit through the decontamination area to be cleaned and decontaminated.

For the purposes of this section,

- (1) “exclusion area” means the area in the contaminated environment where the dive is performed;
- (2) “decontamination area” means the area used for decontaminating divers and their equipment; and
- (3) “support area” means the area outside the contaminated environment intended for the management, monitoring and technical and medical support operations of the underwater work.

O.C. 425-2010, s. 3.

#### *§10.3. Deep diving*

O.C. 425-2010, s. 3.

**312.80. Composition of the dive team:** Subject to section 312.84, when deep diving, the dive team must consist of at least 5 divers, including 1 diving supervisor, 1 diver, 2 diver's tenders and 1 standby diver.





**LOGAN  
DRILLING  
GROUP**

O.C. 425-2010, s. 3.

**312.81. Equipment:** The following equipment is compulsory for any deep dive to lower divers to their underwater workstation and return them to the surface:

- (1) a descent line, stage or any other suitable equipment allowing the diver to stop at the various levels in the decompression tables if the depth of the dive does not exceed 50 m;
- (2) a diving bell or submersible compression chamber, if the depth of the dive is between 50 m and 80 m; and
- (3) a submersible compression chamber, if the depth of the dive exceeds 80 m.

The submersible compression chamber referred to in subparagraphs 2 and 3 must comply with CSA Standard Z275.1-05, Hyperbaric Facilities, except Clauses 8 and 14.

The diver's umbilical exiting the diving bell or submersible compression chamber must not exceed the distance that can be covered by the diver's emergency self-contained breathing apparatus to re-enter the diving bell or the submersible compression chamber.

O.C. 425-2010, s. 3.

**312.82. Breathing mixture:** Compressed breathing air is prohibited if the depth of the dive exceeds 50 m.

O.C. 425-2010, s. 3.

**312.83. Communication system:** For any deep diving, a 2-way voice communication system must be available to the standby diver in the submersible compression chamber to allow communication with the diver underwater, outside the submersible compression chamber, as well as with the dive team members on the surface.

O.C. 425-2010, s. 3.

#### *§10.4. Diving in a submersible compression chamber*

O.C. 425-2010, s. 3.



**LOGAN  
DRILLING  
GROUP**

**312.84. Composition of the dive team:** For diving in a submersible compression chamber, the dive team must consist of at least 5 divers, including 1 diver and 1 standby diver in the chamber, 1 diving supervisor, 1 diver and 1 diver's tender on the surface and the required personnel on the surface to place the submersible compression chamber in the water and ensure adequate operation of the chamber and the chamber system.

The standby diver in the submersible compression chamber also acts as tender.

O.C. 425-2010, s. 3.

**312.85. Equipment and communication system:** The second and third paragraphs of section 312.81 and section 312.83 apply to any dive in a submersible compression chamber.

O.C. 425-2010, s. 3.

*§10.5. Other dives with special hazards*

O.C. 425-2010, s. 3.

**312.86. Diving near a submerged pipe intake or discharge or inside the pipe:** When diving near a submerged pipe intake or discharge or inside the pipe or another submerged installation, such as a wasteway or wastewater spillway, the water flow must be completely controlled and the following safety standards must be complied with:

- (1) the dive team must consist of at least 4 divers, including 1 diver, 1 standby diver and 2 diver's tenders, 1 of whom is the diving supervisor;
- (2) every pipe end must be located and the end where the dive is carried out must be clearly identified;
- (3) the power source or circuit of any machine or mechanism controlling the flow or that may represent a safety risk for the divers must be locked in accordance with section 185, except the reference that is made to section 186;
- (4) a diver may not enter a submerged pipe or other installation if its diameter is smaller than 1 m and turning inside is difficult; and

(5) a diver may not proceed further than 100 m inside a submerged pipe or other installation.

O.C. 425-2010, s. 3.

**312.87. Diving in an environment with an obstruction:** When diving in an environment with an obstruction, the dive team must consist of at least 6 divers, including 2 divers underwater to allow 1 diver to lead the other diver's umbilical to the location where an obstacle exerts a resistance when the umbilical is pulled on, 3 diver's tenders and 1 standby diver on the surface, 1 of whom is the diving supervisor.

O.C. 425-2010, s. 3.

**312.88. Diving in a restricted access area:** Divers must comply with the following safety standards when diving in a restricted access area:

(1) the dive team must consist of at least 4 divers, including 1 diver, 1 standby diver and 2 diver's tenders, 1 of whom is the diving supervisor;

(2) the diver's tender who is not acting as diving supervisor must always be able to pull directly on the umbilical to return the diver to the surface, if required;

(3) the water flow must be completely controlled; and

(4) a diver lifting device meeting the requirements provided for in section 312.40 must be available on the surface, except if a diver is within easy reach.

O.C. 425-2010, s. 3.

**312.89. Diving in an area of influence:** When diving in an area of influence, the diving team must consist of at least 4 divers, including 1 diver, 1 standby diver and 2 diver's tenders, 1 of whom is the diving supervisor.

The diving operation referred to in the first paragraph may be performed if the employer has agreed with the owner of a hydraulic structure or a hydroelectric plant that measures to control the flow of turbine discharge or discharged water must be planned and implemented before beginning the work and maintained until the work is completed in order to ensure stability in the current at the dive site. A copy of the agreement must be available at the diving station.

O.C. 425-2010, s. 3.



**LOGAN  
DRILLING  
GROUP**

**312.90. Inspection dive at a site likely to show a pressure differential:** Before performing work underwater at a site likely to show a pressure differential, the underwater work area and a width of at least 5 m in the surrounding of the area must be inspected in order to detect any source of suction and eliminate it, if applicable, if it constitutes a danger for the diver.

In addition, the following safety standards must be complied with:

- (1) the diver must be lowered underwater so as to progressively go near the area to inspect; and
- (2) the diver must be lowered underwater in one of the following manners:
  - (a) in a cage that complies with section 312.39 and hoisted according to section 312.40; or
  - (b) attached by a dorsal lifting ring or link to a cable, other than the lifeline, with a breaking strength greater than 20 kN and linked to a locking device.

O.C. 425-2010, s. 3.

**312.91. Ice diving:** The following safety standards must be complied with when ice diving:

- (1) the dive team must consist of at least 4 divers, including 1 diver, 1 standby diver and 2 diver's tenders, 1 of whom is the diving supervisor;
- (2) no diver may go under the ice more than 50 m from the point of entry into the water;
- (3) the bearing capacity of the ice must be evaluated;
- (4) the hole made in the ice must
  - (a) be triangular;
  - (b) allow the passage of 2 divers; and
  - (c) have a perimeter visibly defined; and
- (5) the piece of ice taken from the hole must be
  - (a) removed from the water to avoid forming an obstacle or binding the lifeline; and





**LOGAN  
DRILLING  
GROUP**

(b) put back into place after the dive.

O.C. 425-2010, s. 3.

## **DIVISION XXVII** **WELDING AND CUTTING**

**313. Prohibition:** Welding and cutting operations are prohibited close to combustible substances or in places containing flammable gases or vapours or combustible dusts presenting a fire or explosion hazard, unless special precautions are taken to prevent any risk of fire or explosion.

O.C. 885-2001, s. 313.

**314. Arc welding and cutting:** Any task involving arc welding or cutting, as well as the installation, handling and maintenance of equipment required for doing so, shall comply with Chapter 5 of the CAN/CSA W117.2-M94 Code for safety in welding, cutting and adjacent processes standard.

O.C. 885-2001, s. 314.

**315. Resistance welding:** Any task involving resistance welding, as well as the installation, handling and maintenance of equipment required for doing so, shall comply with Chapter 6 of the CAN/CSA W117.2-M94 Code for safety in welding, cutting and adjacent processes standard.

O.C. 885-2001, s. 315.

**316. Gas welding, brazing and cutting:** Any task involving gas welding, brazing or cutting, as well as the installation, handling and maintenance of equipment required for doing so, shall comply with Chapter 8 of the CAN/CSA W117.2-M94 Code for safety in welding, cutting and adjacent processes standard.

O.C. 885-2001, s. 316.

**317. Protective screens:** Permanent or movable protective screens shall be installed in places where welding or cutting operations are ordinarily performed and where people, other than welders, work or circulate.

O.C. 885-2001, s. 317.



**LOGAN  
DRILLING  
GROUP**

**318. Work performed on a recipient:** Before performing welding, cutting or heating operations on a recipient, such as a reservoir, it shall be established that the recipient did not previously contain materials that are combustible or likely to discharge toxic or inflammable vapours when heated.

If the recipient has already contained such materials, no work involving welding, cutting or heating may be undertaken on the recipient until it has been properly cleaned in order to eliminate any material that is combustible or likely to discharge toxic or inflammable vapours when heated.

If after having cleaned the recipient and made a reading of the concentration of inflammable vapours and gases, there remains a risk of explosion, the work involving welding, cutting or heating may only be performed if one of the following conditions is met:

- (1) the recipient is filled with water to within a few centimetres of the point of welding, cutting or heating and the remaining space is ventilated to ensure the evacuation of hot air;
- (2) the recipient has been purged with inert gases.

Conduits and connections shall be disconnected, then closed to eliminate the spilling of any material that is combustible or likely to discharge toxic or inflammable vapours when heated.

O.C. 885-2001, s. 318.

**319. Antiback-up arresters:** The oxygen lead hose and the combustible gas lead hose to a torch must be equipped with at least one antiback-up gas arrester and one antiback-up flame arrester. The arresters must be installed in compliance with the manufacturer's instructions.

O.C. 885-2001, s. 319; O.C. 1120-2006, s. 9.

**320. Ground:** A portable welding machine powered by an internal combustion engine shall be grounded if it is equipped with auxiliary 120 V or 240 V plugs and if these plugs are used at the same time as the welding process.

However, such grounding is not necessary if the tools, appliances or accessories connected to the auxiliary plugs are equipped with double insulation or a third conductor ensuring the continuity of the grounding, or if the branch circuits are protected by Class A ground fault circuit interrupters.



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 320.

**321. Prohibited current return circuits:** The use of electric conductors or conduits containing gases or inflammable liquids as a welding or cutting current return circuit is prohibited.

O.C. 885-2001, s. 321.

## **DIVISION XXVIII OTHER HIGH RISK TASKS**

**322. Work performed in an isolated environment:** When a worker performs a task alone in an isolated environment where it is impossible for him to request assistance, an efficient means of surveillance, whether continuous or intermittent, shall be installed.

O.C. 885-2001, s. 322.

**323. Tasks involving maintenance or repairs:** In the case of tasks involving maintenance or repairs, the following safety measures shall be taken:

- (1) isolate the danger zone of a machine in operation or protect workers who are nearby;
- (2) mark off the areas where such work is being performed in order to protect anyone likely to be exposed to danger.

O.C. 885-2001, s. 323.

**324. Work presenting a falling hazard:** Maintenance, repair or de-jamming work that presents a falling hazard shall be performed with the assistance of scaffolds, work platforms, bridges, portable ladders, safety harnesses or other appropriate equipment.

O.C. 885-2001, s. 324.

**325. Compressed air cleaning:** It is prohibited to clean a person with compressed air.

O.C. 885-2001, s. 325.



**LOGAN  
DRILLING  
GROUP**

**326. Air pressure limit:** The pressure of compressed air used for the cleaning of a machine or piece of equipment shall be less than 200 kPa, unless the cleaning is carried out in an enclosure specially designed for abrasive air blasting and equipped with a vacuum system.

This section does not apply to automated cleaning systems.

O.C. 885-2001, s. 326.

**327. Piping for compressed air:** Piping in which compressed air flows shall be protected from all impacts and be clearly identified as to the nature of its contents.

O.C. 885-2001, s. 327.

**328. Attachments:** Flexible hoses in which compressed air flows shall be equipped with one of the following attachments in the event of section-by-section assembly:

- (1) collars located on either side of the connection and held together by an attachment;
- (2) an automatic locking device;
- (3) a coupling fitted with a clamping device.

O.C. 885-2001, s. 328.

**329. Working in compressed air:** Any work carried out in compressed air shall be done in compliance with Division IX of the Safety Code for the construction industry (chapter S-2.1, r. 4), with the exception of section 9.7.1.

O.C. 885-2001, s. 329.

**330. Using a sealing pistol:** Any work carried out with a sealing pistol shall be done in compliance with Division VII of the Safety Code for the construction industry (chapter S-2.1, r. 4).

O.C. 885-2001, s. 330.



**331. Work performed near an electric power line:** Any work carried out near an electric power line shall be done in compliance with Division V of the Safety Code for the construction industry (chapter S-2.1, r. 4).

O.C. 885-2001, s. 331.

**332. Deforestation work:** Deforestation work not involving the recovery of wood, which is mainly performed prior to the construction of an electric power line, shall be performed in compliance with the Regulation respecting occupational health and safety in forest development work (chapter S-2.1, r. 12.1).

O.C. 885-2001, s. 332; O.C. 499-2013, s. 53.

## **DIVISION XXIX**

### **VEHICLE MAINTENANCE**

**333. Automotive lifts and elevating platforms:** In buildings built on or after 2 August 2001, automobile vehicle or self-propelled vehicle maintenance and repair garages shall be equipped with automotive lifts and elevating platforms instead of ground level pits, unless such pits are needed for technical reasons.

O.C. 885-2001, s. 333.

**334. Pits:** Garage pits in existence on the date that this Regulation comes into force and pits that are needed for technical reasons in new garages shall meet one of the following standards:

(1) the floor of the pit shall be higher than the level of the outside ground, with an opening towards the outside at the lowest level of the pit floor, allowing for natural ventilation;

(2) in the event that the pit is arranged differently, it shall be equipped with a separate mechanical ventilation system capable of providing an air flow equal to at least 12 times the volume of the pit per hour. As such, the floor shall have a 1 to 120 incline and have an opening at the lowest level of the pit to allow for the evacuation of air.

O.C. 885-2001, s. 334.



**LOGAN  
DRILLING  
GROUP**

**335. Access to pits:** Access to garage pits is restricted only to the people who work in them.

O.C. 885-2001, s. 335.

**336. Safety posters:** Posters requiring that vehicle motors be turned off and prohibiting smoking during fueling shall be installed prominently in sight near gasoline pumps.

O.C. 885-2001, s. 336.

**337. Wheels under pressure:** This section applies to vehicles mounted on wheels under pressure whose weight, to which the rated load is added, is 4,500 kg or more. A wheel is composed of a one-piece or multi-piece rim assembled with a compatible tire.

Work on a wheel under pressure, including handling and inspection, must be carried out according to trade practice.

The inflating of tires must be done according to trade practice, in particular by using a holding device that prevents the projection of wheel components, such as a cage, support, chain, bar assembly or, in the absence of such device, any other means that ensures the safety of workers.

O.C. 885-2001, s. 337; O.C. 252-2014, s. 1.

## **DIVISION XXX**

### **MEANS AND EQUIPMENT FOR INDIVIDUAL AND GROUP PROTECTION**

**338. Employer's obligations:** The employer shall provide the worker free-of-charge with the individual or collective means and equipment provided under this Division, as well as subparagraph c of subparagraph 2 of the first paragraph of section 300 and section 312 and ensure that the worker, when performing his work, uses such means and equipment.

The employer shall also ensure that the workers have received requisite information on the use of such protective means and equipment.

O.C. 885-2001, s. 338.

**339. Worker's obligations:** The worker shall wear or use, as the case may be, the individual or collective protective means and equipment provided

in this Division, as well as in subparagraph c of subparagraph 2 of the first paragraph of section 300 and section 312.

O.C. 885-2001, s. 339.

**340. Safety precautions:** In areas where there is a danger of contact with moving parts, workers shall comply with the following standards:

- (1) their clothing shall fit well and have no loose flaps;
- (2) necklaces, bracelets or rings shall not be worn, with the exception of medical alert bracelets;
- (3) anyone with long hair shall tuck it under a bonnet, a hat or a hairnet.

O.C. 885-2001, s. 340.

**341. Safety hat:** Subject to the second and third paragraphs, the wearing of a safety hat complying with CAN/CSA Standard Z94.1-05, Industrial Protective Headgear - Performance, Selection, Care, and Use, is mandatory for all workers exposed to head injuries.

As of 3 April 2014, any new safety hat must comply with the most recent version of CAN/CSA Standard Z-94.1 Industrial Protective Headgear - Performance, Selection, Care, and Use.

For activities not subject to the standard prescribed in the first or second paragraph, a means of protection appropriate to the activity must be used.

O.C. 885-2001, s. 341; O.C. 252-2014, s. 2.

**342.** *(Replaced).*

O.C. 885-2001, s. 342; O.C. 252-2014, s. 2.

**343. Eye and face protectors:** The wearing of an eye protector or a face protector acquired on or after 5 May 2011 and complying with the CAN/CSA Z94.3-07 Eye and Face Protectors standard is mandatory for any worker who is exposed to a danger that may cause injury to his eyes or face by:

- (1) particles or objects;
- (2) dangerous substances or molten metals;



**LOGAN  
DRILLING  
GROUP**

- (3) intense radiation.

However, protectors in good condition and complying with the CAN/CSA Z94.3-92, CAN/CSA Z94.3-99 or CAN/CSA Z94.3-02 standard are considered to offer adequate protection.

O.C. 885-2001, s. 343; O.C. 392-2011, s. 4.

**344. Protective footwear:** The wearing of protective shoes in compliance with CAN/CSA Standard Z195-02 Protective Footwear is mandatory for all workers exposed to foot injuries incurred in the following cases:

- (1) by perforation;
- (2) by electric shock;
- (3) by an accumulation of electrostatic charges;
- (4) by the falling of heavy, burning or sharp objects;
- (5) by contact with molten metal;
- (6) by contact with dangerous substances in a liquid state and at intense temperatures;
- (7) by contact with dangerous substances that are corrosive;
- (8) during other dangerous tasks.

O.C. 885-2001, s. 344; O.C. 1120-2006, s. 10.

**345. Protectors for other parts of the body:** The wearing of protective equipment suited to the type of work performed such as a hood, an apron, leggings, protective sleeves and gloves is mandatory for all workers exposed to burning objects or objects with sharp edges or dangerous projections, splashes of molten metals or in contact with dangerous or infectious substances.

O.C. 885-2001, s. 345.

**346. Devices for protection from falls:** The wearing of a safety harness is mandatory for all workers exposed to falls of over 3 m from their work stations, except if a worker is protected by some other device that ensures equivalent safety or by a safety net, or when he is only using some means of access or egress.





**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 346.

**347. Full Body Harnesses:** A safety harness shall comply with the CAN/CSA Z259.10-M90 standard Full Body Harnesses and be used with one of the following systems:

- (1) a shock absorber attached to a lifeline preventing a fall in excess of 1.2 m;
- (2) a harness retractor that includes a shock absorber or that is attached thereto.

The shock absorber shall comply with the CAN/CSA Z259.11-M92 standard Shock Absorbers for Personal Fall Arrest Systems.

The lifeline shall comply with the CAN/CSA Z259.1-95 standard Safety Belts and Lanyards.

The harness retractor shall comply with the CAN/CSA Z259.2-M1979 standard Fall-arresting Devices, Personal Lowering Devices and Life Lines.

O.C. 885-2001, s. 347.

**348. Anchorage point:** The anchorage point for a safety harness lifeline shall be attached in one of the following ways:

- (1) be anchored to some point with a tensile strength at break of at least 18 kN;
- (2) be attached to a sliding sleeve in compliance with the CAN/CSA Z259.2-M1979 standard Fall-arresting Devices, Personal Lowering Devices and Life Lines;
- (3) be attached to a horizontal lifeline and anchorage point system, designed by an engineer, as demonstrated by a plan or certification available on the premises where such work is performed.

O.C. 885-2001, s. 348.

**349. Vertical lifeline:** A lifeline shall:

- (1) comply with the CAN/CSA Z259.2-M1979 standard Fall-arresting Devices, Personal Lowering Devices and Life Lines;

- (2) be used by one person only;
- (3) be less than 90 m in length;
- (4) be attached to an individual anchorage point with a tensile strength at break of at least 18 kN;
- (5) be protected so as not to come into contact with any sharp edges;
- (6) be free of knots, splices, except the terminations, and defects.

For the purposes of subparagraph 6 of the first paragraph, “splices” means rope strands that are interwoven to make a loop at the termination of the rope.

O.C. 885-2001, s. 349; O.C. 510-2008, s. 4.

**350. Safety belt:** Where a worker is equipped with a safety belt, it can be used only to limit the movement of a worker or to keep him in his working position.

