

PART 23

CRANES AND HOISTS

Application

23.1 This Part applies to every workplace where a crane or hoist is used.

Safe work procedures

23.2(1) An employer must

- (a) develop and implement safe work procedures respecting the use of cranes and hoists;
- (b) train workers in the safe work procedures; and
- (c) ensure that workers comply with the safe work procedures.

23.2(2) The safe work procedures must deal with the installation, removal or replacement of the mast or boom section of a crane or hoist and all related parts.

Operator requirements

23.3(1) An employer must ensure that only a person who is authorized to practise the trade of crane and hoist operator under the *Trade of Crane and Hoisting Equipment Operator Regulation*, Manitoba Regulation 91/2000. is allowed to operate

- (a) a mobile crane with a rated load of 7,300 kg or more;
- (b) a boom truck hoist with a rated load of 7,300 kg or more; or
- (c) a tower crane.

23.3(2) An employer must ensure that the operator of a crane or hoist does not leave the controls of the crane or hoist unattended while a load is being hoisted.

Applicable standards

23.4 An employer and a supplier must ensure that

(a) a commercially manufactured crane or hoist is designed, constructed, erected, used, maintained, examined, inspected, operated and repaired in accordance with the manufacturer's specifications and the applicable requirements of the following standards:

- (i) CSA Standard W178.1-02, *Certification of Welding Inspection*

Organizations,

(ii) CSA Standard W178.2-01, *Certification of Welding Inspectors,*

(iii) CAN/CSA Standard-B167-96 (R2002), *Safety Standard for Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists, and Trolleys,*

(iv) CSA Standard C22.2 NO. 33-M1984 (R2004), *Construction and Test of Electric Cranes and Hoists,*

(v) CAN/CSA Standard-Z150-98 (R2004), *Safety Code on Mobile Cranes,*

(vi) CAN/CSA Standard-Z185-M87 (R2004), *Safety Code for Personnel Hoists,*

(vii) CAN/CSA Standard-Z248-2004, *Code for Tower Cranes,*

(viii) CAN/CSA Standard-Z256-M87 (R2006), *Safety Code for Material Hoists; or*

(b) a crane or hoist that is not commercially manufactured is

(i) designed by a professional engineer in accordance with the applicable requirements of the standards set out in clause (a),

(ii) certified by a professional engineer, and

(iii) constructed, erected, used, maintained, examined, inspected, operated and repaired in accordance with the professional engineer's requirements.

Repairs and modifications

23.5 An employer must ensure that structural repairs or modifications to the components of a crane or hoist are

(a) made only under the direction and control of a professional engineer; and

(b) certified by the professional engineer that the workmanship and quality of the materials used has restored the components to not less than their original capacity.

Maintenance and inspection schedule

23.6 An employer and a supplier must, while a crane or hoist is in their

possession,

(a) develop and implement a maintenance and inspection schedule for a crane or hoist in accordance with the manufacturer's specifications or the specifications of the applicable standard under clause 23.4(a) where no manufacturer's specifications exist; and

(b) maintain the crane or hoist in a safe operating condition.

Duty to inspect

23.7(1) An employer must ensure that a crane or hoist is inspected by the operator before the start of each work shift in order to detect any defect, malfunction or hazardous condition.

23.7(2) A supplier must ensure that a crane or hoist is inspected for any defect, malfunction or hazardous condition before the crane or hoist is supplied to any person.

Logbook for cranes

23.8(1) When a crane with a rated load capacity of one tonne or more is in the possession of an employer or a supplier, the employer or supplier must provide and maintain a logbook for the crane that records the following information:

(a) the date and time when any work was performed on the crane;

(b) the length of time in hoisting service;

(c) all defects or deficiencies and when they were detected;

(d) all inspections performed on the crane, including examinations, checks and tests;

(e) a record of any certification of repairs or modifications under section 23.5;

(f) a description of the work performed by the crane each day;

(g) in the case of a tower crane,

(i) whether or not the weight testing device was lifted for each working day, before the work of lifting loads began, and

(ii) a record of certification under section 23.25;

(h) any matter or incident that may affect the safe operation of the crane.

23.8(2) An employer and supplier must ensure that every entry in the logbook is signed by the person performing the work.

23.8(3) When a supplier provides a crane to a person, the supplier must ensure that the most current version of the logbook accompanies the crane.

23.8(4) When ownership of a crane is transferred, the person transferring ownership must ensure that all logbooks for the crane are transferred to the new owner.

Rated load

23.9(1) An employer and a supplier must ensure that a crane or hoist has a plate or weatherproof label permanently secured to it that legibly shows

(a) in the case of a commercially manufactured crane or hoist,

(i) the manufacturer's name,

(ii) the model, serial number and the year of manufacture or shipment date, and

(iii) the manufacturer's rated load; and

(b) in the case of a crane or hoist that is not commercially manufactured, the rated load certified by a professional engineer.

