

WorkSafeBC Standard 14.116 Chimney Hoists

1. Scope

1.1 This standard sets out the minimum requirements for the design and use of a chimney hoist to transport personnel to a work platform on a chimney and similar structure.

2. Definitions

2.1 The definitions set out in *ANSI Standard A10.22-1990, American National Standard for Rope-Guided and Nonguided Workers' Hoists -- Safety Requirements* apply to this standard.

2.2 "Cage" means the cage, platform, or skip of a chimney hoist used to raise or lower one or more people to a work platform on a chimney or similar structure.

3. Chimney Hoist Requirements

3.1 Design Requirements

A chimney hoist must meet the requirements of *ANSI Standard A10.22-1990, American National Standard for Rope-Guided and Nonguided Workers' Hoists -- Safety Requirements*, except as otherwise specified in this standard.

3.1 Certification

A professional engineer must certify that a chimney hoist has been designed, installed and tested in conformity with this standard and the equipment manufacturer's requirements, and it is safe for use before the hoist is put into service.

3.3 Certification after alteration

A professional engineer must test and certify a chimney hoist system following any alteration to the system, other than ordinary adjustments or repairs, and update the system design documents and operating instructions as necessary to ensure such documentation is complete and allows for safe use of the system.

3.4 Support structures

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.

3.5 Load rating

The rated capacity of a chimney hoist must be conspicuously marked on the cage.

3.6 Emergency brakes

The cage of a chimney hoist must be prevented from falling if a cable fails, by automatically applied arresting devices operating on at least 2 separate guide cables.

3.7 Safety factors

Suspension and guide cables, supporting structures, slings and metal fittings used on a chimney hoist must have a safety factor of 10.

3.8 Drive restrictions

The hoisting winch of a chimney hoist must have a positive drive and there may be no clutch between the transmission and the hoisting cable drum.

3.9 Brakes

The hoisting winch of a chimney hoist must have 2 independent braking systems, one of which must apply automatically when the controls are in the neutral position, and one that must apply automatically in the event of loss of power.

3.10 Limit switches

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

3.11 Speed governor

The hoisting equipment of a chimney hoist must have a governing device which will effectively prevent the drum speed from exceeding 110% of the design speed.

3.12 Equipment condition

The hoist, ropes and cage must be in good working order with all components, controls and functions meeting and operating in accordance with the manufacturer's specifications, the engineer's design specifications and the *Occupational Health and Safety Regulation*.

4. Cage Requirements

4.1 Cage markings

The cage must be legibly marked to show:

- (a) The name of the certifying engineer;
- (b) A unique identification number or code that links to the design and certification documentation for the chimney hoist from the engineer;
- (c) The weight of the cage;
- (d) The rated load of the cage (the maximum weight of people or materials permitted in or on the cage).

4.2 Cage layout and guarding

The cage must be constructed so it does not cause a hazard to the occupants and so the occupants cannot reach any hazard created by movement of the cage or the hoisting mechanism.

5. Guardrails and gates

5.1 Fall protection at landings

Each landing 3 m (10 ft) or more above grade must have gates, hinged guardrails, or hinged covers that protect people at or near the landing from the hazard of falling off of or through the landing platform whenever the cage is not at that landing.

5.2 Guarding at the lower landing

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

6. Use Requirements

6.1 Instructions for use and maintenance

The instructions from the engineer who designed the chimney hoist system and from the manufacturer of component parts, such as the hoist, relating to safe use and maintenance of the chimney hoist system must be available in the workplace.

6.2 Prior to use

The chimney hoist system and cage must be in good condition and in compliance with the *Occupational Health and Safety Regulation* prior to use of the system.

6.3 Operator authorization

A chimney hoist operator must be authorized by the employer to operate the hoist, and must not be so authorized until the operator has demonstrated competency in operation of the hoist and familiarity with the operating instructions and signal codes for use of the system.

6.4 Daily testing

Before first use on each work shift, the chimney hoist must be raised to its maximum operating height and lowered back to the ground or base to ensure all functions are operating correctly, all limit devices are functioning properly, and there is adequate clearance between the platform and any surrounding object such as a structure, overhead obstruction, storage rack, or scaffold, and any hazard such as energized electrical lines and equipment.

6.5 Attending the controls

The operator of a chimney hoist must not leave the hoist controls unattended unless the cage is at the lowest landing level (usually ground or grade level) and no people are in the cage.

6.6 Communication with the operator

There must be effective voice communication between the chimney hoist operator, occupants of the cage and people at each hoist landing. If there is more than one occupant in the cage, one person in the cage must be designated to be the primary person to signal the hoist operator regarding cage movement requests.

6.7 Backup communication plan

A system of hand and arm signals must be developed and implemented as an alternative in the event the primary voice communication means becomes ineffective during system use, in which case the hand and arm signals 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.

6.8 Cage not fully enclosed

A worker in a chimney hoist cage that is not a fully enclosed cage must use a personal fall protection system, meeting the applicable requirements of Part 11 of the

Occupational Health and Safety Regulation, secured to a designated anchorage point in the cage.

6.9 Maximum load

The weight or load placed in the cage must not exceed the rated capacity of the cage.

6.10 People or materials

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

6.11 Getting in or out of the cage

The cage must be at a designated landing before a person gets into or leaves the cage.

6.12 Hoisting speed

A person must not be raised or lowered on a chimney hoist at a speed greater than 76 m/min (250 fpm).

6.13 Position of gates

All gates of a chimney hoist system must be kept closed, except at the landing where the cage is located for loading or unloading.

6.14 Emergency evacuation

A plan for the evacuation of personnel from the cage in the event of loss of power or equipment malfunction must be developed and implemented and the hoist operator must know how to initiate a request for an evacuation.