Such a belt shall comply with the CAN/CSA Z259.1-95 standard covering Safety Belts and Lanyards.

A safety belt may not be used as individual protective equipment to stop the fall of a worker.

O.C. 885-2001, s. 350.

**351. Two-point suspension scaffold:** When a worker uses a two-point suspension scaffold with four lifting cables, the lifeline anchorage point shall be attached in one of the following ways:

- (1) by attaching it to a platform anchor with a tensile strength at break of at least 18 kN;
- (2) by attaching it to a wire cable of at least 8 mm in diameter, attached at the ends and in the centre to the platform.

O.C. 885-2001, s. 351.

**352. Safety snap and safety lock:** When the lifeline ends with a locking safety snap, the snap shall be equipped with a self-locking safety catch.

O.C. 885-2001, s. 352.



**LOGAN  
DRILLING  
GROUP**

**353. Safety net:** A safety net shall be used in the following circumstances:

- (1) when the wearing of a safety harness can be harmful or be a source of danger to the worker;
- (2) when the protection offered by the safety harness and personal floatation device is not sufficient because of the nature of the work.

O.C. 885-2001, s. 353.

**354. Using a safety net:** A safety net shall:

- (1) be placed in such a way as to prevent a person from falling more than 6 m in free fall;
- (2) have sufficient surface spread to intercept a falling person;
- (3) be capable of supporting a mass of 115 kg falling from a maximum height of 6 m and with a safety factor of 3;
- (4) be sufficiently flexible to break the fall and retain the person;
- (5) be resistant to atmospheric agents;
- (6) be free of all foreign matter;
- (7) have a mesh measuring about 150 mm x 150 mm;
- (8) be installed such that upon use the person falling into it will not strike any object above or below the net or be struck by any object whatsoever.

O.C. 885-2001, s. 354.

**355. Floatation device:** The wearing of a floatation device is mandatory for all workers who work over water, if the following conditions are met:

- (1) no other safety measure may provide efficient protection;
- (2) the depth of the water is adequate to allow for efficient usage.

O.C. 885-2001, s. 355.

**356. Characteristics of a floatation device:** A personal floatation device shall be adapted to the workplace situation and shall bear a stamp or label attesting to Transport Canada approval.

O.C. 885-2001, s. 356.

**357. Safety equipment:** In addition to personal floatation devices, the following safety equipment shall be put at the disposal of workers working over water:

(1) a motorized boat in good working order, moored near the work site, and fitted with:

(a) a life buoy connected to a Manila hemp cord with a diameter of 10 mm and at least 15 m in length;

(b) a life drag;

(c) personal floatation devices in adequate number for the number of rescuers;

(d) paddles;

(2) if there is a current, a cable running across the stretch of water with floaters attached thereto capable of supporting a person in the water;

(3) an alarm system for triggering rescue operations.

A specific person shall be appointed for directing rescue operations.

O.C. 885-2001, s. 357.

## **DIVISION XXXI TRANSPORTING WORKERS**

**358. Exception:** This Division does not apply to automobiles used in general as common carriers.

O.C. 885-2001, s. 358.

**359. Application of the Highway Safety Code:** Any automobile used for transporting workers shall be arranged and used in compliance with the Highway Safety Code (chapter C-24.2) and its regulations, except insofar as they are modified under this Division.





**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 359.

**360. Prohibited transport:** The transport of workers in trailers and semi-trailers is prohibited.

O.C. 885-2001, s. 360.

**361. Other safety standards:** The vehicle used for transporting workers shall:

- (1) be driven by a person who has an appropriate licence issued in compliance with the Highway Safety Code (chapter C-24.2);
- (2) be examined and maintained so as to protect the health and ensure the safety and physical well-being of workers.

O.C. 885-2001, s. 361.

**362. Safety equipment:** Any vehicle used primarily or regularly for transporting workers shall be equipped with a first aid kit in compliance with the First-aid Minimum Standards Regulation (chapter A-3.001, r. 10).

In addition, if the vehicle is a bus or a minibus, it shall be equipped with:

- (1) a dry chemical fire extinguisher, of a type not less than 2A:10B:C, approved by Underwriters' Laboratories of Canada;
- (2) at least 3 pyrotechnic flares, 3 flashlights or 3 reflectors. In the event of a breakdown on the road or less than 3 m from the roadway, 2 of these devices shall be placed in front of or behind the vehicle on the traffic side, one at a distance of 3 and the other at 30 from the vehicle. The third device shall be placed based on the specific danger, such as the proximity of a sharp turn, fog, smog or haze conditions, or the presence of a person working on the vehicle.

O.C. 885-2001, s. 362.

**363. Explosives and dangerous substances:** A vehicle used for transporting workers shall not carry:

- (1) explosives, unless such explosives are transported in compliance with the Safety Code for the construction industry (chapter S-2.1, r. 4);



**LOGAN  
DRILLING  
GROUP**

(2) dangerous pesticides and flammable and combustible substances, unless the substances are carried in containers designed for this purpose and outside the compartments occupied by the driver or passengers.

O.C. 885-2001, s. 363.

**364. Measures for protecting passengers:** Simultaneous transporting of both workers and materials in the same compartment is subject to the following conditions:

(1) in the case of small material, as long as a stowing device prevents any movement of the material likely to injure passengers;

(2) in the case of bulk material, if a strong device prevents the material from invading the passenger space.

O.C. 885-2001, s. 364.

## **DIVISION XXXII**

### **FINAL PROVISIONS**

**365. Repealed regulation:** The Safety Code for the wood-working industry (R.R.Q., 1981, c. S-2.1, r. 5) is repealed.

O.C. 885-2001, s. 365.

**366.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 366.

**367.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 367.

**368.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 368.

**369.** *Amendment integrated into c. S-2.1, r. 6.*



**LOGAN  
DRILLING  
GROUP**

O.C. 885-2001, s. 369.

**370.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 370.

**371.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 371.

**372.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 372.

**373.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 373.

**374.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 374.

**375.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 375.

**376.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 376.

**377.** *Amendment integrated into c. S-2.1, r. 6.*

O.C. 885-2001, s. 377.

**378.** *Amendment integrated into c. S-2.1, r. 9.*

O.C. 885-2001, s. 378.



**LOGAN  
DRILLING  
GROUP**

**379.** *Amendment integrated into c. S-2.1, r. 15.*

O.C. 885-2001, s. 379.

**380.** *Amendment integrated into c. S-2.1, r. 15.*

O.C. 885-2001, s. 380.

**381.** *Amendment integrated into c. S-2.1, r. 19.1.*

O.C. 885-2001, s. 381.

**382.** *Amendment integrated into c. S-2.1, r. 19.1.*

O.C. 885-2001, s. 382.

**383.** *Amendment integrated into c. S-2.1, r. 19.1.*

O.C. 885-2001, s. 383.

**384.** *Amendment integrated into c. S-2.1, r. 20.*

O.C. 885-2001, s. 384.

**385.** *Amendment integrated into c. S-2.1, r. 20.*

O.C. 885-2001, s. 385.

**386.** *Amendment integrated into c. S-2.1, r. 20.*

O.C. 885-2001, s. 386.

**387.** *Amendment integrated into c. S-2.1, r. 20.*

O.C. 885-2001, s. 387.





**LOGAN  
DRILLING  
GROUP**

**388.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 388.

**389.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 389.

**390.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 390.

**391.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 391.

**392.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 392.

**393.** *Amendment integrated into c. S-2.1, r. 22.*

O.C. 885-2001, s. 393.

**394.** *(Omitted).*

O.C. 885-2001, s. 394.

## **SCHEDULE I**

(ss. 41, 42, 43, 66, 108 and 302)

PERMISSIBLE EXPOSURE VALUES FOR GASES, DUSTS, FUMES, VAPOURS OR  
MISTS IN THE WORK ENVIRONMENT

DEFINITIONS AND NOTES

This Schedule must be read in accordance with the following notations and definitions:

(1) **CARCINOGENS:** The designations under “carcinogen” in the Designation and remarks column refer to the following:

C1: carcinogenic effect detected in humans

C2: carcinogenic effect suspected in humans

C3: carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.

(2) **CAS:** Number given by the Chemical Abstracts Service, a division of the American Chemical Society, for the identification of a substance (see part 4).

(3) **C: CEILING:** The designation “C” in the STEV/Ceiling column refers to a concentration never be exceeded during any length of time whatsoever.

(4) **EM:** A substance to which exposure must be reduced to a minimum in accordance with section 42.

(5) **EXCURSION LIMITS:** These limits apply to substances which do not have a short-term exposure value. Provided the time-weighted average exposure value is not exceeded, excursions in exposure levels may exceed 3 times that value for a cumulative period not exceeding a total of 30 minutes during a workday. Notwithstanding the foregoing, none of those excursions in exposure levels may exceed 5 times the time-weighted average exposure value during any length of time whatsoever.

(6) **mg/m<sup>3</sup>:** milligram per cubic meter (milligram of substance per cubic meter of air).

(7) **Pc: SKIN (percutaneous):** The designation “Pc” in the Designation and remarks column refers to the potentially significant contribution to the overall exposure by the cutaneous route. Exposure is by contact with vapours or, of probable greater significance, by direct skin contact with the substance. The cutaneous route includes mucous membranes and the eyes.

(8) **ppm:** part per million (parts of gas or vapour per million parts of airborne contaminants per volume measured at 25 °C and 101.3 kPa).

(9) **Rd:** Respirable dust.

(10) **RESPIRABLE FIBRES (other than respirable asbestos fibres):** Objects, other than respirable asbestos fibres, longer than 5 µm, having a diameter of less than 3 µm and a ratio of length to diameter of more than 3 :1.

(11) **RP:** A substance which may not be recirculated in accordance with section 108.



**LOGAN  
DRILLING  
GROUP**

(12) S: SENSITIZER: The designation "S" in the Designation and remarks column refers to a repeated exposure to a substance causing a sensitization, e.g. an organism reaction, in the form of an allergic response (immunologic) of the respiratory tree, the mucous, the conjunctivas or the skin.

(13) SIMPLE ASPHYXIANT: A physiologically inert gas which acts primarily by displacing airborne oxygen and that can cause a decrease in the percentage in volume of airborne oxygen below the 19.5% provided for in section 40 and required to maintain blood oxygen saturation.

(14) STEV: SHORT-TERM EXPOSURE VALUE: The 15-minute time-weighted average concentration for exposure to a chemical substance (in the form of gases, dusts, fumes, vapours or mists), present in the air in a worker's respiratory zone which should not be exceeded at any time during a workday, even if the time-weighted average exposure value is not exceeded.

The average exposure for a 15-minute consecutive period may be include between the TWAEV and the STEV, insofar as such exposures are not repeated more than 4 times a day and have intervals between them of periods of at least 60 minutes.

(15) Td: Total dust.

(16) TWAEV: TIME-WEIGHTED AVERAGE EXPOSURE VALUE: The time-weighted average concentration for an 8-hour workday and a 40-hour workweek of a chemical substance (in the form of gases, dusts, fumes, vapours or mists) present in the air in a worker's respiratory zone.

For any work period equal to or longer than 4 hours but less than 8 hours or a period in excess of 8 hours but less than or equal to 16 hours, an adjusted average exposure value (AAEV) must be established in accordance with the Guide to the adjustment of permissible exposure values for unusual work schedules, published by the Institut de recherche Robert-Sauvé en santé et en sécurité du travail. Under no circumstance may the AAEV be higher than the TWAEV.

#### EXPLANATION OF NOTES:

Note 1: The standard corresponds to dust containing no asbestos and the percentage in crystalline silica is less than 1%.

Note 2a: Permissible asbestos exposure values in number of respirable fibres per cm<sup>3</sup>.

Note 2b: Permissible recirculation concentration of asbestos respirable dust: 0.1 mg/m<sup>3</sup>.

Note 3: Where the use of these products is permitted.



Note 4: Permissible exposure values in number of respirable fibres per cm<sup>3</sup>.

**Part 1**

**PERMISSIBLE EXPOSURE VALUES FOR AIRBORNE CONTAMINANTS**



Substance	[#CAS]	ppm	mg/m3	ppm	mg/m3	remarks
Abate	See	Temephos				
Acetaldehyde	[75-07-0]				C25 C45	C3,RP
Acetic acid	[64-19-7]	10	25	15	37	
Acetic anhydride	[108-24-7]		5	21		
Acetone	[67-64-1]	500	1190	1000	2380	
Acetone cyanohydrin (as CN)				[75-86-5]		
	C4,7	C5	Pc,RP			
Acetonitrile	[75-05-8]	40	67	60	101	
Acetophenone	[98-86-2]	10	49			
Acetylene	[74-86-2]		Simple asphyxiant			
Acetylene dichloride			See 1,2-Dichloroethylene			
Acetylene tetrabromide			See 1,1,2,2-Tetrabromoethane			
Acetylsalicylic acid (Aspirin)	[50-78-2]				5	
Acrolein	[107-02-8]	0.1	0.23	0.3	0.69	
Acrylamide	[79-06-1]		0.03			
	Pc,C2,EM					
Acrylic acid	[79-10-7]	2	5.9			Pc
Acrylonitrile	[107-13-1]	2	4.3			
	Pc,C2,RP,EM					
Actinolite	See	Asbestos				
Adipic acid	[124-04-9]		5			
Adiponitrile	[111-69-3]	2	8,8			Pc
Aldrin	[309-00-2]	0.25				Pc
Allyl alcohol	[107-18-6]	2	4.8	4	9.5	
	Pc					
Allyl chloride	See	3-Chloropropene				
Allyl glycidyl ether (AGE)			[106-92-3]	5	23	
	10	47				
Allyl propyl disulfide	[2179-59-1]	2	12	3		
	18					
Aluminum (as Al)	[7429-90-5]					
Alkyls	2					
Metal	10					
Pyrotechnical powders				5		
Soluble salts			2			
Welding fumes			5			





**LOGAN  
DRILLING  
GROUP**

Aluminum oxide (as Al)	[1344-28-1]	10							
									Td, note 1
4-Aminodiphenyl	[92-67-1]								Without applicable
permissible									Pc, C1, RP, EM
									exposure value
2-Aminoethanol	[141-43-5]	3	7.5	6					15
2-Aminopyridine	[504-29-0]	0.5	1.9						
3-Amino-1,2,4-triazole									See Amitrole
Amitrole	[61-82-5]	0.2							C3, RP
Ammonia	[7664-41-7]	25	17	35					24
Ammonium chloride fume	[12125-02-9]								10
		20							
Ammonium perfluorooctanoate	[3825-26-1]	0.1							Pc
Ammonium sulfamate	[7773-06-0]								10
Amosite									See Asbestos
Aniline	[62-53-3]	2	7, 6						Pc
o-Anisidine	[90-04-0]	0.1	0.5						Pc, C3
p-Anisidine	[104-94-9]	0.1	0.5						Pc
Anthophyllite									See Asbestos
Antimony [7440-36-0],									0.5
metal and compounds (as Sb)									
Antimony trioxide (as Sb)	[1309-64-4]	0.5							C3
Antimony trioxide, production									Without applicable
permissible									C2, RP, EM
(as Sb)									exposure value
ANTU (a-Naphthylthiourea)	[86-88-4]								0.3
Argon [7440-37-1]									Simple asphyxiant
Arsenic, elemental [7440-38-2],									0.1
and inorganic compounds									
(except Arsine), (as As)									
Arsenic trioxide, production	[1327-53-3]								
Without applicable permissible									
									C2, RP, EM
									exposure value
Arsine [7784-42-1]		0.05	0.16						
Asbestos (note 2a) (note 2b)									
Actinolite [12172-67-7]									1 fibre/cm3
fibre/cm3									5
									C1, EM
Amosite (note 3) [12172-73-5]									0.2
fibre/cm3									1 fibre/cm3
									C1, EM
Anthophyllite [17068-78-9]									1 fibre/cm3
									5 fibres/cm3
									C1, EM
Chrysotile [12001-29-5]									1 fibre/cm3
fibre/cm3									5
									C1, EM



**LOGAN  
DRILLING  
GROUP**

Crocidolite (note 3)	[12001-28-4]				0.2
fibre/cm3	1 fibre/cm3	C1,EM			
Tremolite	[14567-73-8]	1 fibre/cm3			5
fibres/cm3	C1,EM				
Asphalt (petroleum) fumes	[8052-42-4]				5
Aspirin	See Acetylsalicylic acid				
Atrazine	[1912-24-9]	5			
Attapulgit	See Fibres-Natural Mineral Fibres				
Azinphos-methyl	[86-50-0]				0.2
Pc					
Barium [7440-39-3], soluble compounds (as Ba)					0.5
Barium sulfate	[7727-43-7]				10
Td, note 1					
	5				Rd, note 1
Benomyl	[17804-35-2]	0.84	10		
Benz(a)anthracene	[56-55-3]				Without applicable
permissible	C2,EM				
exposure value					
Benzene	[71-43-2]	1	3	5	15.5
C1,RP,EM					
Benzidine (production)	[92-87-5]				Without applicable
permissible					Pc,C1,RP,EM
exposure value					
Benzo(a)pyrene	[50-32-8]				0.005
C2,RP,EM					
Benzo(b)fluoranthene	[205-99-2]				Without applicable
permissible					C2,EM
exposure value					
p-Benzoquinone	[106-51-4]	0.1		0.44	
Benzoyl peroxide	[94-36-0]			5	
Benzyl chloride	[100-44-7]	1		5.2	
Beryllium [7440-41-7],					
0.00015					C1,RP,EM,S
metal and compounds (as Be)					
Biphenyl	[92-52-4]	0.2	1.3		
Bismuth telluride (as Bi <sub>2</sub> Te <sub>3</sub> )					
Se-doped	5				
Undoped	[1304-82-1]		10		
Borax	See Sodium tetraborate, decahydrate				
Boron oxide	[1303-86-2]		10		
Boron tribromide	[10294-33-4]				C1 C10
RP					
Boron trifluoride	[7637-07-2]				C1 C2,8
RP					
Bromacil	[314-40-9]		10		
Bromine	[7726-95-6]	0.1	0.66	0.2	1,3



**LOGAN  
DRILLING  
GROUP**

Bromine pentafluoride	[7789-30-2]	0.1	0.72		
Bromochloromethane	See Chlorobromomethane				
2-Bromo-2-chloro-	See Halothane				
1,1,1-trifluoroethane					
Bromoethane	See Ethyl bromide				
Bromoethylene	See Vinyl bromide				
Bromoform	[75-25-2]	0.5	5.2		Pc
Bromomethane	See Methyl bromide				
Bromotrifluoromethane	[75-63-8]	1000	6090		
1,3-Butadiene	[106-99-0]	2	4.4		
	C2, EM				
Butane	[106-97-8]	800	1900		
Butanethiol	See Butyl mercaptan				
2-Butanone	See Methyl ethyl ketone (MEK)				
2-Butoxyethanol	[111-76-2]	20	97		
n-Butyl acetate	[123-86-4]	150	713	200	950
sec-Butyl acetate	[105-46-4]	200	950		
tert-Butyl acetate	[540-88-5]	200	950		
n-Butyl acrylate	[141-32-2]	2	10		
n-Butyl alcohol	[71-36-3]			C50	C152
	Pc, RP				
sec-Butyl alcohol	[78-92-2]	100	303		
tert-Butyl alcohol	[75-65-0]	100	303		
Butyl cellosolve®	See 2-Butoxyethanol				
tert-Butyl chromate (as CrO3)	[1189-85-1]	C0.1	Pc, RP		
n-Butyl glycidyl ether (BGE)	[2426-08-6]	25	133		
n-Butyl lactate	[138-22-7]	5	30		
Butyl mercaptan	[109-79-5]	0.5	1.8		
n-Butylamine	[109-73-9]		C5	C15	Pc, RP
o-sec-Butylphenol	[89-72-5]	5	31		
	Pc				
p-tert-Butyltoluene	[98-51-1]	1	6.1		
Cadmium	[7440-43-9]	0.025			C2.EM
elemental and compounds	(as Cd)				
Calcium carbonate	[471-34-1]		10		
	Td				
Calcium carbonate	[1317-65-3]		10		
	Td, note 1				
Calcium chromate (as Cr)	[13765-19-0]	0.001	C2, RP, EM		
Calcium cyanamide	[156-62-7]		0.5		
Calcium hydroxide	[1305-62-0]		5		
Calcium oxide	[1305-78-8]		2		
Calcium silicate (synthetic)	[1344-95-2]	10	Td, note 1		



