

# **Amended Sections of the Occupational Health and Safety Regulation**

B.C. Reg. 253/2001

**Effective January 28, 2002**

This document shows the final wording of sections that were amended by  
B.C. Reg. 253/2001.



## **Topics affected by changes to the Occupational Health and Safety Regulation**

### **General**

- Addition of definition of “acceptable to the board” as a Note (Section 1.1)
- Deletion of references to professional geoscientists (Sections 1.1, 20.78, 20.81, 22.6 and 22.144)
- Standards for older equipment (Section 4.4)

### **Specific substances**

- Additional options for asbestos cleanup (Section 6.27)
- Clarifying that ammonia is a toxic process gas (Section 6.116)

### **Confined spaces**

- Allowing gas-pressurized fire extinguishers (Section 9.48)
- Removal of welding hoses (Section 9.49)

### **Fall protection**

- Use of commercially available horizontal lifeline systems (Sections 11.29 and 11.30)

### **Tools, Machinery and Equipment**

- Cleanup of used abrasive blasting materials (Section 12.102)
- Allowing foot-operated jetting guns or equivalent (Section 12.106)
- Additional options for ventilation in welding operations (Section 12.124)

### **Work Platforms**

- Clarifying requirements for level indicators on elevating work platforms (Section 13.121)

### **Mobile equipment**

- Clarifying requirements for warning devices (Section 16.8)
- Allowing parabolic as well as flat mirrors on forklifts (Section 16.10)
- Allowing grandfathering of windows in older equipment (Section 16.11)
- Exempting swampers on garbage trucks from using fall restraint in certain circumstances (Section 16.31)

### **Diving**

- Clarifying the obligation to post notices for a project (Section 24.9)

### **Forestry**

- Clarifying requirements for guylines and running lines (Section 26.40)
- Specifications for bullboards on logging trucks (Section 26.65)
- Heel bars on self-loading logging trucks (Section 26.70)

**Definitions 1.1**

*"acceptable to the board"* **Note:** Many sections of the Occupational Health and Safety Regulation refer to standards, procedures, or means "acceptable to the board". Information on what is acceptable to the board may be obtained by referring to the OHS Guidelines on the particular section at [www.worksafebc.com](http://www.worksafebc.com) or other board publications, or by contacting the Prevention Division of the board.

*"professional geoscientist"* Repealed.

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**Conformity to standards 4.4** If this Regulation requires that a tool, machine or piece of equipment manufactured before April 15, 1998 must meet a code or standard, the tool, machine or piece of equipment must conform to the edition of the code or standard referred to in this Regulation or the edition of the code or standard published at the time the tool, machine or piece of equipment was manufactured, subject only to the modification or upgrading specified to be necessary in this Regulation or in a directive issued by the board.

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**Waste removal 6.27** The employer must remove all asbestos dust and debris from the work area with a vacuum cleaner equipped with a HEPA-filtered exhaust, or by other means acceptable to the board, while the work is in progress, at the end of each work shift, and at the completion of work involving asbestos.

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**Definitions 6.116** In sections 6.117 to 6.132 ...

*"toxic process gas"* means a gas which

- (a) meets the WHMIS toxicity classification criteria for a class D Division 1 Subdivision A (very toxic acute health effect materials) or a class D Division 2 (very toxic and toxic chronic health effect materials) controlled product, and
- (b) is used for purposes of
  - (i) an industrial process in which a precursor is changed into a product,
  - (ii) refrigeration by means of a piped installation, or
  - (iii) treatment of materials, for example, in a disinfection system.

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**Compressed gas cylinders 9.48** A cylinder of compressed gas is not permitted inside a confined space, except for a cylinder of compressed air supplied to a respirator, medical resuscitation equipment, handheld aerosol spray containers, fire extinguishers, or other equipment permitted by the board.

**Torches and hoses**

**9.49** When practicable, torches and hoses used for welding, brazing or cutting must be removed from a confined space when not in use and when the confined space is vacated.

**Note:** It may be impracticable to remove hoses for some short duration breaks of 60 minutes or less, particularly where the confined space is large or where the removal of hoses may create some risk to workers, for example, when hoses are removed from scaffolding. If removal is impracticable, alternate measures must be adopted under sections 9.4 and 9.5. The preferred method in most cases is to disconnect at source with safe venting procedures together with procedures to ensure no inadvertent reconnection while workers are on the break or, if this is not practicable, closing and putting a tag on connections located outside the confined space. Other applicable requirements in Part 9 must also be followed including those on ventilation, standby persons and retesting prior to re-entry. For further information, see the OHS Guideline on section 9.49 at [www.worksafefbc.com](http://www.worksafefbc.com).

