

PART 5: CHEMICAL AGENTS AND BIOLOGICAL AGENTS

CONTROLLING EXPOSURE

- Extended work periods** **5.50** (1) If the work period is more than 8 hours in a 24 hour day, the 8-hour TWA limit must be reduced by multiplying the TWA limit by the following factors:

Factor	Length of work period (in hours)
0.7	more than 8, but not more than 10
0.5	more than 10, but not more than 12
0.25	more than 12, but no more than 16
0.1	more than 16

- (2) ~~For some substances with an extended biological half-life, with written permission from the Board, a factor other than those in subsection (1), or a time-weighted averaging period other than 8 hours may be used to accommodate extended work periods, provided that any such adjustment is based upon recognized occupational hygiene principles, and provides adequate protection from adverse health effects~~

Explanatory Notes:

Section 5.50(2) of the Occupational Health and Safety Regulation currently allows, with written permission from the Board, for extended work periods for some substances with an extended biological half-life. Through two possible mechanisms, subsection (2) provides an exception to the limits on work period set out in subsection (1).

Substances with extended biological half-lives (e.g. lead) may be more toxic than substances with shorter half-lives. Subsection (2), if it were used, could act to increase worker exposures to these substances. In the interests of worker safety, the Board has therefore approved the removal of this exception from the Regulation.

There have been no requests for permission under subsection (2) for the past 10 years, either to WorkSafeBC officers in the field, or to the Regulatory Practices Department of the Worker and Employer Services Division, WorkSafeBC. WorkSafeBC concludes that subsection (2) is not needed by industry.

For the foregoing reasons, section 5.50(2) has been reviewed with an eye to its repeal. This change will ensure that workers are not exposed to toxic substances over work periods which are longer than the periods already set out in subsection (1). Worker safety will be maintained or enhanced.

PART 14: CRANES AND HOISTS

GENERAL REQUIREMENTS

- Standards** 14.2 (9) A chimney hoist must meet the requirements of ~~WorkSafeBC Standard 14.116 Chimney Hoists~~ **WorkSafeBC Standard 14.116 – Chimney Hoists, set out in Schedule 14-A.**

CHIMNEY HOISTS

- Permission to use Standard to use** 14.116 If it is not practicable to provide safe access to a work platform on a chimney or similar structure using stairs or other means acceptable under the *BC Building Code* or this Regulation, a chimney hoist meeting the requirements of ~~WorkSafeBC Standard 14.116 Chimney Hoists~~ **WorkSafeBC Standard 14.116 – Chimney Hoists, set out in Schedule 14-A**, may, with the prior permission of the Board, be used to provide access for any person.
- Certification** 14.117 (1) Before a chimney hoist is used, a professional engineer must certify that
- (a) the chimney hoist is safe for use, and
 - (b) the installation of the hoist complies with
 - (i) the design criteria for that installation,
 - (ii) the hoist manufacturer's specifications,
 - (iii) the requirements of ~~WorkSafeBC Standard 14.116 Chimney Hoists~~ **WorkSafeBC Standard 14.116 – Chimney Hoists, set out in Schedule 14-A**, and
 - (iv) the requirements of this Regulation.
- (2) A copy of the certification required in subsection (1) must be available at the workplace where the chimney hoist is installed.
- Support structures** 14.118 The structure supporting a chimney hoist, together with all hoisting gear and equipment, must be well constructed, accurately aligned, securely anchored and have the required strength and stability to safely withstand the loads imposed.
- Load rating** 14.119 The rated capacity of **the hoist of** a chimney hoist must be conspicuously marked on the ~~platform or cage~~ **hoist** and must not be exceeded.

SCHEDULE 14-A
[sections 14.2 (9), 14.116 and 14.117]

WORKSAFEBC STANDARD 14.116 - CHIMNEY HOISTS

Scope

- 1** This standard sets out the minimum requirements that are in addition to those set out in sections 14.116 to 14.119 of this Regulation for the design and use of a chimney hoist to transport personnel to a fixed work platform on a chimney or similar structure.