**LOGAN  
DRILLING  
GROUP**

Calcium sulfate	[7778-18-9]		10			
Td, note 1						
		5		Rd, note 1		
Camphor (synthetic)	[76-22-2]	2	12	3	19	
Caprolactam	[105-60-2]					
Dust		1	3			
Vapour		5	23	10	46	
Captafol	[2425-06-1]		0.1			Pc
Captan	[133-06-2]	5				
Carbaryl	[63-25-2]		5			
Carbofuran	[1563-66-2]		0.1			
Carbon black	[1333-86-4]		3.5			
Carbon dioxide	[124-38-9]	5000	9000	30000	54000	
Carbon disulfide	[75-15-0]	4	12	12	36	
Pc						
Carbon monoxide	[630-08-0]	35	40	200	230	
Carbon tetrabromide	[558-13-4]	0.1	1.4	0.3	4.1	
Carbon tetrachloride	[56-23-5]	5	31	10		
63	Pc, C2, EM					
Carbon, fibres	See Fibres-Organic Synthetic Fibres					
Carbonyl chloride	See Phosgene					
Carbonyl fluoride	[353-50-4]	2	5.4	5	13	
Catechol	[120-80-9]	5	23			Pc
Cellosolve® acetate	See 2-Ethoxyethyl acetate					
Cellulose (paper fibres)	[9004-34-6]	10				Td, note 1
Ceramic (fibres)	See Fibres-Artificial Vitreous Mineral Fibres					
Cesium hydroxide	[21351-79-1]		2			
Chlordane	[57-74-9]		0.5			Pc
Chlorinated camphene	[8001-35-2]			0.5		
1	Pc, C3					
Chlorinated diphenyl oxide	[55720-99-5]				0.5	
Chlorine	[7782-50-5]	0.5	1.5	1	2.9	
Chlorine dioxide	[10049-04-4]	0.1	0.28	0.3	0.83	
Chlorine trifluoride	[7790-91-2]					C0.1
C0.38	RP					
2-Chloro-6-(trichloromethyl) pyridine	See Nitrapyrin					
Chloroacetaldehyde	[107-20-0]			C1	C3, 2	
RP						
Chloroacetone	[78-95-5]			C1	C3, 8	
Pc, RP						
α-Chloroacetophenone	[532-27-4]	0.05	0.32			
Chloroacetyl chloride	[79-04-9]	0.05	0.23	0.15		
0.69	Pc					
Chlorobenzene	[108-90-7]	50	230			





**LOGAN  
DRILLING  
GROUP**

o-Chlorobenzylidene malononitrile	[2698-41-1]				
		C0.05	C0.39	Pc,RP	
Chlorobromomethane	[74-97-5]	200	1060		
2-Chloro-1,3-butadiene		See	$\beta$ -Chloroprene		
Chlorodifluoromethane	[75-45-6]	1000	3540		
Chlorodiphenyl (42% chlorine)	[53469-21-9]	1		Pc,C2,EM	
Chlorodiphenyl (54% chlorine)	[11097-69-1]	0.5		Pc,C2,EM	
1-Chloro-2,3-epoxypropane				See Epichlorohydrin	
Chloroethane				See Ethyl chloride	
2-Chloroethanol				See Ethylene chlorohydrin	
bis (Chloroethyl) ether				See Dichloroethyl ether	
Chloroethylene				See Vinyl chloride (monomer)	
Chloroform	[67-66-3]	5	24.4		
				C2,RP,EM	
Chloromethane				See Methyl chloride	
Chloromethyl methyl ether	[107-30-2]				Without
applicable permissible				C1,RP,EM	
				exposure value	
bis (Chloromethyl) ether	[542-88-1]	0.001	0.0047		
				C1,RP,EM	
p-Chloronitrobenzene				See p-Nitrochlorobenzene	
1-Chloro-1-nitropropane	[600-25-9]	2	10		
Chloropentafluoroethane	[76-15-3]	1000	6320		
Chloropicrin	[76-06-2]	0.1	0.67		
$\beta$ -Chloroprene	[126-99-8]	10	36		
				Pc	
3-Chloropropene	[107-05-1]	1	3	2	6
2-Chloropropionic acid	[598-78-7]	0.1	0.44		
				Pc	
o-Chlorostyrene	[2039-87-4]	50	283	75	425
o-Chlorotoluene	[95-49-8]	50	259		
Chlorpyrifos	[2921-88-2]	0.2			Pc
Chromite ore processing (chromate)		0.05			C1,RP,EM
(as Cr)					
Chromium (metal)	[7440-47-3]		0.5		
Chromium III compounds (as Cr)				0.5	
Chromium VI, water insoluble		0.01			C1,RP,EM,S
inorganic compounds (as Cr)					
Chromium VI, water soluble		0.05			C1,RP,EM,S
inorganic compounds (as Cr)					
Chromyl chloride	[14977-61-8]	0.025	0.16		



**LOGAN  
DRILLING  
GROUP**

Chrysene	[218-01-9]	Without applicable
permissible		C2, RP, EM
		exposure value
Chrysotile		See Asbestos
Clopidol	[2971-90-6]	10
Coal dust	[53570-85-7]	2
(less than 5% crystalline silica)		Rd
Coal dust	0.1	Rd, of
quartz		
(more than 5% crystalline silica)		
Coal tar pitch volatiles,	[65996-93-	
2]	0.2	C1, RP, EM
as benzene solubles		
Cobalt	[7440-48-4]	
elemental, and		
inorganic compounds		
(as Co)	0.02	C3, S
Cobalt hydrocarbonyl (as Co)	[16842-03-8]	0.1
Cobalt tetracarbonyl (as Co)	[10210-68-1]	0.1
Continious filament fibres		See Fibres-
Artificial Vitreous Mineral Fibres		
(fibrous glass)		
Copper [7440-50-8], fume (as Cu)		0.2
Copper [7440-50-8], dusts & mists		1
(as Cu)		
Corundum	[1302-74-5]	10
note 1		Td,
Cotton dust,		
cotton waste processing	1.0	
operation of waste recycling		
and garnetting.		
Cotton dust,		
in yarn manufacturing	0.2	
and cotton washing operations.		
Cotton dust,		
in textile mill waste house	0.5	
operations or in yarn		
manufacturing to dust from		
"lower-grade washed cotton".		
Cotton dust,		
in textile slashing and weaving		0.75
operations.		
Coyden®	See Clopidol	
Crag®	See Sesone	
Cresol (all isomers)	[1319-77-	
3]	5 22	Pc
Cristobalite	See Silica	



**LOGAN  
DRILLING  
GROUP**

Crocidolite	See Asbestos					
Crotonaldehyde	[4170-30-3]	2	5.7			
Crufomate®	[299-86-5]	5				
Cumene	[98-82-8]	50	246			
Cyanamide	[420-04-2]	2				
Cyanides (as CN)				C10	C11	Pc,RP
Cyanogen	[460-19-5]	10	21			
Cyanogen chloride	[506-77-4]				C0.3	C0.75
	RP					
Cyclohexane	[110-82-7]	300	1030			
Cyclohexanol	[108-93-0]	50	206			Pc
Cyclohexanone	[108-94-1]	25	100			
	Pc					
Cyclohexene	[110-83-8]	300	1010			
Cyclohexylamine	[108-91-8]	10	41			
Cyclonite	[121-82-4]	1.5				Pc
Cyclopentadiene	[542-92-7]	75	203			
Cyclopentane	[287-92-3]	600	1720			
Cyhexatin	[13121-70-5]	5				
2,4-D	[94-75-7]	10			C2,EM	
DDT	[50-29-3]	1			C3	
	(Dichlorodiphenyltrichloroethane)					
Decaborane	[17702-41-9]	0.05	0.25	0.15	0.75	Pc
Demeton®	[8065-48-3]	0.01	0.11			Pc
Di-sec-octyl phthalate	[117-81-7]				5	
	10 C3					
2,6-Di-tert-butyl-p-cresol	[128-37-0]	10				
Diacetone alcohol	[123-42-2]	50	238			
4,4'-Diaminodiphenylmethane dianiline						See 4,4'-Methylene
1,2-Diaminoethane						See Ethylenediamine
1,6-Diaminohexane	[124-09-4]	0.5	2.3			
Diatomaceous earth						See Silica
Diazinon®	[333-41-5]		0.1			Pc
Diazomethane	[334-88-3]	0.2	0.34			
Diborane	[19287-45-7]	0.1	0.11			
Dibromodifluoromethane						See Difluorodibromomethane
1,2-Dibromoethane	[106-93-4]	20	155			
	Pc, C2, RP, EM					
Dibrom®						See Naled
Dibutyl phenyl phosphate	[2528-36-1]	0.3	3.5			Pc
Dibutyl phosphate	[107-66-4]	1	8.6	2	17	
Dibutyl phthalate	[84-74-2]		5			
2-N-Dibutylaminoethanol	[102-81-8]	2	14			Pc



**LOGAN  
DRILLING  
GROUP**

3,3'-Dichloro-4,4'-diamino- (2-chloroaniline) diphenylmethane			See 4,4'-Methylene bis		
1,3-Dichloro-5,5-dimethyl hydantoin	[118-52-5]				
0.2	0.4				
Dichloroacetylene	[7572-29-4]			C0.1	C0.39
RP					
o-Dichlorobenzene	[95-50-1]			C50	C301
RP					
p-Dichlorobenzene	[106-46-7]	20	120		
C3					
3,3'-Dichlorobenzidine	[91-94-1]			Without	
applicable permissible exposure value				Pc, C2, RP, EM	
1,4-Dichloro-2-butene	[764-41- 0]	0.005	0.025	Pc, C2, EM	
Dichlorodifluoromethane	[75-71-8]		1000	4950	
3,5-Dichloro-2,6-dimethyl-4 pyridinol	See Clopidol				
Dichlorodiphenyltrichloroethane	See DDT				
1,1-Dichloroethane	[75-34-3]	100	405		
1,2-Dichloroethane	[107-06-2]	1	4	2	8
C2, EM					
Dichloroethyl ether	[111-44-4]	5	29	10	58
Pc					
1,1-Dichloroethylene	[75-35-4]	1	4		
1,2-Dichloroethylene	[540-59-0]	200	793		
Dichlorofluoromethane	[75-43-4]	10	42		
Dichloromethane	See Methylene chloride				
1,1-Dichloro-1-nitroethane	[594-72-9]		2	12	
(2,4-Dichlorophenoxy) acetic acid	See 2.4-D				
1,2-Dichloropropane	[78-87-5]	75	347	110	508
Dichloropropene (cis and trans isomers)	[542-75-6]	1	4.5		
Pc, C3					
2,2-Dichloropropionic acid	[75-99-0]		1	5.8	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	[76-14-2]			1000	
6990					
Dichlorvos	[62-73-7]	0.1	0.9		Pc
Dicrotophos	[141-66-2]		0.25		Pc
4,4'-Dicyclohexyl methane diisocyanate	See Methylene bis (4-cyclohexylisocyanate)				
Dicyclopentadiene	[77-73-6]	5	27		
Dicyclopentadienyl iron	[102-54-5]			10	
Dieldrin	[60-57-1]	0.25			Pc
Diethanolamine	[111-42-2]	3	13		
Pc					
Diethyl ether	[60-29-7]	400	1210	500	1520





**LOGAN  
DRILLING  
GROUP**

Diethyl ketone	[96-22-0]	200	705		
Diethyl phthalate	[84-66-2]		5		
Diethylamine	[109-89-7]	5	15	15	45 Pc
2-Diethylaminoethanol	[100-37-8]	10	48		Pc
Diethylene triamine	[111-40-0]	1		4.2	
	Pc				
Di(2-ethylhexyl) phthalate					See Di-sec-octyl phthalate
Difluorodibromomethane	[75-61-6]		100	858	
Diglycidyl ether (DGE)	[2238-07-5]		0.1	0.53	
Dihydroxybenzene					See Hydroquinone
Diisobutyl ketone	[108-83-8]	25	145		
1,6-Diisocyanatohexane					See Hexamethylene diisocyanate
Diisopropyl ether	[108-20-3]	250	1040	310	1300
Diisopropylamine	[108-18-9]	5	21		
	Pc				
Dimethoxymethane					See Methylal
Dimethyl carbamoyl chloride	[79-44-7]				
	Without applicable permissible exposure value				
	C2,RP,EM				
Dimethyl sulfate	[77-78-1]	0.1	0.52		
	Pc, C2,RP,EM				
2,6-Dimethyl-4-heptanone					See Diisobutyl ketone
N,N-Dimethylacetamide	[127-19-5]	10	36		Pc
Dimethylamine	[124-40-3]	5	9		
Dimethylaminobenzene					See Xylidine
N,N-Dimethylaniline	[121-69-7]	5	25	10	50
	Pc				
Dimethylbenzene					See Xylene
N,N-Dimethylformamide	[68-12-2]	10	30		Pc
1,1-Dimethylhydrazine	[57-14-7]	0.5	1.2		Pc, C2,RP,EM
Dimethylnitrosoamine					See N-Nitrosodimethylamine
Dimethylphthalate	[131-11-3]		5		
Dinitolmide	[148-01-6]		5		
Dinitro-ortho-cresol	[534-52-1]		0.2		Pc
3,5-Dinitro-ortho-toluamide					See Dinitolmide
Dinitrobenzene (all isomers)		0.15	1		Pc
	[528-29-0 ; 99-65-0 ; 100-25-4 ; 25154-54-4]				



**LOGAN  
DRILLING  
GROUP**

Dinitrotoluene	[25321-14-6]		0.2			
Pc, C3						
Dioxane	[123-91-1]	20	72			Pc, C3
Dioxathion	[78-34-2]		0.2			Pc
Diphenyl	See Biphenyl					
Diphenyl ether	See Phenyl ether					
Diphenylamine	[122-39-4]		10			
4,4'-Diphenylmethane	See Methylene bis (4-					
phenyl isocyanate)						
diisocyanate (MDI)						
Dipropylene glycol	[34590-94-8]	100	606	150	909	
Pc						
monomethyl ether						
Diquat [231-36-7]		0.5				Td, note 1
		0.1				Rd, note 1
Disulfiram	[97-77-8]		2			
Disulfoton	[298-04-4]		0.1			
Disyston®	See Disulfoton					
Diuron	[330-54-1]		10			
Divinyl benzene	[1321-74-0]	10	53			
Dursban®	See Chlorpyrifos					
Dust, inert or nuisance particulates	See Particulates					
Not Otherwise Classified (PNOC)						
Dyfonate®	See Fonofos					
Emery	[12415-34-8]	10				Td, note 1
Endosulfan	[115-29-7]		0.1			Pc
Endrin	[72-20-8]	0.1				Pc
Enflurane	[13838-16-9]	75	566			
Enzymes, proteolytic	See Subtilisins					
Epichlorohydrin	[106-89-8]	2	7.6			
Pc, C2, PR, EM						
EPN	[2104-64-5]	0.1				Pc
2,3-Epoxy-1-propanol	See Glycidol					
1,2-Epoxypropane	See Propylene oxide					
Erionite	See Fibres-Natural Mineral Fibres					
Ethane	[74-84-0]	Simple asphyxiant				
Ethanethiol	See Ethyl mercaptan					
Ethanol	See Ethyl alcohol					
Ethanolamine	See 2-Aminoethanol					
Ethion	[563-12-2]	0.4				Pc
2-Ethoxyethanol (EGEE)	[110-80-					
5]	5	18				Pc
2-Ethoxyethyl acetate (EGEEA)	[111-15-					
9]	5	27				Pc
Ethyl acetate	[141-78-6]	400	1440			
Ethyl acrylate	[140-88-5]	5	20	15	61	
C3, S						



**LOGAN  
DRILLING  
GROUP**

Ethyl alcohol	[64-17-5]	1000	1880		
Ethyl amyl ketone	[541-85-5]	25	131		
Ethyl benzene	[100-41-4]	100	434	125	543
Ethyl bromide	[74-96-4]	50	223		
Pc, C3					
Ethyl butyl ketone	[106-35-4]	50	234		
Ethyl chloride	[75-00-3]	1000	2640		
Ethyl ether	See Diethyl ether				
Ethyl formate	[109-94-4]	100	303		
Ethyl mercaptan	[75-08-1]	0.5	1.3		
Ethyl silicate	[78-10-4]	10	85		
Ethylamine	[75-04-7]	10	18		
Ethylene	[74-85-1]	Simple asphyxiant			
Ethylene bromide	See Vinyl bromide				
Ethylene chlorohydrin	[107-07-3]				C1
C3,3 Pc,RP					
Ethylene dibromide	See 1,2-Dibromoethane				
Ethylene dichloride	See 1,2-Dichloroethane				
Ethylene glycol (vapour and mist)	[107-21-1]				
C50 C127 RP					
Ethylene glycol dinitrate	[628-96-6]				C0.2
C1.2 Pc,RP					
Ethylene glycol monoethyl ether	See 2-Ethoxyethanol				
Ethylene glycol monoethyl ether acetate	See 2-Ethoxyethyl acetate				
Ethylene glycol monomethyl ether	See 2-Methoxyethanol				
Ethylene glycol monomethyl ether acetate	See 2-Methoxyethyl acetate				
Ethylene imine	[151-56-4]	0.5	0.88		
Pc					
Ethylene oxide	[75-21-8]	1	1.8		
C2,RP,EM					
Ethylenediamine	[107-15-3]	10	25		
Pc, S					
Ethylglycol acetate	See 2-Ethoxyethyl acetate				
Ethylidene chloride	See 1,1-Dichloroethane				
Ethylidene norbornene	[16219-75-3]				C5
C25 RP,EM					
N-Ethylmorpholine	[100-74-3]	5	24		
Pc					
Fenamiphos	[22224-92-6]	0.1			Pc
Fensulfotion	[115-90-2]		0.1		
Fenthion	[55-38-9]	0.2			Pc
Ferbam	[14484-64-1]	10			
Ferrovanadium (dust)	[12604-58-9]			1	
3					



**LOGAN  
DRILLING  
GROUP**

Fibres-artificial vitreous mineral fibres					
Fibrous glass, continuous filament	10				Td, note 1
Fibrous glass, microfibres (note 4)	1				fibre/cm3
Insulation wool fibres, glass wool (note 4)			1		fibre/cm3
Insulation wool fibres, rock wool (note 4)			1		fibre/cm3
Insulation wool fibres, slag wool (note 4)			2		fibres/cm3
Refractory fibres (ceramic or others) (note 4)				1	fibre/cm3
		C3			
Fibres-Natural Mineral Fibres (note 4)					
Attapulgit [12174-11-7]			1		fibre/cm3
		C1,EM			
Erionite [66733-21-9]					Prohibited
use		C1			
Talc See Talc (fibrous)					
Wollastonite [13983-17-0]	10				Td,
note 1					
	5				Rd, note 1
Fibres-Organic Synthetic Fibres					
Carbon and graphite fibres	10				Td, note 1
	5				Rd, note 1
Para-aramides fibres (Kevlar®, Twaron®)			1		fibre/cm3
Polyolefines fibres			10		Td,
note 1					
Fibrous glass dust See Fibres-Artificial Vitreous Mineral Fibres					
Fluorides (as F)			2.5		
Fluorine [7782-41-4]	0.1	0.2			
Fluorotrichloromethane					See Trichlorofluoromethane
Fonofos [944-22-9]		0.1			Pc
Formaldehyde [50-00-0]			C2	C3	
			C2,EM,RP		
Formamide [75-12-7]	10	18			Pc
Formic acid [64-18-6]	5	9.4	10	19	
Formic aldehyde					See Formaldehyde
Freon® 11					See Trichlorofluoromethane
Freon® 112					See 1,1,1,2-Tetrachloro-1,2-difluoroethane