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**Temporary systems for fall arrest**

- 11.29**
- (1) Unless permitted by subsection (2), a temporary horizontal lifeline system used for fall arrest must meet the following requirements:
    - (a) the horizontal lifeline must be a minimum 12 mm (½ in) diameter wire rope having a breaking strength specified by the manufacturer of at least 89 kN (20,000 lbs);
    - (b) the horizontal lifeline must be free of splices except at the terminations;
    - (c) connecting hardware such as shackles and turnbuckles must have an ultimate load capacity of at least 71 kN (16,000 lbs);
    - (d) the span must be at least 6 m (20 ft) and not more than 18 m (60 ft);
    - (e) end anchors must have an ultimate load capacity of at least 71 kN (16,000 lbs);
    - (f) the horizontal lifeline must have an unloaded sag of approximately the span length divided by 60;
    - (g) the elevation of the line at any point must be at least 1 m (39 in) above the working surface;
    - (h) the free fall distance must be limited to 1.2 m (4 ft);
    - (i) a minimum of 3.5 m (12 ft) of unobstructed clearance must be available below the working surface;
    - (j) no more than 3 workers may be secured to the horizontal lifeline;
    - (k) the horizontal lifeline must be positioned so it does not impede the safe movement of workers.
  - (2) A temporary horizontal lifeline system may be used if the system
    - (a) is manufactured for commercial distribution, is of a design acceptable to the board, and is installed and used in accordance with the written instructions and drawings from the manufacturer or authorized agent, which are readily available in the workplace, or
    - (b) is installed and used in accordance with written instructions and drawings certified by a professional engineer, which are readily available in the workplace.

**Permanent systems**

- 11.30**
- (1) Before a permanent horizontal lifeline system is used the employer must ensure that a professional engineer supplies to the workplace drawings and instructions for the lifeline system unless the system is manufactured for commercial distribution and is of a design acceptable to the board, in which case the manufacturer or authorized agent may provide the drawings and instructions.
  - (2) The drawings and instructions required by subsection (1) must show
    - (a) the layout in plan and elevation, including anchor locations, installation specifications, anchor design and detailing,
    - (b) horizontal lifeline system specifications, including permissible free fall distance, clearance to obstructions below, and rope size, breaking strength, termination details, initial sag or tension, and
    - (c) the number of workers permitted to connect to the lifeline, and maximum arrest force to each worker.
  - (3) Before a permanent horizontal lifeline system is used, there must be written certification by a professional engineer, the manufacturer or the manufacturer's authorized agent that the system was installed in accordance with the drawings and instructions required by subsection (1).
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**Cleanup**

- 12.102**
- (1) Used abrasive blasting materials which contain a substance designated under section 5.57 must be removed from the work area by using effective procedures designed to minimize the generation of airborne dust, and suitable personal protective equipment.
  - (2) Removal under subsection (1) must take place by the end of each shift unless
    - (a) a risk assessment establishes that the risks from removal will exceed the risks from leaving the materials in place,
    - (b) no workers will be exposed to the materials before removal occurs, or
    - (c) the materials cannot be separated from the environment in which the abrasive blasting takes place.
  - (3) If removal is delayed pursuant to subsection (2), the employer must assess the risks arising from delaying the removal and develop safe work procedures.
  - (4) The work procedures developed under subsection (3) must be in writing.

**Note:** Section 4.41 of this Regulation requires that waste abrasive blasting materials not be allowed to accumulate so as to become hazardous to workers. Part 8 (Personal Protective Clothing and Equipment) of this Regulation provides requirements for respiratory and other forms of personal protective equipment to be used in the workplace.

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- Operating controls**      **12.106**    (1) The operating controls for a sandblasting machine or jetting gun must be
- (a) located near the nozzle in a position where the operator's hands will be when using the device,
  - (b) the continuous pressure type that immediately stops the flow of material when released, and
  - (c) protected from inadvertent activation.
- (2) Subsection (1)(a) does not apply to sandblasting machines or jetting guns used in operations where hand operated controls are clearly impracticable, in which case the operator must use a foot operated control or equivalent safety device, both of a design acceptable to the board.