23.9(2) An employer and a supplier must ensure that a mobile crane or boom truck is equipped at all times with a load chart showing the rated load at all permitted boom angles and boom radiuses.

23.9(3) An employer must ensure that a tower crane has a load chart conspicuously and permanently secured to the cab that shows the manufacturer's rated loads at various radiuses of a single line, a two-part line and a four-part line separately.

23.9(4) An employer must ensure that the structural components of an A-frame, gin pole or guyed derrick are designed to withstand at least four times the rated load of the equipment.

Weight load information

23.10 An employer must ensure that the operator of a crane or hoist is provided with the information necessary to enable the operator to determine readily and accurately the weight of any load that the operator is required or permitted to raise.

Warning devices

23.11(1) When the movement of a crane or hoist may create a risk of safety or health of a person, an employer must ensure that the crane or hoist is equipped with an effective warning device that

(a) is readily accessible to the operator at the operator's working position; and

(b) is designed to warn a worker of the impending movement of the crane or hoist.

23.11(2) If an employer uses an auditory warning device, the device must have a distinct sound that is distinguishable from all other sounds at the workplace.

Boom and jib stops

23.12 When the design or operation of a crane or other hoist may result in the boom or jib falling backwards because of its return movement, an employer and a supplier must ensure that the crane or hoist is equipped with

(a) a boom stop and a limit device; and

(b) where a jib is attached, a jib stop and a limit device.

Signal person communication

23.13(1) Unless the operator of a crane or hoist has an unobstructed and clear view of its operation, an employer must designate a signal person to give the operator signals to provide for the safe operation of the crane or hoist.

23.13(2) Except for an emergency stop signal, an operator must not follow any signal given by any worker other than the designated signal person.

Load movement

23.14 When there is a risk to the safety or health of a person because of the movement of a load by a crane or hoist, an employer must ensure that the movement of the load is controlled by a tag line or clamp device.

Outrigger or stabilizer procedures

23.15 When a crane or hoist is equipped with outriggers or stabilizers, an employer must ensure that

(a) the outriggers or stabilizers

(i) are used in accordance with the manufacturer's specifications, and

(ii) are set on a solid footing or pad; and

(b) the area around the outriggers or stabilizers is kept clear of obstructions.

Riding prohibited

23.16 An employer must ensure that no person rides on a load, hook, rigging or bucket attached to a crane or hoist.

Barricading base

23.17 When there a risk of a worker being trapped or crushed by any moving part of the crane or hoist when it swings, an employer must ensure that a barricade is erected around the base of the crane or hoist.

Vehicular and pedestrian traffic safety

23.18 When hoisting takes place adjacent to or in the vicinity of a pedestrian walkway, street, highway or other public thoroughfare, an employer must provide signs, barricades and properly identified flagpersons or other measures in accordance with Part 20 (Vehicular and Pedestrian Traffic).

Temperature and weather conditions

23.19 An employer must ensure that a crane or hoist does not operate

(a) when the temperature is at or below the temperature for the safe loading conditions recommended in the manufacturer's specifications;

(b) when the wind velocity exceeds the limit recommended in the manufacturer's specifications for safe operation; and

(c) when weather conditions or other circumstances are such that the operation of the crane or hoist creates a risk to the safety or health of any person.

Plan of procedures for multiple crane lift

23.20 An employer must ensure that

(a) a plan of procedures for the operator of a lift of one load involving two or more cranes is prepared by a professional engineer; and

(b) every worker involved in the lift is trained in the plan of procedures.

Operator protection

23.21 An employer must ensure that the operator of a crane or hoist is protected from any falling material or equipment.

Tower crane requirements

23.22(1) An employer must ensure that the foundation for a tower crane is designed and certified by a professional engineer.

23.22(2) An employer must ensure that a tower crane is equipped with the following devices located at the operator's work position in clear view of the operator:

(a) a permanent load gauge that indicates the weight of the load being hoisted and immediately displays that weight to the operator;

(b) a wind velocity gauge to measure the wind velocity at or above the height of the jib.

23.22(3) An employer must ensure that a tower crane is equipped with the following safety devices:

(a) an overload device consisting of a hoist overload switch that automatically restricts the lift of the load;

(b) a travel limit device consisting of a movement overload switch that automatically restricts the radius within which the load can travel;

(c) a height limit switch that automatically prevents the cable from being over wound on the drum;

(d) a trolley travel limit device consisting of a trolley-in and a trolley-out limit switch that prevents the trolley from running to the end of its track and falling off.

23.22(4) An employer must ensure that the safety devices set out in subsection (3) are adjusted and set in accordance with the manufacturer's specifications and have their limit switches sealed.

Means of verbal communication

23.23 An employer must

(a) provide, install and maintain a direct means of verbal communication between a tower crane operator and each hook-up, rigger or signal person; and

(b) provide a direct means of verbal communication between the operators of two or more tower cranes with overlapping radiuses.