Definitions and interpretation

- 2** (1) In this standard:
- “cage”** means the fully enclosed platform of a chimney hoist, which platform is used to raise or lower one or more persons to a fixed work platform on a chimney or similar structure;
 - “hoist”**, in respect of a chimney hoist, means the apparatus that is used to raise or lower the cage;
 - “rated capacity”**, in respect of a cage or a hoist, means the maximum weight the cage or hoist is rated by its manufacturer to carry.
- (2) The definitions set out in ANSI/ASSE Standard A10.22-2007, *Safety Requirements for Rope-Guided and Non-Guided Workers’ Hoists*, apply in this standard.

General requirements

- 3** (1) A chimney hoist must
- (a) be designed, constructed, erected, disassembled, inspected, maintained and operated as specified by the manufacturer or a professional engineer, and
 - (b) meet the requirements of ANSI/ASSE Standard A10.22-2007, *Safety Requirements for Rope-Guided and Non-Guided Workers’ Hoists*, except as otherwise specified in this standard.
- (2) A chimney hoist must have a cage.

Certification after alteration

- 4** (1) Following any alteration to a chimney hoist, other than ordinary adjustments or repairs,
- (a) the chimney hoist must be tested by a professional engineer and certified as required under section 14.117 of this Regulation, and
 - (b) the design documents and operating instructions must be updated by the professional engineer as necessary to ensure the documentation is complete and allows for safe use of the chimney hoist.
- (2) A copy of the certification required under subsection (1) must be available at the workplace where the chimney hoist is installed.

Emergency stopping devices

- 5** A chimney hoist must be outfitted with emergency stopping devices on at least two separate guide wire ropes that will apply automatically to prevent the cage from falling if a wire rope fails.

Safety factors

- 6** Suspension and guide wire ropes, supporting structures, slings and metal fittings used on a chimney hoist must have a safety factor of 10.

SCHEDULE 14-A
[sections 14.2 (9), 14.116 and 14.117]

WORKSAFEBC STANDARD 14.116 - CHIMNEY HOISTS

Drive restrictions

- 7 A hoist must have a positive drive and there must not be a clutch between the transmission and the hoist drum.

Brakes

- 8 A hoist must have two independent braking systems: one that applies automatically when the controls are in the neutral position, and one that applies automatically in the event of loss of power.

Terminal stopping devices

- 9 A chimney hoist must have upper and lower terminal stopping devices that automatically stop the cage from normal travel speed, within the top and bottom travel limits.

Speed governor

- 10 A hoist must have a governing device that will effectively prevent the drum speed from exceeding 110% of the design speed.

Equipment condition

- 11 The hoist, wire ropes and cage of a chimney hoist must be in good working order with all components, controls and functions meeting, and operating in accordance with, the manufacturer's specifications, the professional engineer's design specifications and this Regulation.

Cage markings

- 12 The cage must be legibly marked to show
- (a) the name of the manufacturer or certifying professional engineer,
 - (b) a unique identification number or code that links to the design and certification documentation for the chimney hoist from the certifying professional engineer,
 - (c) the weight of the cage, and
 - (d) the rated capacity of the cage.

Load restrictions

- 13 (1) The rated capacity of the cage must not be exceeded.
- (2) A chimney hoist must not use a hoist with a rated capacity that is less than the rated capacity of its cage.

Cage layout and guarding

- 14 The cage must be constructed so that
- (a) it does not cause a hazard to the occupants, and
 - (b) the occupants cannot reach any hazard created by movement of the cage or the hoisting mechanism.

Fall protection at landings

- 15 A landing that is 3 m (10 ft) or more above grade must have gates, hinged guardrails, hinged covers or other effective guarding that protects persons who are at or near the landing from the hazard of falling off of or through the landing platform when the cage is not at that landing.

SCHEDULE 14-A
[sections 14.2 (9), 14.116 and 14.117]

WORKSAFEBC STANDARD 14.116 - CHIMNEY HOISTS

Guarding at the lower landing

16 The lower landing for a chimney hoist must be guarded by perimeter guards or guardrails and a gate.

Instructions for use and maintenance

17 The instructions from the professional engineer who designed the chimney hoist and from the manufacturers of its component parts, relating to safe use and maintenance of the chimney hoist, must be available in the workplace.