**Note:** An example of a work process in which the hand operation of a sandblasting machine or jetting gun is impracticable is the cleaning of small diameter pipes when the lance must be inserted completely inside the piping for effective cleaning.

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- Respiratory protection**      **12.124**    Respiratory protective equipment must be provided and worn if an effective means of natural, mechanical or local exhaust ventilation is not practicable
- (a) during short duration welding, burning or similar operations, and
  - (b) during emergency work.

**Note:** The WCB provides a guideline for determining when ventilation may be used, the type of ventilation effective in different situations, and when respiratory protective equipment should be used. Reference should be made to this guideline when interpreting this requirement.

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- Level indicating devices**      **13.121**    (1) A self-propelled elevating work platform, other than a boom-supported unit, must have either
- (a) a level indicator that shows the tilt angle of the work platform with the equipment in any permitted operating position, or
  - (b) a tilt alarm or other suitable warning device that activates automatically when the platform is elevated and the carrier is off level by more than the manufacturer's specified tilt limit, or 5°, whichever is less.
- (2) If a level indicator is used to comply with subsection (1), then the indicator must allow the operator to determine when the equipment is off level by more than the manufacturer's specified tilt limit, or 5°, whichever is less.
- (3) A self-propelled boom-supported elevating work platform must have a tilt alarm or other suitable warning device which activates automatically when the platform is elevated and the carrier is off level by more than the manufacturer's specified tilt limit, or 5°, whichever is less.
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- Warning signal device**      **16.8**      (1) Mobile equipment in which the operator cannot directly or by mirror or other effective device see immediately behind the machine must have an automatic audible warning device which
- (a) activates whenever the equipment controls are positioned to move the equipment in reverse, and
  - (b) if practicable, is audible above the ambient noise level.
- (2) Repealed.
- Note:** Section 16.42 provides requirements when the operator's view of the work area is obstructed, for example, inspection of the area or the use of a signaller.
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- Rear view mirrors**      **16.10**      (1) Mobile equipment must have a mirror or mirrors providing the operator with an undistorted reflected view to the rear of the mobile equipment or combination of mobile equipment, except as provided in subsections (1.1), (1.2) and (2).
- (1.1) If necessary to improve rear vision, parabolic mirrors in combination with flat mirrors may be used.
  - (1.2) A parabolic mirror, flat mirror or both may be used on a lift truck.
  - (2) A rear view mirror is not required on mobile equipment if the conditions of use or equipment structure makes the use of mirrors impracticable.