Multiple cranes

23.24 When two or more tower cranes are erected in such a manner that the radiuses of operations overlap, an employer must ensure that the operators operate the cranes so that there are no collisions between the cranes or their loads.

Structural testing and examination

23.25(1) An employer must ensure that all structural and rigging components of a tower crane undergo non-destructive testing under the direction and control of a professional engineer in accordance with the manufacturer's specifications as close as reasonably practicable to the construction project site

(a) before the crane is used for the first time in Manitoba; and

(b) if the crane is moved from project to project, before it is used after the move.

23.25(2) If a tower crane is in operation on a construction project for more than one year from the date on which the crane starts operating, an employer must ensure its structural components are examined under the direction and control of a professional engineer in accordance with the manufacturer's specifications.

23.25(3) An employer must ensure that the results of the testing or examination required under subsections (1) and (2) are certified by a professional engineer in a report that clearly identifies the crane and the components to which the information relates.

OVERHEAD CRANES

Positive lockout system

23.26 An employer must ensure that an overhead electric crane is provided with a positive lockout system so that power is shut off when a worker is maintaining or servicing the crane.

Rail stops

23.27 An employer must ensure that a craneway at a workplace is equipped with adequate rail stops to prevent the overhead electric crane from contacting any obstruction or overrunning the end of the rails.

Upper limit devices

23.28 An employer must ensure that

(a) an overhead crane has a hoist equipped with a working upper limit device; and

(b) the upper-limit switch is not used as a braking device.

Safety latch

23.29 An employer must ensure that a hoisting hook is equipped with a safety latch or similar security device.

MATERIAL HOISTS

Inspection and testing

23.30(1) Subject to subsection (2), an employer must ensure that a material hoist is tested before being used.

23.30(2) A material hoist does not have to be tested if it has been tested within seven days before its last use.

Barricading base

23.31(1) An employer must provide a fence or other suitable barricade at the base of a material hoist to prevent unauthorized entry of any person.

23.31(2) A worker must not use the base of a material hoist to access an adjacent structure.

ROOFER'S HOISTS

Employer obligations

23.32(1) An employer must ensure that the following requirements are complied with when a roofer's hoist is used:

- (a) bolts or pins used to interconnect component parts of a roofer's hoist are equipped with safety pins that prevent them from being dislodged;
- (b) drivers, pulleys and belts are effectively guarded;
- (c) a roofer's hoist is only used for vertical lifting;
- (d) a roofer's hoist is in a level position.

23.32(2) An employer must ensure that a roofer's hoist has counterweights that are

- (a) designed as a component part of the hoist to remain securely attached

to the hoist until all hoisting is completed; and

(b) heavy enough to counterbalance four times the maximum weight of the load being lifted.

23.32(3) An employer must ensure that roofing material, bagged material or any other construction material is not used as counterweight on a roofer's hoist.

RIGGING

Rigging specifications

23.33 An employer must ensure that

(a) commercially manufactured rigging is assembled, used, maintained, inspected and dismantled in accordance with the manufacturer's specifications; and

(b) rigging that is not commercially manufactured is assembled, used, maintained, inspected and dismantled in accordance with the specifications of a professional engineer.

Spreader bar requirements

23.34 An employer must ensure that a spreader bar is designed and certified by a professional engineer, and constructed, assembled, maintained, inspected, used and dismantled in accordance with the professional engineer's specifications.

Rigging and spreader bar requirements

23.35 An employer must ensure that rigging and spreader bars are

(a) suitable for and capable of supporting the load being rigged;

(b) capable of supporting at least five times the maximum weight of the load which will be or is likely to be imposed; and

(c) labelled or marked with their rated load and weight.

Containers

23.36 An employer must ensure that a container used for a load being lifted is designed for that particular purpose and is labelled or marked with its weight and rated load.

Hook block

23.37 An employer must ensure that a hook block has its rated load and

weight legibly cast or stamped on it in a conspicuous location.

VEHICLE LIFTS

Vehicle lift requirements

23.38(1) An employer must ensure that a vehicle lift meets the requirements of the following standards:

- (a) ANSI Standard ANSI/ALI ALCTV-1998, *Automotive Lifts - Safety Requirements for Construction, Testing and Validation*;
- (b) ANSI Standard ANSI/ALI ALOIM-2000, *Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance*;
- (c) ANSI Standard ANSI/ALI ALIS-2001, *Standard for Automotive Lifts - Safety Requirements for Installation and Service*.

23.38(2) An employer must ensure that a pneumatic or hydraulic vehicle lift has controls operated by constant manual pressure.

23.38(3) An employer must ensure that the operator of a vehicle lift

- (a) remains at the controls while the vehicle lift is in motion; and
- (b) does not block the controls during raising and lowering.

23.38(4) An employer must ensure that no worker is under a suspended load unless the load is supported by

- (a) a vehicle lift designed for that purpose; or
- (b) rated stands or blocks, other than jacks, that are designed, constructed and maintained to support the load and placed on firm foundations.