**LOGAN  
DRILLING  
GROUP**

Freon® 113	See 1,1,2-Trichloro-1,2,2-trifluoroethane				
Freon® 114	See 1,2-Dichloro-1,1,2,2-tetrafluoroethane				
Freon® 115	See Chloropentafluoroethane				
Freon® 12	See Dichlorodifluoromethane				
Freon® 12B2	See Difluorodibromomethane				
Freon® 21	See Dichlorofluoromethane				
Freon® 22	See Chlorodifluoromethane				
Furadan®	See Carbofuran				
Furfural	[98-01-1]	2	7,9		Pc
Furfuryl alcohol	[98-00-0]	10	40	15	60
Pc					
Gasoline	[8006-61-9]	300	890	500	1480 C3
Germanium tetrahydride	[7782-65-2]	0.2	0.63		
Glass wool	See Fibres-Artificial Vitreous Mineral Fibres				
Glass, fibrous or dust	See Fibres-Artificial Vitreous Mineral Fibres				
Glutaraldehyde	[111-30-8]			C0.1	C0.41
RP,S					
Glycerin (mist)	[56-81-5]		10		
Glycidol	[556-52-5]	25	76		
Glycol monoethyl ether	See 2-Ethoxyethanol				
Grain dust (oat, wheat, barley)		4			Td, note 1
Graphite (all forms except fibers)	[7782-42-5]				
2					Rd, note 1
Graphite (fibres)	See Fibres-Organic Synthetic Fibres				
Guthion®	See Azinphos-methyl				
Gypsum [13397-24-5]		10			Td, note 1
5					Rd, note 1
Hafnium	[7440-58-6]		0.5		
Halothane	[151-67-7]	50	404		
Helium [7440-59-7]	Simple asphyxiant				
Heptachlor	[76-44-8]		0.05		Pc,C3
Heptachlor epoxide [1024-57-3]			0.05		
Pc,C3					
n-Heptane	[142-82-5]	400	1640	500	2050
2-Heptanone	See Methyl n-amyl ketone				
3-Heptanone	See Ethyl butyl ketone				
Hexachlorobenzene	[118-74-1]		0.025		
Pc,C3					
Hexachlorobutadiene [87-68-3]		0.02	0.21		
Pc,C2,RP,EM					
Hexachlorocyclopentadiene [77-47-4]		0.01	0.11		
Hexachloroethane	[67-72-1]	1	9.7		
Pc,C3					



**LOGAN  
DRILLING  
GROUP**

Hexachloronaphthalene	[1335-87-1]	0.2	Pc			
Hexafluoroacetone	[684-16-2]	0.1	0.68			
	Pc					
Hexamethylphosphoramide	[680-31-9]			Without		
applicable	permissible			Pc, C2, RP, EM		
	exposure value					
Hexamethylene diisocyanate	[822-06-0]	0.005	0.034	EM, S		
n-Hexane	[110-54-3]	50	176			Pc
Hexane (other isomers)		500	1760	1000		3500
2-Hexanone	See Methyl n-butyl ketone					
Hexone	See Methyl isobutyl ketone					
sec-Hexyl acetate	[108-84-9]	50	295			
Hexylene glycol	[107-41-5]			C25		C121
	RP					
Hydrazine	[302-01-2]	0.1	0.13			
	Pc, C2, RP, EM					
Hydrogen	[1333-74-0]			Simple asphyxiant		
Hydrogen bromide	[10035-10-6]			C3		C9, 9
	RP					
Hydrogen chloride	[7647-01-0]			C5		C7, 5
	RP					
Hydrogen cyanide	[74-90-8]			C10		C11
	Pc, RP					
Hydrogen fluoride (as F)	[7664-39-3]					C3
	C2.6 RP					
Hydrogen peroxide	[7722-84-1]	1	1.4			
Hydrogen selenide (as Se)	[7783-07-5]	0.05	0.16			
Hydrogen sulfide	[7783-06-4]	10	14	15		21
Hydrogenated terphenyls	[61788-32-7]	0.5	4, 9			
Hydroquinone	[123-31-9]		2			
Hydroquinone monomethyl ether	See 4-Methoxyphenol					
4-Hydroxy-4methyl-2-pentanone	See Diacetone alcohol					
2-Hydroxypropyl acrylate	[999-61-1]	0.5	2.8	Pc		
2,2'-Iminodiethanol	See Diethanolamine					
Indene	[95-13-6]	10	48			
Indium [7440-74-6] and compounds	(as In)					0.1
Insulation wool fibres	See Fibres-Artificial Vitreous					
Mineral Fibres						
Iodine	[7553-56-2]		C0.1	C1.0		RP
Iodoform	[75-47-8]	0.6	10			
Iodomethane	See Methyl iodide					
Iron dicyclopentadienyl	See Dicyclopentadienyl iron					



**LOGAN  
DRILLING  
GROUP**

Iron pentacarbonyl (as Fe)	[13463-40-6]	0.1	0.23		
0.2 0.45					
Iron salts, soluble (as Fe)			1.0		
Iron trioxide, dust and fume (as Fe)	[1309-37-1]				
5					
Isoamyl alcohol	[123-51-3]	100	361	125	452
Isobutyl acetate	[110-19-0]	150	713		
Isobutyl alcohol	[78-83-1]	50	152		
Isocyanate oligomers	Without applicable				
permissible				S	
exposure value					
Isooctyl alcohol	[26952-21-6]	50	266		
Pc					
Isophorone	[78-59-1]		C5	C28	RP
Isophorone diisocyanate	[4098-71-9]	0.005 0.045	EM, S		
Isopropoxyethanol	[109-59-1]	25	106		
Pc					
Isopropyl acetate	[108-21-4]	250	1040	310	1290
Isopropyl alcohol	[67-63-0]	400	985	500	1230
Isopropyl ether	See Diisopropyl ether				
Isopropyl glycidyl ether (IGE)	[4016-14-2]	75 356		50	238
Isopropylamine	[75-31-0]	5	12	10	24
N-Isopropylaniline	[768-52-5]	2	11		
Pc					
Isopropylbenzene	See Cumene				
Kaolin [1332-58-7]	5				Rd, note 1
Ketene [463-51-4]	0.5 0.86 1.5	2.6			
L.P.G. (Liquified petroleum gas)					[68476-85-7] 1000
1800					
Lead [7439-92-1], and			0.05		
C3					
inorganic compounds, (as Pb)					
Lead arsenate (as Pb <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> )	[3687-31-8]				0.15
Lead chromate (as Cr)	[7758-97-6]	0.012			C2, RP, EM
Lead tetraethyl (as Pb)	[78-00-2]	0.05			Pc
Lead tetramethyl (as Pb)	[75-74-1]	0.05			Pc
Limestone	[1317-65-3]		10		Td,
note 1					
Lindane	[58-89-9]		0.5		Pc
Lithium hydride	[7580-67-8]			0.025	
Magnesite	[546-93-0]		10		Td,
note 1					



**LOGAN  
DRILLING  
GROUP**

Magnesium oxide fume (as Mg)	[1309-48-4]				10
Malathion	[121-75-5]	10			Pc
Maleic anhydride	[108-31-6]	0.25	1.0		
S					
Manganese	[7439-96-5]				
Fume, dust and compounds (as Mn)		0.2			Td
Manganese cyclopentadienyl 1]	[12079-65- 1]	0.1			Pc
tricarbonyl (as Mn)					
Manganese methyl	[12108-13-3]		0.2		
Pc					
cyclopentadienyl tricarbonyl (as Mn)					
Manganese tetroxide	[1317-35-7]		1		
Marble	See Limestone				
Mequinol	See 4-Methoxyphenol				
Mercury	[7439-97-6],		0.01		0.03
Pc					
alkyl compounds (as Hg)					
Mercury	[7439-97-6],		0.1		
Pc					
aryl compounds (as Hg)					
Mercury	[7439-97-6],		0.025		
Pc					
inorganic compounds (as Hg)					
Mercury	[7439-97-6],		0.025		
Pc					
mercury vapor (as Hg)					
Mesityl oxide	[141-79-7]	10	40		
Methacrylic acid	[79-41-4]	20	70		
Methane	[74-82-8]				Simple asphyxiant
Methanethiol	See Methyl mercaptan				
Methanol	See Methyl alcohol				
Methomyl	[16752-77-5]	2.5			
Methoxychlor	[72-43-5]	10			
2-Methoxyethanol (EGME)	[109-86- 4]	5	16		Pc
2-Methoxyethyl acetate (EGMEA)	[110-49- 6]	5	24		Pc
4-Methoxyphenol	[150-76-5]			5	
1-Methoxy-2-propanol monomethyl ether					See Propylene glycol
Methyl acetate	[79-20-9]	200	606	250	757
Methyl acetylene	[74-99-7]	1000	1640		
Methyl acetylene-propadiene	[59355-75-8]	1000	1640		
1250	2050				





**LOGAN  
DRILLING  
GROUP**

mixture (MAPP)						
Methyl acrylate	[96-33-3]	2	7			
Pc, S						
Methyl alcohol	[67-56-1]	200	262	250	328	
Pc						
Methyl amyl alcohol	[108-11-2]	25	104	40	167	
Pc						
Methyl n-amyl ketone	[110-43-0]	50	233			
Methyl bromide	[74-83-9]	5	19			
Pc						
Methyl tert-butyl ether	[1634-04-4]	40	144			
Methyl n-butyl ketone	[591-78-					
6]	5	20				
Pc						
Methyl cellosolve® See 2-Methoxyethanol						
Methyl cellosolve® acetate See 2-Methoxyethyl acetate						
Methyl chloride	[74-87-3]	50	103	100	207	
Pc						
Methyl chloroform	[71-55-6]	350	1910	450	2460	
Methyl 2-cyanoacrylate	[137-05-3]	2	9,1	4		
18						
Methyl demeton	[8022-00-2]		0.5			
Pc						
Methyl ethyl ketone (MEK)	[78-93-3]	50	150	100		
300						
Methyl ethyl ketone peroxide	[1338-23-4]					
C0.2 C1.5 RP						
Methyl formate	[107-31-3]	100	246	150	368	
Methyl glycol	See 2-Methoxyethanol					
Methyl glycol acetate	See 2-Methoxyethyl acetate					
Methyl hydrazine	[60-34-4]			C0.2	C0.38	
Pc, C2, RP, EM						
Methyl iodide	[74-88-4]	2	12			
Pc, C2, EM						
Methyl isoamyl ketone	[110-12-3]	50	234			
Methyl isobutyl carbinol	See Methyl amyl alcohol					
Methyl isobutyl ketone	[108-10-1]	50	205	75		
307						
Methyl isocyanate	[624-83-9]	0.02	0.047			
Pc						
Methyl isopropyl ketone	[563-80-4]	200	705			
Methyl mercaptan	[74-93-1]	0.5	0.98			
Methyl methacrylate (monomer)	[80-62-					
6]	50	205				
S						
Methyl parathion	[298-00-0]		0.2			
Pc						
Methyl propyl ketone	[107-87-9]	150	530			



**LOGAN  
DRILLING  
GROUP**

Methyl silicate	[681-84-5]	1	6		
a-Methyl styrene	[98-83-9]	50	242	100	483
Methylacrylonitrile	[126-98-7]	1	2.7		
Pc					
Methylal	[109-87-5]	1000	3110		
Methylamine	[74-89-5]	5	6,4		
N-Methylaniline	[100-61-8]	0.5	2.2		
Pc					
Methylcyclohexane	[108-87-2]	400	1610		
Methylcyclohexanol	[25639-42-3]	50	234		
o-Methylcyclohexanone	[583-60-8]	50	229	75	
344	Pc				
Methylene chloride	[75-09-2]	50	174		
C2,EM					
4,4'-Methylene bis	[101-14-4]	0.02	0.22		
Pc, C2, RP, EM					
(2-chloroaniline) (MOCA)					
Methylene bis	[5124-30-1]	0.005	0.054		
EM, S					
(4-cylohexylisocyanate)					
4,4'-Methylene dianiline	[101-77-9]	0.1	0.81		
Pc, C2, EM					
Methylene bis	[101-68-8]	0.005	0.051		
EM, S					
(4-phenyl isocyanate) (MDI)					
5-Methyl-3-heptanone	See Ethyl amyl ketone				
N-Methyl-2,4,6-Trinitrophenyl nitramine	See Tetryl				
Metribuzin	[21087-64-9]	5			
Mevinphos®	See Phosdrin				
Mica	[12001-26-2]	3			Rd, note 1
Microfibres (fibrous glass)					See Fibres-Artificial
Vitreous Mineral Fibres					
Mineral oil (mist)		5		10	
Mineral wool fibres	See Fibres-Artificial				Vitreous Mineral Fibres
Molybdenum (as Mo)	[7439-98-7]				
Insoluble compounds		10			
Soluble compounds		5			
Monocrotophos	[6923-22-4]		0.25		
Pc					
Morpholine	[110-91-8]	20	71		Pc
Naled (Dibrom®)	[300-76-5]		3		
Pc					
Naphtha	See VM&P Naphtha				
Naphthalene	[91-20-3]	10	52	15	79



**LOGAN  
DRILLING  
GROUP**

β-Naphthylamine	[91-59-8]				Without applicable
permissible	C1,RP,EM				
exposure value					
α-Naphthylthiourea	See ANTU				
Nemacur®	See Fenamiphos				
Neon	[7440-01-9]				Simple asphyxiant
Nialate®	See Ethion				
Nickel	[7440-02-0]				
Metal	1				
Insoluble compounds (as Ni)				1	
Soluble compounds (as Ni)			0.1		
Nickel carbonyl (as Ni)	[13463-39-3]			0.001	0.007
Nickel sulfide roasting, fume and dust (as Ni)			1		
	C1,RP,EM				
Nicotine	[54-11-5]	0.5			Pc
Nitrapyrin	[1929-82-4]	10		20	
Nitric acid	[7697-37-2]	2	5.2	4	10
Nitric oxide	See Nitrogen monoxide				
p-Nitroaniline	[100-01-6]		3		
	Pc				
Nitrobenzene	[98-95-3]	1	5		Pc
p-Nitrochlorobenzene	[100-00-5]	0.1	0.64		Pc
4-Nitrodiphenyl	[92-93-3]				Without applicable
permissible	Pc,C1,RP,EM				
exposure value					
Nitroethane	[79-24-3]	100	307		
Nitrogen	[7727-37-9]				Simple asphyxiant
Nitrogen dioxide	[10102-44-0]	3	5.6		
Nitrogen monoxide	[10102-43-9]	25	31		
Nitrogen trifluoride	[7783-54-2]	10		29	
Nitroglycerin (NG)	[55-63-0]			C0.2	C1,86
	Pc,RP				
Nitromethane	[75-52-5]	100	250		
1-Nitropropane	[108-03-2]	25	91		
2-Nitropropane	[79-46-9]	10	36		
	C2,RP,EM				
N-Nitrosodimethylamine	[62-75-9]				Without applicable
permissible					Pc,C2,RP,EM
exposure value					
Nitrotoluene (all isomers)		2	11		Pc
	[88-72-2 ; 99-08-1 ; 99-99-0 ; 1321-12-6]				
Nitrotrichloromethane	See Chloropicrin				
Nitrous oxide	[10024-97-2]	50	90		



**LOGAN  
DRILLING  
GROUP**

Nonane [111-84-2]	200	1050			
Nuisance particulates Classified (PNOC)		See Particulates Not Otherwise			
Octachloronaphthalene	[2234-13-1]		0.1		
	0.3 Pc				
Octane [111-65-9]	300	1400	375	1750	
Oil mist, mineral		See Mineral oil (mist)			
Osmium tetroxide (as Os)	[20816-12-0]	0.0002	0.0016	0.0006	
	0.0047				
Oxalic acid [144-62-7]		1		2	
Oxygen difluoride [7783-41-7]				C0.05	C0.11
	RP				
Ozone [10028-15-6]		C0.1	C0.2	RP	
Para-aramides fibres		See Fibres-Organic Synthetic			
Fibres					
Paraffin wax, fume [8002-74-2]			2		
Paraquat, respirable particulates	[4685-14-7]				
	0.1				
Parathion [56-38-2]		0.1			Pc
Particulate polycyclic aromatic volatiles				See Coal tar pitch	
hydrocarbons (PPAH)					
Particulates Not Otherwise					
	10			Td, note 1	
Classified (PNOC)					
Pentaborane [19624-22-7]	0.005	0.013	0.015	0.039	
Pentachloronaphthalene	[1321-64-8]				
	0.5	Pc			
Pentachloronitrobenzene	[82-68-8]			0.5	
Pentachlorophenol	[87-86-5]		0.5		
	Pc, C2, RP, EM				
Pentaerythritol	[115-77-5]		10		
n-Pentane [109-66-0]	120	350			
2-Pentanone	See Methyl propyl ketone				
3-Pentanone	See Diethyl ketone				
Pentyl acetates					
n-Amyl acetate [628-63-7]	50	266	100	532	
sec-Amyl acetate [626-38-0]	50	266	100	532	
tert-Amyl acetate [625-16-1]	50	266	100	532	
Isoamyl acetate [123-92-2]	50	266	100	532	
2-Methyl-1-butyl acetate	[624-41-9]	50	266		
	100 532				
3-Pentyl acetate [620-11-1]	50	266	100	532	
Perchloroethylene	[127-18-4]	25	170	100	685
	C3				
Perchloromethyl mercaptan	[594-42-3]	0.1		0.76	
Perchloryl fluoride [7616-94-6]	3	13	6	25	





**LOGAN  
DRILLING  
GROUP**

Perfluorodimethylcetone	See Hexafluoroacetone				
Perfluoroisobutylene	[382-21-8]				C0.01
	C0.082 RP				
Perlite	[83969-76-0]	10			Td,
note 1					
	5				Rd, note 1
Petroleum distillates	See Gasoline, Stoddard solvent,				
VM&P Naphtha					
Phenacyl chloride	See a-Chloroacetophenone				
Phenol [108-95-2]	5	19			Pc
Phenothiazine	[92-84-2]	5			
	Pc				
Phenyl ether, vapour	[101-84-8]	1	7	2	
	14				
Phenyl glycidyl ether (PGE)	[122-60-				
1]	0.1	0.61			Pc, S, C3
Phenyl mercaptan	[108-98-5]	0.5	2.3		
meta-Phenylenediamine	[108-45-2]			0.1	
ortho-Phenylenediamine	[95-54-				
5]	0.1				C2, EM
para-Phenylenediamine	[106-50-				
3]	0.1				Pc, S
Phenylethylene	See Styrene (monomer)				
Phenylhydrazine	[100-63-0]	0.1	0.44		
	Pc, C2, RP, EM				
N-Phenyl-β-naphthylamine	[135-88-6]				Without
applicable permissibile					C2, RP, EM
	exposure value				
Phenylphosphine	[638-21-1]				C0.05 C0.23
	RP				
Phorate	[298-02-2]	0.05		0.2	Pc
Phosdrin	[7786-34-7]	0.01	0.092	0.03	0.27 Pc
Phosgene	[75-44-5]	0.1	0.40		
Phosphine	[7803-51-2]	0.3	0.42	1	1.4
Phosphoric acid	[7664-38-2]			1	3
Phosphorus (yellow)	[7723-14-0]			0.1	
Phosphorus oxychloride	[10025-87-3]	0.1		0.63	
Phosphorus pentachloride	[10026-13-8]	0.1		0.85	
Phosphorus pentasulfide	[1314-80-3]			1	
	3				
Phosphorus trichloride	[7719-12-2]	0.2		1.1	0.5
	2.8				
Phthalic anhydride	[85-44-9]	1	6,1		
	S				
m-Phthalodinitrile	[626-17-5]		5		
Picloram	[1918-02-1]	10			
Picric acid	[88-89-1]	0.1			



**LOGAN  
DRILLING  
GROUP**

Pindone	[83-26-1]	0.1			
Piperazine dihydrochloride	[142-64-3]			5	
Plaster of Paris	[26499-65-0]	10			
	Td, note 1				
	5				Rd, note 1
Platinum	[7440-06-4]				
Metal	1			S	
Soluble salts (as Pt)		0.002			
	S				
Polychlorobiphenyls	See Chlorodiphenyl				
Polyolefines fibres	See Fibres-Organic Synthetic Fibres				
Polytetrafluoroethylene	[9002-84-0]				Determine
					quantitatively the decomposition products in
					decomposition products the air and express the
					results as Fluorides (see Fluorides
					standards)
Portland cement	[65997-15-1]	10			
	Td, note 1				
	5				Rd, note 1
Potassium hydroxide	[1310-58-3]				C2
	RP,EM				
Precipitated silica	See Silica - Amorphous, precipitated				
Propane	[74-98-6]	1000	1800		
Propane sultone	[1120-71-4]				Without applicable
permissible					C2,RP,EM
	exposure value				
Propanol	See n-Propyl alcohol				
Propargyl alcohol	[107-19-7]	1	2.3		
	Pc				
β-Propiolactone	[57-57-8]	0.5	1.5		
	C2,RP,EM				
Propionic acid	[79-09-4]	10	30		
Propoxur	[114-26-1]	0.5			
n-Propyl acetate	[109-60-4]	200	835	250	1040
n-Propyl alcohol	[71-23-8]	200	492	250	614
	Pc				
n-Propyl nitrate	[627-13-4]	25	107	40	172
Propylene	[115-07-1]				Simple asphyxiant
Propylene dichloride	See 1,2-Dichloropropane				
Propylene glycol dinitrate	[6423-43-				
4]	0.05 0.34				Pc
Propylene glycol					
monomethyl ether	[107-98-2]	100	369	150	553
Propylene imine	[75-55-8]	2	4,7		
	Pc, C2, RP, EM				
Propylene oxide	[75-56-9]	20	48		
	C2,RP,EM				