- Window standards**      **16.11**      (1) Windows on mobile equipment must be made of safety glazing meeting the requirements of *ANSI Standard Z26.1-1990, American National Standard for Safety Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways - Safety Code*, or other standard acceptable to the board.
- (2) If the maximum travel speed of a machine is 40 km/h (25 mph) or less, tempered windscreen glazing meeting the requirements of *ANSI/SAE Z26.1-1990, American National Standard for Safety Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways - Safety Code*, section 4, item 2 is permitted for use as the windshield on the front of the machine.
  - (3) If wipers are used on plastic glazing, the glazing surface must be hard coated.
  - (4) Each window on mobile equipment manufactured after February 1, 2002 or otherwise installed on mobile equipment after that date must be marked to identify the manufacturer, the standard to which the window conforms, and in the case of polycarbonate windows, the thickness and grade of material.
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- Rider restriction**      **16.31**
- (1) The operator of mobile equipment is the only worker permitted to ride the equipment unless the equipment is a worker transportation vehicle meeting the requirements of Part 17 (Transportation of Workers), or when permitted by subsections (2) to (4).
  - (2) A worker who must ride on mobile equipment to carry out a job task may ride non-ROPS equipped mobile equipment on
    - (a) an appropriate seat, or
    - (b) other safe facilities provided by the equipment manufacturer or designed by a professional engineer, which include
      - (i) a footboard or platform upon which the worker stands or sits, located to protect the worker from contact with roadside objects or other vehicles,
      - (ii) hand-holds, and
      - (iii) a safety belt, harness, guardrail or other effective means of restraint, except where the worker is a swamper riding on the back of a garbage truck during short pickup runs at speeds of less than 20 km/h.
  - (3) Rear mounted footboards or platforms must not be occupied if the mobile equipment is backing up.
  - (4) A worker other than the operator may only ride on mobile equipment with a ROPS for the purpose of training or maintenance, and only then if the equipment is operated in an area with no significant hazard of rollover.
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- Work standards**      **20.78**
- (1) Excavation work must be in accordance with the written instructions of a professional engineer if
    - (a) the excavation is more than 6 m (20 ft) deep,
    - (b) support structures other than as specified in section 20.81 are used in the excavation,
    - (c) an improvement or structure is adjacent to the excavation,
    - (d) the excavation is subject to vibration or hydrostatic pressure likely to result in ground movement hazardous to workers, or
    - (e) the ground slopes away from the edge of the excavation at an angle steeper than 3 horizontal to 1 vertical.
  - (2) The written instructions required in subsection (1) must
    - (a) be certified by a professional engineer,
    - (b) be available at the site, and
    - (c) specify the support and sloping requirements, and the subsurface conditions expected to be encountered.
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- Sloping and shoring requirements**      **20.81**
- (1) Before a worker enters any excavation over 1.2 m (4 ft) in depth or, while in the excavation, approaches closer to the side or bank than a distance equal to the depth of the excavation, the employer must ensure that the excavation sides are sloped or supported as specified by a professional engineer, or that the sides of the excavation are
    - (a) sloped at angles, dependent on soil conditions, which will ensure stable faces, but in no case may the slope or combination of vertical cut and sloping exceed that shown in Figure 20-1,
    - (b) benched as shown in Figure 20-2,
    - (c) supported in accordance with the minimum requirements of section 20.85, or
    - (d) supported by manufactured or prefabricated trench boxes or shoring cages, or other effective means.

- (2) If the end of a trench over 1.2 m (4 ft) in depth is not adequately sloped, end shoring must be installed unless
  - (a) a worker in the trench is not required to approach closer to the end of the trench than a distance equal to the depth of the trench at that end,
  - (b) where, for the prevailing soil conditions at the end of the trench, the permissible spacing of uprights equals or exceeds the width of the trench, or
  - (c) otherwise authorized in writing by a professional engineer.
- (3) If end shoring is required, the walers for the end shoring must be installed to bear against the walers that extend along the sides of the trench, or in a manner that will provide equivalent structural restraint.
- (4) End shoring must be designed by a professional engineer if the end shoring waler length exceeds 1.8 m (6 ft).
- (5) Shoring must extend from at least 30 cm (1 ft) above ground level to as close to the bottom of the trench as the material being installed will allow, but in no case more than 60 cm (2 ft) from the bottom.
- (6) Shoring need not extend above ground level where traffic crossing plates need to be used, provided that other measures are taken to prevent excavated or other material from entering the excavation.

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**Notice of project**

**22.6**

- (1) No later than 30 days before commencing an underground project, written notification of the project must be given to the board by the owner or another person engaged by the owner to be the prime contractor, except that if there is more than one prime contractor employed on the project the notice must be given by the owner.
- (2) The notification must include
  - (a) the name of the project,
  - (b) the address or location of the project referenced to the nearest town and public highway,
  - (c) the name and address of the owner and of any other person engaged to be the prime contractor, and of the bonding company, if appropriate,
  - (d) the name of the person in charge of the project,
  - (e) a brief description of the project including
    - (i) the type of underground working,
    - (ii) the mining method,
    - (iii) the type, number of units, and engine horsepower (watts) of the mining equipment,
    - (iv) the starting date and approximate duration of the project,
    - (v) the approximate peak labour force, and
    - (vi) the proposed hours of work,
  - (f) the details of proposed temporary or permanent ground support, including the proposed timing of such support, and whether the owner or another person engaged to be the prime contractor will be responsible for its design and installation,
  - (g) the plans, drawings and fan specifications for the ventilation systems that will be used during construction, and

- (h) a report produced by a professional engineer that provides
  - (i) a description of the geological hazards associated with the work,
  - (ii) drawings showing profiles, transverse sections and plans for the proposed underground workings, including the potential for encountering gassy ground, explosive dusts, rock falls, running ground or rock bursts, and
  - (iii) a detailed statement from the owner or another person engaged to be the prime contractor as to how geological hazards will be dealt with.
- (3) Any hazards discovered during the work which were not included in the report required by subsection (2)(h) must be reported immediately to the board.