Chimney hoist must be in good condition

18 The chimney hoist, including its cage, must be in good condition at the beginning of each shift and during use.

Operator training and authorization

19 (1) A chimney hoist operator must not operate a chimney hoist unless authorized by the employer.

(2) A chimney hoist operator must not be authorized under subsection (1) unless the operator has demonstrated

(a) competency in operation of the chimney hoist, and

(b) familiarity with the operating instructions required under section 17 and the communication systems required under sections 22 and 23.

Daily testing

20 Before the first use on each work shift, the cage of the chimney hoist must be raised to its maximum operating height and lowered back to the ground or base to ensure that

(a) all functions are operating correctly,

(b) all limit devices are functioning properly, and

(c) there is adequate clearance between the cage and any surrounding object such as a structure, overhead obstruction, storage rack, or scaffold, and any hazard such as energized electrical wires and equipment.

Attending the controls

21 The operator of a chimney hoist must not leave the hoist controls unattended or engage in any other tasks unless the cage is at the lowest landing level, which is usually at ground or grade level, and no persons are in the cage.

Communication with the operator

22 (1) There must be effective voice communication, using single channel two-way radios, among the chimney hoist operator, occupants of the cage and people at each hoist landing.

(2) If there is more than one occupant in a cage, one person in the cage must be designated to be the primary person to signal the chimney hoist operator regarding cage movement requests.

Backup communication plan

23 (1) An effective signalling system must be developed and implemented as an alternative in the event the primary voice communication system becomes ineffective while the chimney hoist is in use.

SCHEDULE 14-A
[sections 14.2 (9), 14.116 and 14.117]

WORKSAFEBC STANDARD 14.116 - CHIMNEY HOISTS

- (2) If the voice communication system becomes ineffective while the chimney hoist is in use, the signalling system required under subsection (1) must be used to bring the cage down to the lowest landing and the hoist must not be used until the voice communication system is effectively restored.

Persons or materials

- 24 Materials, equipment or supplies must not be raised or lowered by the chimney hoist with a person in the cage.

Getting in or out of the cage

- 25 The cage must be at a designated landing before a person gets into or out of the cage.

Hoisting speed

- 26 A cage must not be raised or lowered at a speed greater than 76 m/min (250 fpm).

Position of gates

- 27 All the gates of a chimney hoist must be kept closed, except at a landing designated for loading and unloading the cage.

Emergency evacuation

- 28 (1) Before a chimney hoist is used, a plan must be developed for the evacuation of personnel from the cage in the event of loss of power or equipment malfunction.
- (2) While a chimney hoist is in use, personnel and equipment must be immediately available to implement the plan required under subsection (1).

Explanatory Notes:

Section 14.116 of the Occupational Health and Safety Regulation (“OHSR”) currently allows, with written permission from the Board, for a chimney hoist meeting certain requirements to be used to provide access to a work platform on a chimney or similar structure if using stairs or other means acceptable under the BC Building Code or the OHSR are not practicable. The Engineering Department of WorkSafeBC’s Investigations Division believes chimney hoists to be very rare in BC.

The Board’s requirements for the use of chimney hoists, additional to those set out in sections 14.116 through 14.119, are already set out in the currently referenced WorkSafeBC Standard 14.116. The Board has therefore approved the removal of the “*with the prior permission of the Board*” requirement in section 14.116 as redundant.

Legislative counsel has advised that WorkSafeBC Standards should be brought directly into the Regulation as Schedules. Accordingly, WorkSafeBC Standard 14.116 has been reworked (see attached Schedule 14-A) in order to: reduce redundant requirements already covered by sections 14.116 through 14.119 of the Regulation, eliminate the unsafe and obsolete “cage not fully enclosed” section; update the ANSI/ASSE Standard reference to the 2007 version; make a consequential change to section 14.119 of the Regulation to ensure the hoist’s rated capacity is marked on the hoist; and make other wording and structural changes to improve clarity and consistency.

Worker safety will be maintained.