**LOGAN  
DRILLING  
GROUP**

Propyne	See Methyl acetylene				
Propyne-Propadiene mixture				See Methyl	
acetylene-propadiene mixture (MAPP)					
Pyrethrum	[8003-34-7]	5			
Pyridine	[110-86-1]	5	16		
Pyrocatechol	See Catechol				
Quartz	See Silica - Crystalline, Quartz				
Quinone	See p-Benzoquinone				
RDX	See Cyclonite				
Refractory fibres				See Fibres-Artificial	
Vitreous Mineral Fibres					
Resorcinol	[108-46-3]	10	45	20	90
Rhodium	[7440-16-6]				
Metal and insoluble compounds (as Rh)					0.1
Soluble compounds (as Rh)					0.001
Rock wool	See Fibres-Artificial Vitreous Mineral Fibres				
Ronnel	[299-84-3]	10			
Rosin core solder pyrolysis 7]	0.1		S		
products (as Formaldehyde)					
Rotenone	[83-79-4]	5			
Rouge	10			Td, note 1	
Rubber solvent (Naphtha)	[8030-30-6]	400	1590		
Selenium [7782-49-2] and compounds (as Se)			0.2		
Selenium hexafluoride (as Se)	[7783-79-1]	0.05	0.16		
Sencor®	See Metribuzin				
N-Serve®	See Nitrapyrin				
Sesone	[136-78-7]	10			
Sevin®	See Carbaryl				
Silane	See Silicon tetrahydride				
Silica - Amorphous, 2]	[61790-53-			Td, note 1	
Diatomaceous earth (uncalcined)					
Silica - Amorphous, fumes	[69012-64-			Rd, note 1	
2]	2				
Silica - Amorphous, fused	[60676-86-			Rd, note 1	
0]	0.1				
Silica - Amorphous, gel	[63231-67-			Rd, note 1	
4]	6				
(112926-00-8)					
Silica - Amorphous, precipitated				[1343-98-2]	
6				Td, note 1	
Silica - Crystalline, Cristobalite				[14464-46-1]	
0.05				Rd	



**LOGAN  
DRILLING  
GROUP**

Silica - Crystalline, Quartz	[14808-60-7]	0.1	Rd, C2, EM	
Silica - Crystalline, Tridymite	[15468-32-3]	0.05	Rd	
Silica - Crystalline, Tripoli	[1317-95-9]	0.1	Rd	
Silicon	[7440-21-3]	10		Td,
note 1				
Silicon carbide (non fibrous)	[409-21-2]	10	Td, note 1	
Silicon tetrahydride	[7803-62-5]	5	6.6	
Silver	[7440-22-4]			
Metal		0.1		
Soluble compounds (as Ag)			0.01	
Slag wool				See Fibres-Artificial Vitreous Mineral
Fibres				
Soapstone	[14378-12-2]	6		Td,
note 1				
		3	Rd, note 1	
Sodium azide	[26628-22-8]		C0.11 C0.3	RP
Sodium bisulfite	[7631-90-5]	5		
Sodium 2,4-dichlorophenoxyethyl sulfate				See
Sesone				
Sodium fluoroacetate	[62-74-8]		0.05	
0.15 Pc				
Sodium hydroxide	[1310-73-2]			C2
RP				
Sodium metabisulfite	[7681-57-4]		5	
Sodium tetraborate, anhydre	[1330-43-4]			1
Sodium tetraborate, decahydrate or borax	[1303-96-4]		5	
Sodium tetraborate, pentahydrate	[12045-88-4]			
1				
Starch	[9005-25-8]	10		Td, note 1
Stibine (as Sb)	[7803-52-3]	0.1	0.51	
Stoddard solvent	[8052-41-3]	100	525	
Strontium chromate (as Cr)	[7789-06-2]	0.0005	C2, RP, EM	
Strychnine	[57-24-9]		0.15	
Styrene (monomer)	[100-42-5]	50	213	100 426
Pc, C3				
Subtilisins	[1395-21-7 ;			
C0.00006				RP
9014-01-1] (Proteolytic enzymes as 100% pure crystalline enzyme)				





**LOGAN  
DRILLING  
GROUP**

Succinaldehyde	[638-37-9]	1	4		
Pc					
Sucrose	[57-50-1]	10			
Sulfometuron methyl	[74222-97-2]		5		
Sulfotep	[3689-24-5]	0.2			Pc
Sulfur dioxide	[7446-09-5]	2	5.2	5	13
Sulfur hexafluoride	[2551-62-4]	1000	5970		
Sulfur monochloride	[10025-67-9]			C1	C5.5
RP					
Sulfur pentafluoride	[5714-22-7]				C0.01
C0.1 RP					
Sulfur tetrafluoride	[7783-60-0]				C0.1
C0.44 RP					
Sulfuric acid	[7664-93-9]		1		3
Sulfuryl fluoride	[2699-79-8]	5	21	10	42
Sulprofos	[35400-43-2]	1			
Systox	See Demeton®				
2,4,5-T	[93-76-5]	10			
C2,RP,EM					
Talc, fibrous (note 4)			1		
fibre/cm3				C1,EM	
Talc, non fibrous	[14807-96-6]		3		
Rd					
Tantalum [7440-25-7],			5		
metal and oxide dusts (as Ta)					
TEDP	See Sulfotep				
Tellurium [13494-80-9] and				0.1	
compounds (as Te)					
Tellurium hexafluoride (as Te)	[7783-80-4]	0.02			0.10
Temephos	[3383-96-8]	10			
TEPP [107-49-3]	0.004 0.047				Pc
Terephthalic acid	[100-21-0]		10		
Terphenyls	[26140-60-3]		C0.53	C5	RP
1,1,2,2-Tetrabromoethane	[79-27-6]	1		14	
1,1,1,2-Tetrachloro-2,2-difluoroethane	[76-11-9]				500
4170					
1,1,2,2-Tetrachloro-1,2-difluoroethane	[76-12-0]				500
4170					
1,1,2,2-Tetrachloroethane	[79-34-5]	1		6,9	
Pc					
Tetrachloroethylene	See Perchloroethylene				
Tetrachloromethane	See Carbon tetrachloride				
Tetrachloronaphthalene	[1335-88-2]		2		
Tetraethyl lead	See Lead tetraethyl				
Tetraethyl pyrophosphate	See TEPP				
Tetrahydrofuran	[109-99-9]	100	300		
Tetramethyl lead	See Lead tetramethyl				



**LOGAN  
DRILLING  
GROUP**

Tetramethyl succinonitrile	[3333-52-6]	0.5	2.8	Pc	
Tetranitromethane	[509-14-8]	0.005	0.04		
	C2,EM				
Tetrasodium pyrophosphate	[7722-88-5]				5
Tetryl	[479-45-8]	1.5			
TGIC	See Triglycidyl isocyanurate				
Thallium, elemental	[7440-28-0],	0.1		Pc	
and soluble compounds (as Tl)					
Thimet®	See Phorate				
4,4'-Thiobis (6-tert-butyl-m-cresol)	[96-69-5]	10			
Thiodan®	See Endosulfan				
Thiodiphenylamine	See Phenothiazine				
Thioglycolic acid	[68-11-1]	1	3.8		
	Pc				
Thionyl chloride	[7719-09-7]			C1	C4,9
	RP				
Thiram®	[137-26-8]	5			
Tin	[7440-31-5]				
Metal		2			
Organic compounds (as Sn)			0.1		0.2
	Pc				
Oxide and inorganic compounds, except SnH4 (as Sn)					2
Titanium dioxide	[13463-67-7]	10			
	Td, note 1				
o-Tolidine	[119-93-7]	Without applicable permissible exposure value			
				Pc,C2,RP,EM	
Toluene	[108-88-3]	50	188		Pc
Toluene diisocyanate (TDI)	[26471-62-5]	0.005	0.036		
		0.02	0.14	EM,S	
(isomers mixture)					
o-Toluidine	[95-53-4]	2	8.8		
	Pc,C2,RP,EM				
m-Toluidine	[108-44-1]	2	8.8		Pc
p-Toluidine	[106-49-0]	2	8.8		
	Pc,C2,EM				
Toxaphene	See Chlorinated camphene				
Tremolite	See Asbestos				
Tribromomethane	See Bromoform				
Tributyl phosphate	[126-73-8]	0.2	2.2		
Trichloroacetic acid	[76-03-9]	1	6.7		
1,2,4-Trichlorobenzene	[120-82-1]				C5
	C37 RP				



**LOGAN  
DRILLING  
GROUP**

1,1,2-Trichloroethane	[79-00-				
5]	10	55		Pc	
1,1,1-Trichloroethane				See Methyl chloroform	
Trichloroethylene	[79-01-6]	50	269	200	1070
Trichlorofluoromethane	[75-69-4]				C1000
	C5620	RP			
Trichloromethane				See Chloroform	
Trichloronaphthalene	[1321-65-				
9]	5			Pc	
Trichloronitromethane				See Chloropicrin	
2,4,5-Trichlorophenoxyacetic acid				See 2,4,5-T	
1,2,3-Trichloropropane	[96-18-				
4]	10	60		Pc	
1,1,2-Trichloro-1,2,2-trifluoroethane	[76-13-1]				1000
	7670	1250	9590		
Tri-o-cresyl phosphate	[78-30-				
8]	0.1			Pc	
Tricyclohexyltin hydroxide				See Cyhexatin	
Tridymite				See Silica - Crystalline	
Triethanolamine	[102-71-6]			5	
	S				
Triethylamine	[121-44-8]	5	20.5	15	61.5
	Pc				
Trifluorobromomethane				See Bromotrifluoromethane	
Triglycidyl isocyanurate	[59653-73-5]				0.05
(TGIC) (alpha-)					
Triglycidyl isocyanurate	[59653-74-6]				0.05
(TGIC) (beta-)					
Triglycidyl isocyanurate	[2451-62-9]				0.05
(TGIC) (mixed isomers)					
Trimellitic anhydride	[552-30-7]				
	C0.04	S,RP			
Trimethyl benzene	[25551-13-7]	25		123	
Trimethyl phosphite	[121-45-9]	2		10	
Trimethylamine	[75-50-3]	5		12	15 36
2,4,6-Trinitrophenol				See Picric acid	
2,4,6-Trinitrophenylmethylnitramine				See Tetryl	
2,4,6-Trinitrotoluene (TNT)	[118-96-				
7]	0.5			Pc	
Triphenyl amine	[603-34-9]			5	
Triphenyl phosphate	[115-86-6]			3	
Tripoli				See Silica - Crystalline	
Tungsten (as W)	[7440-33-7]				
Insoluble compounds		5			10
Soluble compounds		1			3
Turpentine and certain monoterpenes					



**LOGAN  
DRILLING  
GROUP**

Turpentine [8006-64-2]	20	112			S
D-3 Carene [13466-78-9]	20	112			S
a-Pinene [80-56-8]	20	112			S
b-Pinene [127-91-3]	20	112			S
Uranium (natural) [7440-61-1]					
Insoluble compounds (as U)				0.2	
0.6					
Soluble compounds (as U)			0.05		
n-Valeraldehyde [110-62-3]	50	176			
Vanadium pentoxide, fume and respirable dust (as V2O5)		[1314-62-1]			0.05
Vegetable oil mists (except castor, cashew and other similar irritant oils)		[68956-68-3]			10
Vinyl acetate [108-05-4]	10	35	15		53
C3					
Vinyl benzene		See Styrene (monomer)			
Vinyl bromide [593-60-2]	5	22			
C2,EM					
Vinyl chloride (monomer) [75-01-04]	1	2.6			C1,RP,EM
Vinyl cyanide		See Acrylonitrile			
Vinyl cyclohexene dioxide [106-87-6]	10	57			Pc,C2,RP,EM
Vinyl toluene [25013-15-4]	50	242	100		483
Vinylidene chloride		See 1,1-Dichloroethylene			
VM&P Naphtha [8032-32-4]	300	1370			
Warfarin [81-81-2]		0.1			
Welding fumes (not otherwise classified)		5			
Wollastonite		See Fibres-Natural Mineral Fibres			
Wood dust (western red cedar)	2.5				Td, note 1
Wood dust hard and soft, except red cedar					5
Td, note 1					
Xylene (o-,m-,p- isomers) 651			100	434	150
[1330-20-7 ; 95-47-6 ; 108-38-3 ; 106-42-3]					
m-Xylene-a, a'diamine [1477-55-0]					
C0.1 Pc,RP					
Xylidine (mixed isomers) [1300-73-8]	0.5	2.5			Pc,C2,EM
Yttrium [7440-65-5], metal and compounds (as Y)					1
Zinc chloride, fume [7646-85-7]			1		





**LOGAN  
DRILLING  
GROUP**

Zinc chromates		0.01		
	C1, RP, EM, S			
	[13530-65-9; 11103-86-9			
	37300-23-5] (as Cr)			
Zinc stearate	[557-05-1]		10	
Zinc, oxide	[1314-13-2]			
Dust	10		Td, note 1	
Fume	5	10		
Zirconium [7440-67-7]			5	10
and compounds (as Zr)				
Zoalene®	See Dinitolmide			

## Part 2

### DAILY EXPOSURE TO A SPECIFIC SUBSTANCE OF A WORKER WORKING AT SEVERAL WORK LOCATIONS

Where a worker carries out his work at more than one work location during an 8-hour period, each exposure at those locations must be included in the evaluation of the daily average exposure value with respect to any substance listed in Part 1 of this Schedule. The same applies when the worker performs his work at more than one work location for a period equal to or greater than 4 hours but less than 8 hours or a period greater than 8 hours but less than or equal to 16 hours.

For the purpose of evaluating average daily exposure, the method of computation prescribed in the following formula is used

Daily average exposure value:

(in mg/m<sup>3</sup> or in ppm)

$$C_1T_1 + C_2t_2 + \dots + C_nt_n$$

---


$$t_1 + t_2 + \dots + t_n$$

Where:

**C** = measured concentration of a substance at a work location (expressed in mg/m<sup>3</sup> or in ppm)

**t** = duration of exposure to the substance at the same work location (expressed in hours)

**1, 2, ... , n** = indication of work locations



$t_1 + t_2 + \dots + t_n = 8$  hours or the total period of the shift in hours, whichever applies

### Part 3

#### DAILY EXPOSURE TO SEVERAL SUBSTANCES

Where two or more substances listed in Part 1 of this Schedule are present at the work location and where they have similar effects on the same organs of the human body, the effects of these substances are considered to be additive, unless it is established otherwise.

The concentration of the substances in the mixture is computed as follows:

$$C_1 + C_2 + \dots + C_n$$

$$R_m = \frac{\quad}{T_1} \quad \frac{\quad}{T_2} \quad \frac{\quad}{T_n}$$

Where:

**R<sub>m</sub>** = sum of the fractions of the mixture

**C** = measured concentration of a substance at a work location (expressed in mg/m<sup>3</sup> or in ppm)

**T** = depending on the case, the time-weighted average exposure value permitted under part 1 of this schedule or the adjusted average exposure value established in accordance with the Guide to the adjustment of permissible exposure values for unusual work schedules, published by the Institut de recherche Robert-Sauvé en santé et en sécurité du travail

**1, 2, ... , n** = indication of substances in the mixture

If **R<sub>m</sub>** is greater than one, the time-weighted or adjusted average exposure value of the mixture of the substances is exceeded

### Part 4

#### IDENTIFICATION OF SUBSTANCES ACCORDING TO THEIR CAS NUMBER

- 50-00-0 Formaldehyde
- 50-29-3 DDT (Dichlorodiphenyltrichloroethane)
- 50-32-8 Benzo(a)pyrene
- 50-78-2 Acetylsalicylic acid (Aspirin)



**LOGAN  
DRILLING  
GROUP**

54-11-5 Nicotine  
55-38-9 Fenthion  
55-63-0 Nitroglycerin  
56-23-5 Carbon tetrachloride  
56-38-2 Parathion  
56-55-3 Benz(a)anthracene  
56-81-5 Glycerin  
57-14-7 1,1-Dimethylhydrazine  
57-24-9 Strychnine  
57-50-1 Sucrose  
57-57-8  $\beta$ -Propiolactone  
57-74-9 Chlordane  
58-89-9 Lindane  
60-29-7 Diethyl ether  
60-34-4 Methyl hydrazine  
60-57-1 Dieldrin  
61-82-5 Amitrole  
62-53-3 Aniline  
62-73-7 Dichlorvos  
62-74-8 Sodium fluoroacetate  
62-75-9 N-Nitrosodimethylamine  
63-25-2 Carbaryl  
64-17-5 Ethyl alcohol  
64-18-6 Formic acid  
64-19-7 Acetic acid  
67-56-1 Methyl alcohol



**LOGAN  
DRILLING  
GROUP**

67-63-0 Isopropyl alcohol  
67-64-1 Acetone  
67-66-3 Chloroform  
67-72-1 Hexachloroethane  
68-11-1 Thioglycolic acid  
68-12-2 N,N-Dimethylformamide  
71-23-8 n-Propyl alcohol  
71-36-3 n-Butyl alcohol  
71-43-2 Benzene  
71-55-6 Methyl chloroform  
72-20-8 Endrin  
72-43-5 Methoxychlor  
74-82-8 Methane  
74-83-9 Methyl bromide  
74-84-0 Ethane  
74-85-1 Ethylene  
74-86-2 Acetylene  
74-87-3 Methyl chloride  
74-88-4 Methyl iodide  
74-89-5 Methylamine  
74-90-8 Hydrogen cyanide  
74-93-1 Methyl mercaptan  
74-96-4 Ethyl bromide  
74-97-5 Chlorobromomethane  
74-98-6 Propane





**LOGAN  
DRILLING  
GROUP**

74-99-7 Methyl acetylene  
75-00-3 Ethyl chloride  
75-01-4 Vinyl chloride  
75-04-7 Ethylamine  
75-05-8 Acetonitrile  
75-07-0 Acetaldehyde  
75-08-1 Ethyl mercaptan  
75-09-2 Methylene chloride  
75-12-7 Formamide  
75-15-0 Carbon disulfide  
75-21-8 Ethylene oxide  
75-25-2 Bromoform  
75-31-0 Isopropylamine  
75-34-3 1,1-Dichloroethane  
75-35-4 1,1-Dichloroethylene  
75-43-4 Dichlorofluoromethane  
75-44-5 Phosgene  
75-45-6 Chlorodifluoromethane  
75-47-8 Iodoform  
75-50-3 Trimethylamine  
75-52-5 Nitromethane  
75-55-8 Propylene imine  
75-56-9 Propylene oxide  
75-61-6 Difluorodibromomethane  
75-63-8 Bromotrifluoromethane  
75-65-0 tert-Butyl alcohol



**LOGAN  
DRILLING  
GROUP**

75-69-4 Trichlorofluoromethane  
75-71-8 Dichlorodifluoromethane  
75-74-1 Lead tetramethyl  
75-86-5 Acetone cyanohydrin  
75-99-0 2,2-Dichloropropionic acid  
76-03-9 Trichloroacetic acid  
76-06-2 Chloropicrin  
76-11-9 1,1,1,2-Tetrachloro-2,2-difluoroethane  
76-12-0 1,1,2,2-Tetrachloro-1, 2-difluoroethane  
76-13-1 1,1,2-Trichloro-1,2,2-trifluoroethane  
76-14-2 1,2-Dichloro-1,1,2,2-tetrafluoroethane  
76-15-3 Chloropentafluoroethane  
76-22-2 Camphor (synthetic)  
76-44-8 Heptachlor  
77-47-4 Hexachlorocyclopentadiene  
77-73-6 Dicyclopentadiene  
77-78-1 Dimethyl sulfate  
78-00-2 Lead tetraethyl  
78-10-4 Ethyl silicate  
78-30-8 Tri-o-cresyl phosphate  
78-34-2 Dioxathion  
78-59-1 Isophorone  
78-83-1 Isobutyl alcohol  
78-87-5 1,2-Dichloropropane  
78-92-2 sec-Butyl alcohol