**Limiting descent**                      **22.144**      Workers entering large diameter holes must not descend more than 3 m (10 ft) below the casing of the hole unless ground conditions have been inspected and certified safe in writing by a professional engineer, and copies of the certification must be maintained at the worksite.

**Notice of project**                      **24.9**      (1) The employer must submit a notice of project for diving activity, or notify the board by telephone, at least 24 hours before commencing a diving operation which involves

- (a) construction diving,
- (b) engineering inspection diving,
- (c) diving in a contaminated environment,
- (d) diving under ice, under or between nets, or into other areas of potential entrapment,
- (e) exceeding the no-decompression limit, or
- (f) the use of mixed gas other than nitrox as a breathing medium.

(2) The notice of project must indicate the date, the location, the diving equipment to be used and the scope of the diving operation.

(3) Before diving commences, a copy of the notice of project must be posted at the worksite, or if notification is provided by telephone, a written summary of that notification that contains the information required by subsection (2) must be posted at the worksite.

(4) If in an emergency it is not practicable to notify the board prior to the start of a diving operation, the board must be notified as soon as possible, but no later than 24 hours after the diving operation has begun.

**Anchors**                                      **26.40**      (1) A standing tree may be used for anchoring lines or fastening blocks only if

- (a) a suitable stump is not available, and
- (b) the tree is effectively tied back to another anchor, except that a secondary anchor tree need not be tied back.

(1.1) A standing tree must not be used to anchor guylines if a worker would be endangered were the tree to be pulled over.

(2) A stump or tree must not be used as an anchor for a line or for fastening a block until it has been determined that it is suitable for use as an anchor, and it must be inspected daily to determine that it remains suitable for continued use.

(3) A guyline must be secured to its anchor stump by

- (a) a notch of sufficient depth to retain the wrapping lines, or by other means providing equivalent security, and

- (b) sleeve shackles, knob and bell, screwy hooks or line clamps compatible with the guyline size, and
- (c) a minimum of 2½ wraps about the anchor if spikes are used.
- (4) If spikes are used to secure a guyline to an anchor stump, there must be at least
  - (a) 8 spikes in the first wrap, 3 spikes in the second wrap and 8 spikes in the last wrap if the guyline is attached to the yarder, or
  - (b) 3 spikes in the last wrap if the guyline is attached to a back spar.
- (5) If a log, pipe or other apparatus buried in the ground is used to anchor a guyline or skyline, the method and equipment used must be acceptable to the board and
  - (a) the guyline or skyline must not be directly attached to the anchor,
  - (b) a suitable strap or line of equal size and strength to the guyline or skyline with eyes in each end must be used, with one wrap around the anchor, and both eyes attached to the guyline or skyline with a shackle, and
  - (c) the eye connection of the anchor strap must be visible for inspection.
- (6) Artificial earth anchors must be installed and used in accordance with their design specifications and manufacturer's recommendations or a standard acceptable to the board.
- (7) Rock bolt, wire rope and steel pin anchors must be grouted and installed, tested and maintained in accordance with the anchor manufacturer's recommendations or a standard acceptable to the board.
- (8) If an anchor system has 2 or more legs, bridle blocks of adequate strength must be used to distribute the load equally.

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| <b>Bullboards</b> | <b>26.65</b> | <ul style="list-style-type: none"> <li>(1) For the protection of the driver, each logging truck must have a substantial barrier at the back of the cab that is at least 15 cm (6 in) higher than the cab and is at least 15 cm (6 in) wider than the cab or is the maximum width allowed by the <i>Motor Vehicle Act</i> or the <i>Motor Carrier Act</i>.</li> <li>(2) The barrier at the back of the cab of a self-loading logging truck may be less than the height specified in subsection (1) but must not be less than the cab height.</li> </ul> |
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| <b>Unguarded equipment</b> | <b>26.70</b> | <ul style="list-style-type: none"> <li>(1) If it is not practicable to provide overhead protective guards on self-loading log transporters or similar equipment, the equipment must not be used if the absence of guarding presents a risk of injury to the operator.</li> <li>(2) The heel bar on the operator's side of the loader boom of a self-loading log transporter must be equipped with a deflector shield and must not be used for heeling logs.</li> </ul> |
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