PART 19: ELECTRICAL SAFETY

WORKING CLOSE TO ENERGIZED HIGH VOLTAGE EQUIPMENT AND CONDUCTORS

- Assurance not practicable** **19.26** (1) If exposed high voltage electrical equipment and conductors cannot be isolated, rerouted or guarded, work must not be done within the minimum distance in Table 19-1 until ~~approval is obtained from the Board~~ and the following precautions are taken:
- (a) the area within which equipment or materials are to be moved must be barricaded and supervised to restrict entry only to those workers necessarily engaged in the work;
 - (b) a safety watcher must be designated;
 - (c) a positive means must be provided for the safety watcher to give a clear, understandable stop signal to workers in the area, and the watcher must give the stop signal by no other means.
- (2) While equipment is in motion in an area in proximity to energized electrical equipment or conductors, no person other than the equipment operator may touch any part of the equipment or the material being moved by it.
- (3) No person may move a load or any rigging line from its position of natural suspension if it is in proximity to an energized electrical conductor or equipment.

Explanatory Notes:

Section 19.26(1) of the Occupational Health and Safety Regulation (OHSR) currently requires the prior approval of the Board for work within the minimum distance in Table 19-1 if exposed high voltage electrical equipment and conductors cannot be isolated, rerouted or guarded.

Working within the limits of approach of high voltage equipment and conductors is highly hazardous; however, due to the operation of the previous OHSR section (s.19.25), the power system owner will already be aware of 99% of cases where people are working within the limits of approach and this planned work always involves some kind of scrutiny by the power system owner. Then, if it is not practicable to isolate, reroute or guard the high voltage equipment, section 19.26 comes into play; but it is very, very, rare. In this event, the 30M33 form (the 'Assurance in writing' required under s. 19.25) would still be directed in to WorkSafeBC to indicate precautionary actions that are being taken. WorkSafeBC knows of no recorded instance of a request for prior approval under section 19.26.

The rigorous conditions the Board would impose in granting prior approval are exactly the same as those precautions already listed in subsection (1) (a), (b), and (c). The Board has therefore approved the removal of the requirement for prior approval of the Board in subsection (1) redundant. There is no record of any violation of the prior approval requirement in Part 19, and therefore no resulting electrocution fatalities.

Worker safety will be maintained.

PART 21: BLASTING OPERATIONS

TRANSPORTATION

Mobile drill rigs	21.25	The transportation of explosives on a mobile drilling rig is only permitted if <ul style="list-style-type: none">(a) explosives and detonators are carried in separate containers built to type 6 or type 10 magazine standard and capacities, with 2 hooded locks, and(b) the explosives and detonator containers are<ul style="list-style-type: none">(i) located at least 60 cm (2 ft) apart, with the doors or lids facing at least 90° apart,(ii) located above the vehicle deck in a manner which protects the containers from contact with roadside objects and the drilling equipment,(iii) located so the contents are not endangered by any heat source on the drill unit,(iv) kept locked when outside the blasting area, and securely closed when in the blasting area, except when opened for depositing or removing their contents, and(v) attended by the blaster of record, or a qualified person designated by the blaster, at all times when explosives are being carried, unless the prior permission of the Board has been obtained.
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Explanatory Notes:

Section 21.25(b)(v) of the Occupational Health and Safety Regulation currently requires the prior permission of the Board for any exception to the requirement that explosives and detonator containers be attended by the blaster of record, or a qualified person designated by the blaster, at all times when explosives are being carried.

There is no record at WorkSafeBC of the prior permission clause ("*unless the prior permission of the Board has been obtained*") ever having been used.

The prior permission clause adds nothing to a person's existing obligations under the transport of explosives provisions of the federal Explosives Act (Canada) and its Explosives Regulation. Further, removing the prior permission clause eliminates the potential for WorkSafeBC officers to write orders, or for such orders to be interpreted, in a way which would conflict with the federal Regulation, in particular section 63(r) of the Explosives Regulation which states: "...*shall not leave the vehicle unattended.*"

The Board has therefore approved the removal of the requirement for prior permission of the Board in subsection (b)(v).

Worker safety will be maintained or enhanced.