**LOGAN  
DRILLING  
GROUP**

78-93-3 Methyl ethyl ketone (MEK)  
78-95-5 Chloroacetone  
79-00-5 1,1,2-Trichloroethane  
79-01-6 Trichloroethylene  
79-04-9 Chloroacetyl chloride  
79-06-1 Acrylamide  
79-09-4 Propionic acid  
79-10-7 Acrylic acid  
79-20-9 Methyl acetate  
79-24-3 Nitroethane  
79-27-6 1,1,2,2-Tetrabromoethane  
79-34-5 1,1,2,2-Tetrachloroethane  
79-41-4 Methacrylic acid  
79-44-7 Dimethyl carbamoyl chloride  
79-46-9 2-Nitropropane  
80-56-8 [α]-Pinene  
80-62-6 Methyl methacrylate (monomer)  
81-81-2 Warfarin  
82-68-8 Pentachloronitrobenzene  
83-26-1 Pindone  
83-79-4 Rotenone  
84-66-2 Diethyl phthalate  
84-74-2 Dibutyl phthalate  
85-44-9 Phthalic anhydride  
86-50-0 Azinphos-methyl  
86-88-4 ANTU ( $\alpha$ -Naphthylthiourea)



**LOGAN**  
**DRILLING**  
**GROUP**

87-68-3 Hexachlorobutadiene  
87-86-5 Pentachlorophenol  
88-72-2 Nitrotoluene  
88-89-1 Picric acid  
89-72-5 o-sec-Butylphenol  
90-04-0 o-Anisidine  
91-20-3 Naphthalene  
91-59-8  $\beta$ -Naphthylamine  
91-94-1 3,3'-Dichlorobenzidine  
92-52-4 Biphenyl  
92-67-1 4-Aminodiphenyl  
92-84-2 Phenothiazine  
92-87-5 Benzidine (production)  
92-93-3 4-Nitrodiphenyl  
93-76-5 2,4,5-T  
94-36-0 Benzoyl peroxide  
94-75-7 2,4-D  
95-13-6 Indene  
95-47-6 Xylene  
95-49-8 o-Chlorotoluene  
95-50-1 o-Dichlorobenzene  
95-53-4 o-Toluidine  
95-54-5 ortho-Phenylenediamine  
96-18-4 1,2,3-Trichloropropane  
96-22-0 Diethyl ketone





**LOGAN  
DRILLING  
GROUP**

96-33-3 Methyl acrylate  
96-69-5 4,4'-Thiobis (6-tert-butyl-m-cresol)  
97-77-8 Disulfiram  
98-00-0 Furfuryl alcohol  
98-01-1 Furfural  
98-51-1 p-tert-Butyltoluene  
98-82-8 Cumene  
98-83-9  $\alpha$ Methyl styrene  
98-86-2 Acetophenone  
98-95-3 Nitrobenzene  
99-08-1 Nitrotoluene  
99-65-0 Dinitrobenzene  
99-99-0 Nitrotoluene  
100-00-5 p-Nitrochlorobenzene  
100-01-6 p-Nitroaniline  
100-21-0 Terephthalic acid  
100-25-4 Dinitrobenzene  
100-37-8 2-Diethylaminoethanol  
100-41-4 Ethyl benzene  
100-42-5 Styrene (monomer)  
100-44-7 Benzyl chloride  
100-61-8 N-Methylaniline  
100-63-0 Phenylhydrazine  
100-74-3 N-Ethylmorpholine  
101-14-4 4,4'-Methylene bis (2-chloroaniline) (MOCA)  
101-68-8 Methylene bis (4-phenyl isocyanate) (MDI)



**LOGAN  
DRILLING  
GROUP**

101-77-9 4,4'-Methylene dianiline  
101-84-8 Phenyl ether, vapour  
102-54-5 Dicyclopentadienyl iron  
102-71-6 Triethanolamine  
102-81-8 2-N-Dibutylaminoethanol  
104-94-9 p-Anisidine  
105-46-4 sec-Butyl acetate  
105-60-2 Caprolactam  
106-35-4 Ethyl butyl ketone  
106-42-3 Xylene  
106-46-7 p-Dichlorobenzene  
106-49-0 p-Toluidine  
106-50-3 p-Phenylenediamine  
106-51-4 p-Benzoquinone  
106-87-6 Vinyl cyclohexene dioxide  
106-89-8 Epichlorohydrin  
106-92-3 Allyl glycidyl ether (AGE)  
106-93-4 1,2-Dibromoethane  
106-97-8 Butane  
106-99-0 1,3-Butadiene  
107-02-8 Acrolein  
107-05-1 3-Chloropropene  
107-06-2 1,2-Dichloroethane  
107-07-3 Ethylene chlorohydrin  
107-13-1 Acrylonitrile



**LOGAN  
DRILLING  
GROUP**

107-15-3 Ethylenediamine  
107-18-6 Allyl alcohol  
107-19-7 Propargyl alcohol  
107-20-0 Chloroacetaldehyde  
107-21-1 Ethylene glycol  
107-30-2 Chloromethyl methyl ether  
107-31-3 Methyl formate  
107-41-5 Hexylene glycol  
107-49-3 TEPP  
107-66-4 Dibutyl phosphate  
107-87-9 Methyl propyl ketone  
107-98-2 Propylene glycol monomethyl ether  
108-03-2 1-Nitropropane  
108-05-4 Vinyl acetate  
108-10-1 Methyl isobutyl ketone  
108-11-2 Methyl amyl alcohol  
108-18-9 Diisopropylamine  
108-20-3 Diisopropyl ether  
108-21-4 Isopropyl acetate  
108-24-7 Acetic anhydride  
108-31-6 Maleic anhydride  
108-38-3 Xylene  
108-44-1 m-Toluidine  
108-45-2 meta-Phenylenediamine  
108-46-3 Resorcinol  
108-83-8 Diisobutyl ketone



**LOGAN  
DRILLING  
GROUP**

108-84-9 sec-Hexyl acetate  
108-87-2 Methylcyclohexane  
108-88-3 Toluene  
108-90-7 Chlorobenzene  
108-91-8 Cyclohexylamine  
108-93-0 Cyclohexanol  
108-94-1 Cyclohexanone  
108-95-2 Phenol  
108-98-5 Phenyl mercaptan  
109-59-1 Isopropoxyethanol  
109-60-4 n-Propyl acetate  
109-66-0 n-Pentane  
109-73-9 n-Butylamine  
109-79-5 Butyl mercaptan  
109-86-4 2-Methoxyethanol (EGM  
E)109-87-5 Methylal  
109-89-7 Diethylamine  
109-94-4 Ethyl formate  
109-99-9 Tetrahydrofuran  
110-12-3 Methyl isoamyl ketone  
110-19-0 Isobutyl acetate  
110-43-0 Methyl n-amyl ketone  
110-49-6 2-Methoxyethyl acetate (EGMEA)  
110-54-3 n-Hexane  
110-62-3 n-Valeraldehyde





**LOGAN**  
**DRILLING**  
**GROUP**

110-80-5 2-Ethoxyethanol (EGEE)  
110-82-7 Cyclohexane  
110-83-8 Cyclohexene  
110-86-1 Pyridine  
110-91-8 Morpholine  
111-15-9 2-Ethoxyethyl acetate (EGEEA)  
111-30-8 Glutaraldehyde  
111-40-0 Diethylene triamine  
111-42-2 Diethanolamine  
111-44-4 Dichloroethyl ether  
111-65-9 Octane  
111-69-3 Adiponitrile  
111-76-2 2-Butoxyethanol  
111-84-2 Nonane  
114-26-1 Propoxur  
115-07-1 Propylene  
115-29-7 Endosulfan  
115-77-5 Pentaerythritol  
115-86-6 Triphenyl phosphate  
115-90-2 Fensulfothion  
117-81-7 Di-sec-octyl phthalate  
118-52-5 1,3-Dichloro-5,5-dimethyl hydantoin  
118-74-1 Hexachlorobenzene  
118-96-7 2,4,6-Trinitrotoluene (TNT)  
119-93-7 o-Tolidine  
120-80-9 Catechol



**LOGAN  
DRILLING  
GROUP**

120-82-1 1,2,4-Trichlorobenzene  
121-44-8 Triethylamine  
121-45-9 Trimethyl phosphite  
121-69-7 N,N-Dimethylaniline  
121-75-5 Malathion  
121-82-4 Cyclonite  
122-39-4 Diphenylamine  
122-60-1 Phenyl glycidyl ether (PGE)  
123-31-9 Hydroquinone  
123-42-2 Diacetone alcohol  
123-51-3 Isoamyl alcohol  
123-86-4 n-Butyl acetate  
123-91-1 Dioxane  
123-92-2 Isoamyl acetate  
124-04-9 Adipic acid  
124-09-4 1,6-Diaminohexane  
124-38-9 Carbon dioxide  
124-40-3 Dimethylamine  
126-73-8 Tributyl phosphate  
126-98-7 Methylacrylonitrile  
126-99-8  $\beta$ -Chloroprene  
127-18-4 Perchloroethylene  
127-19-5 N,N-Dimethylacetamide  
127-91-3  $\beta$ -Pinene  
128-37-0 2,6-Di-tert-butyl-p-cresol



**LOGAN  
DRILLING  
GROUP**

131-11-3 Dimethylphthalate  
133-06-2 Captan  
135-88-6 N-Phenyl- $\beta$ -naphthylamine  
136-78-7 Sesone  
137-05-3 Methyl 2-cyanoacrylate  
137-26-8 Thiram  
138-22-7 n-Butyl lactate  
140-88-5 Ethyl acrylate  
141-32-2 n-Butyl acrylate  
141-43-5 2-Aminoethanol  
141-66-2 Dicrotophos  
141-78-6 Ethyl acetate  
141-79-7 Mesityl oxide  
142-64-3 Piperazine dihydrochloride  
142-82-5 n-Heptane  
144-62-7 Oxalic acid  
148-01-6 Dinitolmide  
150-76-5 4-Methoxyphenol  
151-56-4 Ethylene imine  
151-67-7 Halothane  
156-62-7 Calcium cyanamide  
205-99-2 Benzo(b)fluoranthene  
218-01-9 Chrysene  
231-36-7 Diquat  
287-92-3 Cyclopentane  
298-00-0 Methyl parathion



**LOGAN  
DRILLING  
GROUP**

298-02-2 Phorate  
298-04-4 Disulfoton  
299-84-3 Ronnel  
299-86-5 Crufomate7  
300-76-5 Naled  
302-01-2 Hydrazine  
309-00-2 Aldrin  
314-40-9 Bromacil  
330-54-1 Diuron  
333-41-5 Diazinon7  
334-88-3 Diazomethane  
353-50-4 Carbonyl fluoride  
382-21-8 Perfluoroisobutylene  
409-21-2 Silicon carbide (non fibrous)  
420-04-2 Cyanamide  
460-19-5 Cyanogen  
463-51-4 Ketene  
471-34-1 Calcium carbonate  
479-45-8 Tetryl  
504-29-0 2-Aminopyridine  
506-77-4 Cyanogen chloride  
509-14-8 Tetranitromethane  
528-29-0 Dinitrobenzene  
532-27-4  $\alpha$ Chloroacetophenone  
534-52-1 Dinitro-ortho-cresol





**LOGAN  
DRILLING  
GROUP**

540-59-0 1,2-Dichloroethylene  
540-88-5 tert-Butyl acetate  
541-85-5 Ethyl amyl ketone  
542-75-6 Dichloropropene (cis and trans isomers)  
542-88-1 bis (Chloromethyl) ether  
542-92-7 Cyclopentadiene  
546-93-0 Magnesite  
552-30-7 Trimellitic anhydride  
556-52-5 Glycidol  
557-05-1 Zinc stearate  
558-13-4 Carbon tetrabromide  
563-12-2 Ethion  
563-80-4 Methyl isopropyl ketone  
583-60-8 o-Methylcyclohexanone  
591-78-6 Methyl n-butyl ketone  
593-60-2 Vinyl bromide  
594-42-3 Perchloromethyl mercaptan  
594-72-9 1,1-Dichloro-1-nitroethane  
598-78-7 2-Chloropropionic acid  
600-25-9 1-Chloro-1-nitropropane  
603-34-9 Triphenyl amine  
620-11-1 3-Pentyl acetate  
624-41-9 2 Methy-1l, 1-butyl acetate  
624-83-9 Methyl isocyanate  
625-16-1 tert-amyl acetate  
626-17-5 m-Phthalodinitrile



**LOGAN  
DRILLING  
GROUP**

626-38-0 sec-Amyl acetate  
627-13-4 n-Propyl nitrate  
628-63-7 n-Amyl acetate  
628-96-6 Ethylene glycol dinitrate  
630-08-0 Carbon monoxide  
638-21-1 Phenylphosphine  
638-37-9 Succinaldehyde  
680-31-9 Hexamethyl phosphoramidate  
681-84-5 Methyl silicate  
684-16-2 Hexafluoroacetone  
764-41-0 1,4-Dichloro-2-butene  
768-52-5 N-Isopropylaniline  
822-06-0 Hexamethylene diisocyanate  
944-22-9 Fonofos  
999-61-1 2-Hydroxypropyl acrylate  
1024-57-3 Heptachlor epoxide  
1120-71-4 Propane sultone  
1189-85-1 tert-Butyl chromate  
1300-73-8 Xylidine (mixed isomers)  
1302-74-5 Corundum  
1303-86-2 Boron oxide  
1303-96-4 Sodium tetraborate, decahydrate  
1304-82-1 Bismuth telluride Undoped  
1305-62-0 Calcium hydroxide  
1305-78-8 Calcium oxide



**LOGAN  
DRILLING  
GROUP**

1309-37-1 Iron trioxide  
1309-48-4 Magnesium oxide  
1309-64-4 Antimony trioxide  
1310-58-3 Potassium hydroxide  
1310-73-2 Sodium hydroxide  
1314-13-2 Zinc, oxide  
1314-62-1 Vanadium pentoxide  
1314-80-3 Phosphorus pentasulfide  
1317-35-7 Manganese tetroxide  
1317-65-3 Limestone  
1317-95-9 Silica - Crystalline, Tripoli  
1319-77-3 Cresol (all isomers)  
1321-12-6 Nitrotoluene  
1321-64-8 Pentachloronaphthalene  
1321-65-9 Trichloronaphthalene  
1321-74-0 Divinyl benzene  
1327-53-3 Arsenic trioxide  
1330-20-7 Xylene  
1330-43-4 Sodium tetraborate, anhydrous  
1332-58-7 Kaolin  
1333-74-0 Hydrogen  
1333-86-4 Carbon black  
1335-87-1 Hexachloronaphthalene  
1335-88-2 Tetrachloronaphthalene  
1338-23-4 Methyl ethyl ketone peroxide  
1343-98-2 Silica - Amorphous, precipitated



**LOGAN  
DRILLING  
GROUP**

1344-28-1 Aluminum oxide  
1344-95-2 Calcium silicate (synthetic)  
1395-21-7 Subtilisin  
1477-55-0 m-Xylene- $\alpha, \alpha'$ -diamine  
1563-66-2 Carbofuran  
1634-04-4 Methyl tert-butyl ether  
1912-24-9 Atrazine  
1918-02-1 Picloram  
1929-82-4 Nitrapyrin  
2039-87-4 o-Chlorostyrene  
2104-64-5 EPN  
2179-59-1 Allyl propyl disulfide  
2234-13-1 Octachloronaphthalene  
2238-07-5 Diglycidyl ether (DGE)  
2425-06-1 Captafol  
2426-08-6 n-Butyl glycidyl ether (BGE)  
2451-62-9 Triglycidyl isocyanurate (TGIC) (mixed isomers)  
2528-36-1 Dibutyl phenyl phosphate  
2551-62-4 Sulfur hexafluoride  
2698-41-1 o-Chlorobenzylidene malononitrile  
2699-79-8 Sulfuryl fluoride  
2921-88-2 Chlorpyrifos  
2971-90-6 Clopidol  
3333-52-6 Tetramethyl succinonitrile  
3383-96-8 Temephos





**LOGAN  
DRILLING  
GROUP**

3687-31-8 Lead arsenate  
3689-24-5 Sulfotep  
3825-26-1 Ammonium perfluorooctanoate  
4016-14-2 Isopropyl glycidyl ether (IGE)  
4098-71-9 Isophorone diisocyanate  
4170-30-3 Crotonaldehyde  
4685-14-7 Paraquat, respirable particulates  
5124-30-1 Methylene bis (4-cyclohexylisocyanate)  
5714-22-7 Sulfur pentafluoride  
6423-43-4 Propylene glycol dinitrate  
6923-22-4 Monocrotophos  
7429-90-5 Aluminum  
7439-92-1 Lead  
7439-96-5 Manganese  
7439-97-6 Mercury  
7439-98-7 Molybdenum  
7440-01-9 Neon  
7440-02-0 Nickel  
7440-06-4 Platinum  
7440-16-6 Rhodium  
7440-21-3 Silicon  
7440-22-4 Silver  
7440-25-7 Tantalum  
7440-28-0 Thallium  
7440-31-5 Tin  
7440-33-7 Tungsten



**LOGAN  
DRILLING  
GROUP**

7440-36-0 Antimony  
7440-37-1 Argon  
7440-38-2 Arsenic  
7440-39-3 Barium  
7440-41-7 Beryllium  
7440-43-9 Cadmium  
7440-47-3 Chromium  
7440-48-4 Cobalt  
7440-50-8 Copper  
7440-58-6 Hafnium  
7440-59-7 Helium  
7440-61-1 Uranium  
7440-65-5 Yttrium  
7440-67-7 Zirconium  
7440-74-6 Indium  
7446-09-5 Sulfur dioxide  
7553-56-2 Iodine  
7572-29-4 Dichloroacetylene  
7580-67-8 Lithium hydride  
7616-94-6 Perchloryl fluoride  
7631-90-5 Sodium bisulfite  
7637-07-2 Boron trifluoride  
7646-85-7 Zinc chloride  
7647-01-0 Hydrogen chloride  
7664-38-2 Phosphoric acid



**LOGAN  
DRILLING  
GROUP**

7664-39-3 Hydrogen fluoride  
7664-41-7 Ammonia  
7664-93-9 Sulfuric acid  
7681-57-4 Sodium metabisulfite  
7697-37-2 Nitric acid  
7719-09-7 Thionyl chloride  
7719-12-2 Phosphorus trichloride  
7722-84-1 Hydrogen peroxide  
7722-88-5 Tetrasodium pyrophosphate  
7723-14-0 Phosphorus (yellow)  
7726-95-6 Bromine  
7727-37-9 Nitrogen  
7727-43-7 Barium sulfate  
7758-97-6 Lead chromate  
7773-06-0 Ammonium sulfamate  
7778-18-9 Calcium sulfate  
7782-41-4 Fluorine  
7782-42-5 Graphite (all forms except fibres)  
7782-49-2 Selenium  
7782-50-5 Chlorine  
7782-65-2 Germanium tetrahydride  
7783-06-4 Hydrogen sulfide  
7783-07-5 Hydrogen selenide  
7783-41-7 Oxygen difluoride  
7783-54-2 Nitrogen trifluoride  
7783-60-0 Sulfur tetrafluoride



**LOGAN  
DRILLING  
GROUP**

7783-79-1 Selenium hexafluoride  
7783-80-4 Tellurium hexafluoride  
7784-42-1 Arsine  
7786-34-7 Phosdrin  
7789-06-2 Strontium chromate  
7789-30-2 Bromine pentafluoride  
7790-91-2 Chlorine trifluoride  
7803-51-2 Phosphine  
7803-52-3 Stibine  
7803-62-5 Silicon tetrahydride  
8001-35-2 Chlorinated camphene  
8002-74-2 Paraffin wax  
8003-34-7 Pyrethrum  
8006-61-9 Gasoline  
8006-64-2 Turpentine  
8022-00-2 Methyl demeton  
8030-30-6 Rubber solvent (Naphtha)  
8032-32-4 VM&P Naphtha  
8050-09-7 Rosin  
8052-41-3 Stoddard solvent  
8052-42-4 Asphalt (petroleum)  
8065-48-3 Demeton7  
9002-84-0 Polytetrafluoroethylene  
9004-34-6 Cellulose (paper fibres)  
9005-25-8 Starch





**LOGAN  
DRILLING  
GROUP**

9014-01-1 Subtilisin  
10024-97-2 Nitrous oxide  
10025-67-9 Sulfur monochloride  
10025-87-3 Phosphorus oxychloride  
10026-13-8 Phosphorus pentachloride  
10028-15-6 Ozone  
10035-10-6 Hydrogen bromide  
10049-04-4 Chlorine dioxide  
10102-43-9 Nitrogen monoxide  
10102-44-0 Nitrogen dioxide  
10210-68-1 Cobalt tetracarbonyl  
10294-33-4 Boron tribromide  
11097-69-1 Chlorodiphenyl (54% chlorine)  
11103-86-9 Zinc chromate  
12001-26-2 Mica  
12001-28-4 Asbestos Crocidolite  
12001-29-5 Asbestos Chrysotile  
12045-88-4 Sodium tetraborate, pentahydrate  
12079-65-1 Manganese cyclopentadienyl tricarbonyl  
12108-13-3 Manganese methyl cyclopentadienyl  
tricarbonyl  
12125-02-9 Ammonium chloride  
12172-67-7 Asbestos Actinolite  
12172-73-5 Asbestos Amosite  
12174-11-7 Fibres-Natural Mineral Fibres Attapulgit  
12415-34-8 Emery



**LOGAN  
DRILLING  
GROUP**

12604-58-9 Ferrovandium (dust)  
13121-70-5 Cyhexatin  
13397-24-5 Gypsum  
13463-39-3 Nickel carbonyl  
13463-40-6 Iron pentacarbonyl  
13463-67-7 Titanium dioxide  
13466-78-9  $\Delta$ -3 Carene  
13494-80-9 Tellurium  
13530-65-9 Zinc chromate  
13765-19-0 Calcium chromate  
13838-16-9 Enflurane  
13983-17-0 Fibres-Natural Mineral Fibres Wollastonite  
14378-12-2 Soapstone  
14464-46-1 Silica - Crystalline, Cristobalite  
14484-64-1 Ferbam  
14567-73-8 Asbestos Tremolite  
14807-96-6 Talc, non fibrous  
14808-60-7 Silica - Crystalline, Quartz  
14977-61-8 Chromyl chloride  
15468-32-3 Silica - Crystalline, Tridymite  
16219-75-3 Ethylidene norbornene  
16752-77-5 Methomyl  
16842-03-8 Cobalt hydrocarbonyl  
17068-78-9 Asbestos Anthophyllite  
17702-41-9 Decaborane



**LOGAN  
DRILLING  
GROUP**

17804-35-2 Benomyl  
19287-45-7 Diborane  
19624-22-7 Pentaborane  
20816-12-0 Osmium tetroxide  
21087-64-9 Metribuzin  
21351-79-1 Cesium hydroxide  
22224-92-6 Fenamiphos  
25013-15-4 Vinyl toluene  
25154-54-4 Dinitrobenzene  
25321-14-6 Dinitrotoluene  
25551-13-7 Trimethyl benzene  
25639-42-3 Methylcyclohexanol  
26140-60-3 Terphenyls  
26471-62-5 Toluene diisocyanate (TDI) (isomers mixture)  
26499-65-0 Plaster of Paris  
26628-22-8 Sodium azide  
26952-21-6 Isooctyl alcohol  
34590-94-8 Dipropylene glycol monomethyl ether  
35400-43-2 Sulprofos  
37300-23-5 Zinc chromate  
53469-21-9 Chlorodiphenyl (42% chlorine)  
53570-85-7 Coal dust (less than 5 % crystalline silica)  
55720-99-5 Chlorinated diphenyl oxide  
59355-75-8 Methyl acetylene-propadiene mixture (MAPP)  
59653-73-5 Triglycidyl isocyanurate (TGIC) (alpha-)  
59653-74-6 Triglycidyl isocyanurate (TGIC) (beta-)



**LOGAN  
DRILLING  
GROUP**

- 60676-86-0 Silica - Crystalline, fused
- 61788-32-7 Hydrogenated terphenyls
- 61790-53-2 Silica - Amorphous, Diatomaceous earth  
(uncalcined)
- 63231-67-4 Silica - Amorphous, gel
- 65996-93-2 Coal tar pitch volatiles, as benzene solubles
- 65997-15-1 Portland cement
- 66733-21-9 Fibres-Natural Mineral Fibres Erionite
- 68476-85-7 L.P.G. (Liquified petroleum gas)
- 68956-68-3 Vegetable oil
- 69012-64-2 Silica - Amorphous, fumes
- 74222-97-2 Sulfometuron methyl
- 83969-76-0 Perlite
- 112926-00-8 Silica - Amorphous, gel

O.C. 885-2001, Sch. I; O.C. 1120-2006, s. 11 and 12; O.C. 915-2011, s. 2 and 3; O.C. 1079-2012, s. 1.

**SCHEDULE II**

LIST OF DANGEROUS SUBSTANCES BY CATEGORY

substances	Categories of dangerous		
Dangerous corrosives substances reactive	inflammables dangerously and combustibles	oxidants	toxic





**LOGAN  
DRILLING  
GROUP**

Acetates, organic	x	
<hr/>		
Acids, mineral x (concentrated)		
<hr/>		
Acids, organic	x	
<hr/>		
Activated charcoal	x	
<hr/>		
Air, compressed		x
<hr/>		
Alcohols	x	
<hr/>		
Aldehydes	x	
<hr/>		
Alkali metals	x	
<hr/>		
Allyl compounds		x
<hr/>		
Amines	x	
<hr/>		
Ammonium dichromate	x	
<hr/>		
Ammonium nitrate x		
<hr/>		
Ammonium persulphate x		
<hr/>		
Anhydrides	x	
<hr/>		
Antimony	x	



**LOGAN  
DRILLING  
GROUP**

pentasulphide

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Arsenic compounds x

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Bags and sacks x  
having  
contained nitrates,  
sugar or oily  
materials

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Benzoates x

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Bitumen x

---

Blasting powders  
x

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Bone oil x

---

Bromates x

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Bromides (organic) x x

---

Bromine x

---

Camphor x

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Carbon black  
(lampblack) x

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Castor oil x

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China wood oil  
(tung oil) x



**LOGAN  
DRILLING  
GROUP**

Chlorates		x	
Chlorinated hydrocarbons			x
Chlorine		x	
Chloroethane			x
Chorites		x	
Coal tar	x		
Coconut oil, refined	x		
Cod liver oil	x		
Corn oil (Maize oil)	x		
Cottonseed oil	x		
Cresols			x
Cyanides x			x
Cyanogen compounds			x
Ethers	x		x
Feeds, various	x		



**LOGAN  
DRILLING  
GROUP**

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Fibres, vegetable (jute, kapok, sisal, etc)	x		
Fish scraps	x		
Fluorides, inorganic			x
Fluorine		x	
Fluosulphonic acid			x
Formaldehyde solution	x		x
Fulminates x			
Fumigating substances, various	x		x
Hydrazine x			
Hydrides	x		
Hydrocarbons	x		
Hydroxylamine	x		
Hypophosphites	x		

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**LOGAN  
DRILLING  
GROUP**

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Insecticides (when dissolved in an inflammable or combustible liquid)	x	x
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Iodates	x
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Iron sponge	x
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Lanolin	x
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Lard oil	x
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Lead compounds	x
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Linseed oil	x
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Lubricating oil	x
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Matches, strike-anywhere	x
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Menhaden oil	x
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Mercury compounds	x
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Metal powders (finely divided)	x
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Methyl cyanaformate	x
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Methyl fluoroformate	x
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**LOGAN  
DRILLING  
GROUP**

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Neatsfoot oil	x	
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Nitrates, inorganic		x
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Nitrites, inorganic		x
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Nitrogen chloride	x	
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Nitrogen dioxide		
x		

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Oil: oiled clothing, fabrics, rags or silk soaked in	x	
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Olive oil	x	
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Organic chlorides	x	x
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Paint containing drying oils	x	
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Paint scrapings	x	
-----------------	---	--

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Palm kernal oil	x	
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Palm oil	x	
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Paraffin oil	x	
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Paraffin wax	x	
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**LOGAN  
DRILLING  
GROUP**

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Peanut oil	x	
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Perborates		x
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Perchlorates		x
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Perilla oil	x	
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Permanganates		x
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Peroxides, inorganic		x
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Peroxides, organic	x	x
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Persulfates		x
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Phenol	x	
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Phenolsulphonic acid		x
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Phosphides	x	
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Phosphorous pentachloride	x	
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Picrates		
x		

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Pine tar oil	x	
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**LOGAN  
DRILLING  
GROUP**

Potassium  
x  
perchlorate

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Rags, oily x

---

Resinates x

---

Rubber reclaimed x

---

Rubber scrap x

---

Rust preventing  
x  
compounds

---

Sawdust x

---

Seeds x

---

Selenium compounds x

---

Sodium amalgam x

---

Sodium azide x  
x

---

Sodium perchlorate  
x

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Soya bean oil x

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Sperm oil x

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**LOGAN  
DRILLING  
GROUP**

Sugar beet (dry)	x
Sulfides	x
Tallow	x
Tallow oil	x
Tetraethyl lead	x
Whale oil	x
Woodwool	x
Wool wadding	x

O.C. 885-2001, Sch. II.

**SCHEDULE III**

(s. 103)

**MINIMUM RATE OF AIR CHANGE PER HOUR**

**Table 1**

**AVERAGE GENERAL VENTILATION**

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*Classification of establishments*

*Minimum rate of air*

*change per hour*

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**Food and beverages**



**LOGAN  
DRILLING  
GROUP**

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Slaughterhouses and drysalting

2

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Mineral oil and fats factories

3

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Sausage and sausage casing manufacturing

2

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Poultry processing

2

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---

Milk concentrate manufacturing

2

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---

Fish processing

2

---

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Preparation and canning of fruit and vegetables

2



**LOGAN  
DRILLING  
GROUP**

Biscuit manufacturing

2

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Bakeries

2

---

---

Confectioneries

2

---

---

Vegetable oil mills

2

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Distilleries

2

---

---

Breweries (Beer breweries)

2

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Wine manufacturing

2

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**Tobacco products**

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Leaf-tobacco processing

2



**LOGAN  
DRILLING  
GROUP**

---

---

Tobacco products manufacturing  
2

---

**Rubber**

---

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Rubber footwear manufacturing  
3

---

---

Tire and tube manufacturing  
3

---

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Other rubber industries  
3

---

**Leather**

---

---

Tanneries  
3

---

---

Shoe factories  
2

---

**Textiles**





**LOGAN  
DRILLING  
GROUP**

---

---

Cotton yarn and cloth mills  
2

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---

Wool yarn mills  
2

---

---

Wool cloth mills  
2

---

---

Synthetic textile mills  
2

---

---

Fiber preparation mills  
5

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---

Thread mills  
5

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---

Cordage and twine industry  
5

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**LOGAN  
DRILLING  
GROUP**

Carpet, mat and rug industry

2

---

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Textile dyeing and finishing

3

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---

Linoleum and coated fabrics industry

4

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**Garages**

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Garage for maintenance and repair

4

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Garage for parking and storage  
- with permanent employees

3

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---

- without permanent employees

2

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**Wood**

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---

Shingle plants

2



**LOGAN  
DRILLING  
GROUP**

---

---

Sawmills

2

---

---

Veneer and plywood mills

2

---

---

Sash, door and other millwood plants (excluding  
hardwood  
flooring manufacturing)

2

---

---

Coffin and casket industry

2

---

---

Wood processing industry

2

---

---

**Furniture and fixtures**

---

---

Household furniture industry

2

---

---

**Paper and related products**

---

---



**LOGAN  
DRILLING  
GROUP**

Pulp and paper mills  
2

---

---

Manufacturing of asphalt roofing paper  
3

---

---

Paper box and bag manufacturing  
2

---

**Metal products**

---

---

Metal fabricating industries  
4

---

---

Miscellaneous machinery manufacturing  
2

---

---

Electrical appliance manufacturing  
2

---

---

Cell and battery manufacturing  
4

---

**Non-metallic products**





**LOGAN  
DRILLING  
GROUP**

---

---

Cement industry  
3

---

---

Lime industry  
3

---

---

Gypsum products manufacturing  
3

---

---

Concrete products manufacturing  
2

---

---

Reinforced concrete industry  
2

---

---

Clay products manufacturing (domestic clay)  
2

---

---

Refractory products manufacturing  
4

---

---



**LOGAN  
DRILLING  
GROUP**

Stone products manufacturing

4

---

---

Asbestos products manufacturing

6

---

---

Glass and glass products manufacturing

4

---

---

Abrasive industry

4

---

---

**Chemicals**

---

---

Explosives and ammunition manufacturing

3

---

---

Mixed fertilizers manufacturing

2

---

---

Plastics and synthetic resins industry

3

---

---

Pharmaceuticals and medical products industry

2



**LOGAN  
DRILLING  
GROUP**

---

Paints and varnish industry  
4

---

Maintenance products manufacturing  
3

---

Industrial chemical products manufacturing  
2

---

**Warehouses: See Table III of this Schedule.**

---

**Any other class of establishment not appearing in this Table or in Table II of this Schedule**  
1

The number of air changes per hour listed in this Table may be converted into cfm/ft<sup>2</sup> by using the following formula:

$$\text{ft}^3/\text{min.} = \text{Air change/hour} \times [12\text{ft} + \text{height of work level in feet (ref. main floor)}]$$

---

$$\frac{\text{ft}^2}{60 \text{ min./hour}}$$

or to m<sup>3</sup>/h/m<sup>2</sup> by using the following formula:

$$\text{m}^3/\text{h} = \text{Air change/hour} \times [3.6\text{m} + \text{height of work level in metres (ref. main floor)}]$$

---

$$\text{m}^2$$

**Table 2**

RATE OF AIR CHANGE PER HOUR FOR CERTAIN CLASSES OF ESTABLISHMENT



**LOGAN  
DRILLING  
GROUP**

Classification of establishment	Total ventilation area		Fresh air pressure
	Unrefrigerated or unrefrigerated spaces (l./s./pers.)	Refrigerated spaces (l./s./pers.)	
Commercial negative pressure and industrial laundry not exceeding 5 Pa	9.4	not applicable	2.4
Office not applicable	7.1	45	2.4
Laboratory* negative pressure not exceeding 5 Pa	7.1	45	2.4

Where gases, fumes, vapours, dusts or are mists emitted in an establishment listed in this Table, the minimum rates of air change per hour must be increased so that the standards prescribed in Schedule 1 are complied with.

\* To compute total ventilation air and fresh air, the occupancy rate must be one person per 10 m<sup>2</sup> for laundries and offices and one person per 5 m<sup>2</sup> for laboratories.





**LOGAN  
DRILLING  
GROUP**

### Table 3

#### VENTILATION IN WAREHOUSES WHERE INTERNAL COMBUSTION VEHICLES ARE OPERATED

The ventilation rate per vehicle must be computed as follows:

$$Q = K \times (U/50 \%) \times (P/45kW) \times [2 - (V/4250m^3)]$$

where:

Q = air flow in m<sup>3</sup>/h prescribed per vehicle

K = ventilation constant, namely 8 500 m<sup>3</sup>/h per propane or diesel-powered vehicle, 13,500 m<sup>3</sup>/h per gas-powered vehicle

P = power of the engine in kilowatts

V = volume of space available in m<sup>3</sup> per vehicle

U = percentage (%) of use of the vehicle during a work shift.

#### Notes:

(1) if the percentage (U) of use of the vehicle or the power (P) of the engine is less than 50% or 45 KW respectively, these factors must be omitted in the formula which then must read as follows:

$$Q = K \times [2 - (V/4250m^3)]$$

(2) for the purposes of applying this Table, the volume of space available is equal to the total volume of the warehouse minus the volume occupied by the merchandise;

(3) if the volume available exceeds 4,250 m<sup>3</sup>, the formula does not apply and the minimum air supply is 8,500 m<sup>3</sup>/h per propane or diesel-powered vehicle and 13,500 m<sup>3</sup>/h per gas-powered vehicle.

O.C. 885-2001, Sch. III.

### SCHEDULE IV

(s. 117)

STANDARDS OF TEMPERATURE IN ESTABLISHMENTS

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**LOGAN  
DRILLING  
GROUP**

## Nature of work performed

### Minimum temperature

#### required

---

light work performed while sitting, especially mental  
20 °C  
work, precision work, or which requires reading or  
writing

---

light physical work performed while sitting, electric  
machine 19 °C  
sewing and work with small machine tools

---

light work performed while standing, especially machine  
tool 17 °C  
work

---

moderate work performed while standing, assembly and  
trimming 16 °C

---

heavy work performed while standing, drilling and manual  
work 12 °C  
with heavy tools

---

O.C. 885-2001, Sch. VI.

## SCHEDULE V

(s. 121, 122, 123 and 124)

### EVALUATION OF HEAT STRESS

Wet Bulb-Globe Temperature Index (WBGT) is computed by using the following equations:

(a) outdoors with solar load:

$$\text{WBGT} = 0.7 \text{ WB} + 0.2 \text{ GT} + 0.1 \text{ DB}$$

(b) indoors or outdoors with no solar load:



**LOGAN  
DRILLING  
GROUP**

$$WBGT = 0.7 WB + 0.3 GT$$

where:

WB = natural wet-bulb temperature

DB = dry-bulb temperature

GT = globe thermometer temperature

To determine WBGT, the instruments required are a black globe thermometer, a natural (static) wet-bulb thermometer and a dry-bulb thermometer.

Exposure to temperatures in excess of those in Table 1 is permitted under the following conditions: the worker must be under medical supervision and it must be proven that his tolerance for working in heat is greater than that of the average worker.

**Table 1**

PERMISSIBLE HEAT EXPOSURE LIMIT VALUES, IN °C (WBGT °C (WBGT)

<b>Alternate Regimen</b>		
<b>Work load</b>		
<b>work/rest</b>		<b>light work</b>
<b>moderate work</b>	<b>heavy work</b>	
Continuous work 26.7	25.0	30.0
Work 75%, rest 25% (every hour) 28.0	25.9	30.6
Work 50%, rest 50% (every hour) 29.4	27.9	31.4

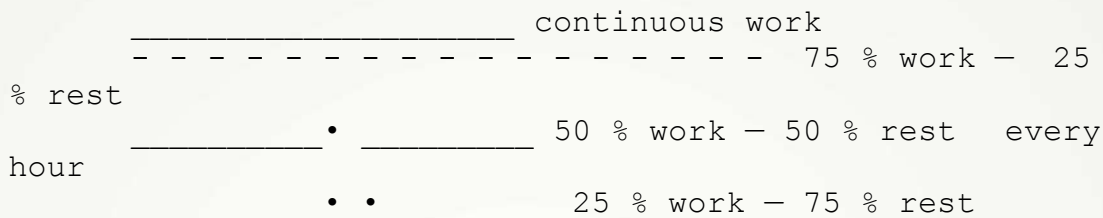


Work 25%, rest 75% (every hour)	32.2
31.1                      30.0	

---

### Chart

#### PERMISSIBLE HEAT EXPOSURE VALUES



### Method of measurement

WBGT values are measured as follows:

(1) The range of the dry and the natural wet bulb thermometer must be between -50 °C and +50 °C, with an accuracy of ± 0.5 °C. The dry bulb thermometer must be shielded from the sun and other radiant surfaces without restricting the airflow around the bulb. The wick of the natural wet bulb thermometer must be kept wet with distilled water for at least 30 minutes before the temperature reading is made. It is not enough to immerse an end of the wick into a reservoir of distilled water and wait until the wick becomes wet by capillarity; the wick must be wetted by direct application of water from a syringe one-half hour before each reading. The wick must extend over the bulb of the thermometer, covering the stem about one additional bulb length. The wick should always be clean, and new wicks should be washed before being used.

(2) A globe thermometer, consisting of a 15-centimetre diameter hollow copper sphere painted on the outside with a matte black finish or equivalent, must be used. The bulb or sensor of the thermometer (range: -5 °C to +100 °C; accuracy: ± 0.5 °C) must be set at the centre of the sphere. The globe thermometer must be exposed at least 25 minutes before it is read.

(3) A stand must be used to suspend the 3 thermometers so that they do not restrict free air flow around the bulbs, and so that there is no obstacle between the heat sources and the wet bulb globe thermometer.

(4) Any other type of temperature sensor may be used that gives a reading identical to that of a mercury thermometer under the same conditions.





(5) The thermometers must be placed so that the readings are representative of the conditions in which the men work or rest, respectively.

**Work load**

The total heat load is the sum of the heat produced by the body and the environmental heat. Therefore, if the work is performed under hot environmental conditions, the workload category of each job must be established and the permissible heat exposure limit value pertinent to the work load evaluated against the applicable standard in order to protect the worker from exposure beyond the permissible limit.

The jobs performed by a worker must be classified in the following categories:

- (a) light work: up to 200 kcal/h (sitting or standing to control machines; performing light hand or arm work, etc.);
- (b) moderate work: from 200 to 350 kcal/h (walking about with moderate lifting and pushing, etc.);
- (c) heavy work: from 350 to 500 kcal/h (pick and shovel work, etc.)

Table I thus gives the permissible heat exposure limit value for the specified work load.

An activity may be assigned to a particular category by measuring the metabolism of the man at work, namely by estimating his metabolism using the following Table 2:

**Table 2**

**ASSESSMENT OF WORK LOAD AND AVERAGE VALUES OF METABOLIC RATE DURING DIFFERENT ACTIVITIES**

---

**A. Body position and movement**  
kcal/h

---

Sitting.....	18
Standing.....	36
Walking.....	120-180
Walking uphill .....	Add 48 per metre of rise

---



**LOGAN  
DRILLING  
GROUP**

**B. Type of work**

Average	Range
(kcal/h)	(kcal/h)

---

Handwork .....  
 ..... 12-72

light .....  
 24  
 heavy .....  
 54

Work using one arm .....  
 ..... 42-150

light .....  
 60  
 heavy .....  
 108

Work using both arms.....  
 ..... 60-210

light .....  
 90  
 heavy .....  
 150

Work using body .....  
 ..... 150-900

light .....  
 210  
 moderate.....  
 300  
 heavy .....  
 420  
 very heavy .....  
 540

---

Light handwork .....	writing,
knitting	
Heavy handwork .....	typing
Heavy work using one arm .....	hammering
in nails (shoemaker,	
upholsterer)	



**LOGAN  
DRILLING  
GROUP**

Light work using both arms.....	filing
metal, planing wood,	
	raking a
garden	
Moderate work using both arms.....	cleaning a
floor, beating a carpet	
Heavy work using the body .....	railroad
track laying, digging,	
	barking
trees	

---

**C. Basal metabolism: kcal/h**

Basal metabolism: minimum quantity of calorific energy used when the body is at complete rest.

---

Sample calculation: use of a heavy hand tool on an assembly line

---

A. Walking along.....  
120 kcal/h

B. Intermediate value between  
heavy work using 2 arms and light  
work using the body.....  
180 kcal/h

---

300 kcal/h

C. Basal metabolism .....

---

60 kcal/h

Total .....

---

360 kcal/h

---



**LOGAN  
DRILLING  
GROUP**

The tables in the following publications may also be used:

- (a) Astrand P.O., Rodahl K., *Textbook of Work Physiology*, New York, San Francisco, McGraw Hill Book Company, 1979;
- (b) *Ergonomics Guide to Assessment of Metabolic and Cardiac Cost of Physical Work*, Amer. Id. Hyg. Assoc. J., 32;
- (c) *Energy Requirements for Physical Work, Research Progress Report No 30, Purdue Farm Cardiac Project, Agricultural Experiment Station*, 1961;
- (d) Durnin, J.V.G.A., Passmore R., *Energy, Work and Leisure*, London, Heinemann Educational Books, 1967.

**Alternate work/rest regimen**

The permissible exposure limit values specified in Table I and the Graph are based on the assumption that the WBGT value of the resting place is the same or very close to that of the work location. Limits applicable to continuous work correspond to the following conditions: a 5-day week, an 8-hour working day with a short pause (about a half-hour) for a meal. Higher exposure limits are permitted if additional rest periods are allowed. All breaks, including pauses and administrative or operational waiting periods during work may be counted as rest time when additional rest periods must be given because of high environmental temperatures.

A worker whose job is self-paced will spontaneously limit his hourly work load to 30-35% of his maximum physical performance capacity, either by setting an appropriate work speed or by interspersing unscheduled breaks. Thus the daily average of the worker's metabolic rate seldom exceeds 330 kcal/h. However, within an 8-hour work shift, there may be periods when the worker's average metabolic rate will be higher.

When the WBGT index of the work location is different from that of the rest area, a time-weighted average value should be used for both environmental heat and metabolic rate. When the time-weighted average values are used, the curve to be referred to in the above graph is the solid line.

The time-rated average metabolic rate is determined by the following equation:

$$(M_1) \times (t_1) + (M_2) \times (t_2) + \dots (M_n) \times (t_n)$$

$$M_{\text{moyen}} = \frac{\quad}{\quad}$$

$$(t_1) + (t_2) + \dots (t_n)$$





**LOGAN  
DRILLING  
GROUP**

where  $M_1$ ,  $M_2$  and  $M_n$  are estimated metabolic rates for each of the worker's work locations for the entire work period, and  $t_1$ ,  $t_2$  and  $t_n$  are the time in minutes spent at each corresponding metabolic rate.

Similarly, the time-weighted average WBGT is determined by the equation:

$$(WBGT_1) \times (t_1) + (WBGT_2) \times (t_2) + \dots (WBGT_n) \times (t_n)$$

$$WBGT_{\text{moyen}} = \frac{\dots}{(t_1) + (t_2) + \dots (t_n)}$$

$$(t_1) + (t_2) + \dots (t_n)$$

where  $WBGT_1$ ,  $WBGT_2$ ,  $WBGT_n$  represent values calculated in WBGT for various tasks at rest and work stations occupied during all time periods and  $t_1$ ,  $t_2$ ,  $t_n$  constitute the time in minutes spent at each rest and work station.

When exposure to hot environmental conditions is continuous for several hours or the entire work day, the time-weighted average value must be computed as an hourly time-weighted average, i.e.  $t_1 + t_2 + \dots, t_n = 60$  minutes. Where exposure is intermittent, the time-weighted average values must be computed as two-hour time-weighted averages, i.e.  $t_1 + t_2 + \dots t_n = 120$  minutes.

### Scope of method

The WBGT method does not apply to unacclimatized workers who are physically incapable of performing a specific job or to workers who wear clothing especially adapted to certain dangerous tasks as protection against the heat

O.C. 885-2001, Sch. V.

## SCHEDULE VI

(s. 125)

### ILLUMINATION LEVELS IN ESTABLISHMENTS

Nature of work	Examples of corresponding task
Minimum illumination level in Lux	



**LOGAN  
DRILLING  
GROUP**

Storage, reserve      Warehouses, stockrooms, supervision  
50

---

General perception      Dormitories, grinding  
250

---

Rough detail      Freight and passenger elevators,  
perception      escalators  
50

---

250      General lighting, lecture rooms,  
moulding, manufacturing large parts

---

Average detail      Ironing, window dressing, packing,  
400      labeling, heavy machine or bench  
perception      work, general office work

---

550      Rapid general inspection, studios,  
machine      study rooms, typing, reading,  
sewing, assembly of average parts,  
special office work

---

Difficult detail      Repairs, difficult inspection,  
lathes,      800      hand sewing, embroidery  
perception

---

O.C. 885-2001, Sch. VI.

## **SCHEDULE VII**

MEASURING METHOD OF PREDOMINANT FREQUENCY BANDS (IN CORRECTED DBA)

(a) Using the analysis of each octave band from 31.5 Hz to 16 KHz, determine if one of the bands corresponds to the notion of predominant frequency band



**LOGAN  
DRILLING  
GROUP**

(b) add 5 dB to the measured level of each band corresponding to the notion of predominant frequency band;

(c) modify the resulting sound spectrum as follows:

- at the level of 31.5 Hz, deduct 39.4 dB
- at the level of 63 Hz, deduct 26.2 dB
- at the level of 125 Hz, deduct 16.1 dB
- at the level of 250 Hz, deduct 8.6 dB
- at the level of 500 Hz, deduct 3.2 dB
- at the level of 1,000 Hz, no modification
- at the level of 2,000 Hz, add 1.2 dB
- at the level of 4,000 Hz, add 1.0 dB
- at the level of 8,000 Hz, deduct 1.1 dB
- at the level of 16,000 Hz, deduct 6.6 dB;

(d) then add the levels of each octave of the then modified spectrum by following the method for adding decibels;

(e) the result thus obtained is expressed in corrected dBA.

O.C. 885-2001, Sch. VII.

### **SCHEDULE VIII**

(s. 145)

DAILY QUANTITY OF DRINKING WATER REQUIRED BY WORKERS

<b>Destination</b>	<b>Characteristics</b>
<b>Daily quantity by worker</b>	
<b>in litres</b>	

Offices  
55



**LOGAN  
DRILLING  
GROUP**

Camps	Permanent
190	
	Temporary
95	
Schools	
55	
Factory	Without shower
55	
	With shower
130	
Plant or factory	Without shower
55	
	With shower
130	

O.C. 885-2001, Sch. VIII.

**SCHEDULE IX**

(s. 161)

**SANITARY FACILITIES**

Occupancy Notes	W.C.	Urinals	Lavatories
	men	women	men
	Tubs or Other		
	men	women	men
<b>women showers fixtures</b>			
Arenas			
Players	1/30 players	1/30	1/30 players
1/10			





**LOGAN  
DRILLING  
GROUP**

			players		
players					
Spectators	1/600	3/600	2/600	2/600	
2/600					
	men	women	men	men	
women					
<hr/>					
Brasseries	1/40	1/90	See (a)	1/80	
1/80					
	Customers	Customers		Customers	
Customers					
<hr/>					
Physicians, dentists and other health practitioners offices		1		2 See (b)	
<hr/>					
Cinemas, theatres, auditoriums, exhibition and convention halls...					
1 to 100	1	1		1	1
one persons service					
101 to 200	2	2		1	1
tub persons					
201 to 400	3	3	See (e)	2	2
persons					
401 to 750	add	add		3	3
persons	1/600	1/600			
	persons	persons			
751 or more				add	
add					
				1/1000	
1/1000					
				persons	
persons					
Employees:					



**LOGAN  
DRILLING  
GROUP**

See (d)

---

Medical 1/floor clinics	1/floor	1/floor		1/floor
-------------------------------	---------	---------	--	---------

---

Bars (holding  
a liquor  
permit)

Customers: 1/60	1/25	1/30	See (e)	1/50
	men	women		men

women

Employees:

See (d)

---

Dormitories,  
one tub  
boarding  
per 50  
houses for  
persons;  
children  
a sink

1 to 150 1/12	1/10	1/8	1/25	1/12
See (f) or persons women	men	women	men	men
1/8	service			

persons tub per

151 persons 1/12	add	add	add	add	add
add 100 or more	1/10	1/8	1/50	1/12	
women	1/20	persons	men	men	
	men	women	men	men	

persons

Schools

one

Primary 1/50	1/40	1/35	1/30	1/50
See (g)	service	girls	boys	boys
girls	1/5	tub		



**LOGAN  
DRILLING  
GROUP**

pupils 1/floor					
Other	1/75	1/75	1/30	1/50	
1/50	1/5				
	boys	girls	boys	boys	
girls	pupils 1/floor				
Teachers:					
See (d)					

---

Office buildings (See h)					
1 to 15	1	1		1	1
One employees of service each gender					
sink or					
16 to 35	2	2	See (e)	2	2
tub per employees of floor each gender					
36 to 60	3	3		2	2
employees of each gender					
61 to 80	4	4		3	3
employees of each gender					
81 to 90	5	5		3	3
employees of each gender					
91-110	5	5		4	4
employees of each gender					
111-125	6	6		4	4
employees of each gender					
126 and + 75	add	add		add	
add					
employees of 1/60	1/50	1/50		1/60	
each gender	men	women		men	
women					

---



**LOGAN  
DRILLING  
GROUP**

Churches, 1/300 chapels, women places of worship	1/300 men	1/150 women	1/300 men	1/300 men
---	--------------	----------------	--------------	--------------

---

Sentry-boxes, shelters, temporary buildings, See (i)	1			1
--	---	--	--	---

---

Hospitals At least (hospital one centres) service				
1) Private 1 sink per room floor		1		1
2) Communal 1/20 for the room 1/8 patients first 50		1/8 patients		1/8 patients
3) Waiting patients room and an  additional Employees: one per See (d) each 50  additional  patients  or  signifi-		1		





**LOGAN  
DRILLING  
GROUP**

cant

fraction

of 50

---

Hotel-Motel	See (j)	See (k)
1) Private	1/room	1/room
1/room		
room		
2) Room with		
common		
bathroom		
1 to 4		
rooms/floor		
5 to 8	1/floor	1/floor
1/floor		
rooms/floor		
9 rooms or	1/floor	1/floor
1/floor 1/gender	1/floor	1/floor
more/floor	add	add
add	add	add
	1/8	1/8
1/8	1/8	1/8
	rooms	rooms
rooms	rooms	rooms

---

Professional	1	1	1	1
1 shower				
care				1/care unit
See (l)				
institutes,				
personal care				
institutes,				
beauty salon,				
hairstylist,				
barber				

---

Apartments		
1 sink		
1 to 7 units	1/apartment	1/apartment
1 tub per		



**LOGAN  
DRILLING  
GROUP**

per apartment

apartment See (m)

8 units or 1/apartment 1/apartment

1 tub 1 sink

more

per per

apartment appartement

See (n)

---

Stores

a) Retail 1 1

See (p)

(See o)

b) Department  
Stores,  
Shopping  
Centres

1) Customers 1/300 1/300 See (e) 1/300

1/300 See (p) men women men

women

2) Employees:

See (d) (q)

---

Rooming house See (j) See (k)

See (r)

(tourist,  
furnished,  
boarding,  
homes.)

1/10 1/10 1/10

1/10 2/10 rooms rooms rooms

rooms rooms

---

Pools

See (s)

1) Indoors 1/60 1/40 1/60 1/100

1/100 1/40 men women men men

women swimmers



**LOGAN  
DRILLING  
GROUP**

2) Outdoors	1/120	1/80	1/120	2/600
1/300	1/80	1 Foot		
	men	women	men	men
women swimmers	Bath			
3) spectators	1/600	3/600	2/600	
2/600	men	women	men	
women				

---

Jails, prisons

- 1) Inmates:  
See (c)
  - 2) Employees:  
See (d)
- 

Restaurants

1 to 25	1	See (t)	1	See
(t)				
Customers				
26 to 50	1 see (t)	1 see (t)	1 see (t)	1 see
(t)				
Customers				
51 to 100	1	2	1	1
Customers				
101 to 150	1	1	1	2
Customers				
151 to 200	2	3	See (e)	
Customers				
201 to 300	3	3	3	3
Customers				
301 or more	add	add	add	
add				
1/50	1/50	1/50	1/50	
1/50	men	women	men	
women				
Employees:				
See (d) and (u)				

---

Reception  
rooms, meeting  
halls...  
(holding a  
liquor permit)

See (a)



**LOGAN  
DRILLING  
GROUP**

Customers	1/30	1/30	1/60	
1/60	A tub	men	women	men
women	or a			
service				
sink				

---

Funeral Homes	1	1	1	1
A service				
sink and				
a floor				
drain in				
the				
embalming				
room				

---

Service stations,	1	1	1	1
gas bars				
(See v)				

---

Any other				
See (w)				
establishment				
(plants,				
warehouses,				
workshops,				
laundries,				
foundries,				
etc.)				
See (h)			1	1
1 to 10	1	1	add	
add				
employees of				
each gender				





**LOGAN  
DRILLING  
GROUP**

11 to 25 1/10 employees of women each gender	2	2	1	1/10 men
26 to 50 employees of each gender	3	3	2	
51 to 75 employees of each gender	4	4	2	
76 to 100 employees of each gender	5	5	3	add 1/15 women
101 or more of each gender	add 1/50 men	add 1/50 women	add 1/90 men	add 1/15 men

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- (a) 2/3 of men W.C. may be replaced by urinals.
- (b) A sink shall be installed in the examination room in addition to the one in the toilet room.
- (c) According to the requirements of authorities.
- (d) Sanitary accommodations for employees shall be the same as those required for office buildings.
- (e) For men, half the compulsory W.C. may be replaced by urinals.
- (f) In a women's dormitory, a bathtub shall be added in a proportion of 1/30.
- (g) In the gymnasium and according to the largest group that uses it.
- (h) Only one toilet room is required for 10 employees or less of both genders.
- (i) One W.C. and a lavatory shall be installed, except if written permission is given to use an existing washroom within a maximum radius of 30 m.
- (j) Toilet facilities for general use shall be separate from bathrooms and lavatories.
- (k) One lavatory is required for each room not equipped with a private toilet.



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- (l) One shower for each similar massage, physiotherapy or health treatment unit.
- (m) One laundry tray per apartment or one connection for an automatic clothes washer).
- (n) One double basin laundry tray or one automatic clothes washer per 10 apartments; one automatic washing machine per 20 apartments.
- (o) Several stores may use a common washroom provided it is accessible via an indoor passageway.
- (p) A tub or sink must be installed in a food store. In dog kennels and pet shops, a tub or a service sink and a floor drain must be installed.
- (q) Fixtures for employees may be situated in the customers' washrooms.
- (r) In a home for the elderly, tubs must be installed in a proportion of 1 unit per 10 persons.
- (s) The maximum number of swimmers is determined in a proportion of one swimmer per every 1.4 sq. surface metres in the shallow zone and 2.2 sq surface metres in the deep zone. The floor plan for rooms must be arranged so that swimmers may go through the toilet area to get to the showers.
- (t) Under 26 customers, 1 W.C. and 1 lavatory will be enough for both customer and employee use. From 26 to 50 customers, 2 W.C. and 2 lavatories will be enough for both customers and employees, but in two separate washrooms. Where customers eat outside, separate washrooms for both genders with access from the outside are required.
- (u) Toilet facilities are not required for fewer than 5 employees.
- (v) Separate rooms for both genders with access to the outside are compulsory.
- (w) A shower is compulsory per 15 employees exposed to excessive heat or to skin contact with corrosive, noxious, irritating or infectious.

O.C. 885-2001, Sch. IX.

## **SCHEDULE X**

### **Part 1**

(s. 312.38)

#### **Basic content of an oxygen inhalation kit**



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The oxygen inhalation kit must contain at least the following:

- 1 type D oxygen cylinder (450 litres) at a gauge pressure between 13.8 and 15.2 MPa
- 1 regulator compatible with the oxygen cylinder valve, equipped with a high pressure gauge and a flowmeter
- 1 pocket mask
- 1 Ambu manual resuscitator
- 1 demand regulator
- 1 high concentration mask
- 1 pair of latex gloves
- 1 instructions manual

## Part 2

(s. 312.43)

**Maximum permissible concentration of contaminants in a gas mixture** (measured at 21 °C at 101.3 kPa)

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<b>Contaminants</b>	<b>Maximum concentration</b>
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Carbon monoxide	2 ml/m <sup>3</sup>
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Carbon dioxide	200 ml/m <sup>3</sup>
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Methane in	
- pure oxygen	50 ml/m <sup>3</sup>
- a gas mixture	10 ml/m <sup>3</sup>

Combined halogen hydrocarbons	5 ml/m <sup>3</sup>
- trichlorotrifluoroethane	



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- dichlorodifluoroethane
- chlorodifluoroethane
- fluorotrichloromethane

Nitrogen dioxide

0.1 ml/m<sup>3</sup>

Nitrous oxide

1 ml/m<sup>3</sup>

Oil (condensates and particles)

0.1 mg/m<sup>3</sup> at

normal temperature

and pressure

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Note: 1 ml/m<sup>3</sup> is equal to 1 ppm per volume at normal temperature and pressure.

### **Part 3**

(s. 312.64)

#### **Basic content of a hyperbaric chamber medical kit**

The hyperbaric chamber medical kit must contain at least the following items:

##### **(I) Diagnostic material**

##### **Quantity**

- flashlight

1

- Littmann Classic II stethoscope

1

- Welch Allyn otoscope and opthalmoscope

1

- Tycos sphygmomanometer

1



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- electronic thermometer to measure hypothermia and hyperthermia 1

- tuning fork, 128 vibrations per second  
1

- reflex hammer  
1

- tongue depressors  
50

- safety pins  
24

- wooden cotton swabs  
100

## **(II) Treatment material**

- oropharyngeal airways (sizes 3 to 8)  
(2 of each size)

- Ambu and Ambu mask of medium and large sizes for adults  
(1 of each size)

- bandage scissors (7 1/2 in.)  
1

- aluminum blanket  
1

- packaged sterile gauze pads (4 in. × 4 in.)  
25

O.C. 425-2010, s. 3.

## **TRANSITIONAL PROVISIONS**

2013

**(O.C. 476-2013) SECTION 6.** The location of flocking and heat insulating material of the buildings referred to in section 69.3 of the Regulation respecting occupational health and safety must be carried out within 2 years of the coming into force of this Regulation. (6 June 2015).





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