

Safety Sheet 6 – Cranes, Rigging, Hoisting and Lifting Devices

Consult the *Ontario Occupational Health and Safety Act and its Regulations*, as well as the relevant *CSA Standard* for detailed information on cranes, hoists and other lifting devices.

A lifting device is defined by Ontario Regulation 851 (Industrial Establishments) as a “device that is used to raise or lower any material or object and includes its rails and other supports but does not include a device to which the *Elevating Devices Act* applies”

Competent person is defined by the Ontario Occupational Health & Safety Act as a person who (i) is qualified because of knowledge, training and experience to organize the work and its performance; (ii) is familiar with this Act and the regulations that apply to the work and (iii) has knowledge of any potential or actual danger to health & safety in the workplace.

1. A lifting device shall be operated only by a competent person or by a worker being directly supervised and in view of the competent person.
2. The training and instruction record shall include the person's name, the dates on which training and instruction took place and must be available under request.
3. Only properly engineered equipment that is approved by the Canadian Standards Association (equivalent or exceeding) shall be used and operated appropriately. It must be constructed to adequately ensure the safety of all workers and others in the work area.
4. The equipment must be thoroughly examined by a competent person to determine its capability of handling the maximum load as rated, prior to being used the first time and thereafter as often as necessary but not less frequently than recommended by the manufacturer and in any case, at least once a year (O. Reg. 851, Sec 51). See also, the Safety Standard for Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists, and Trolleys (CSA B167-96).
5. The University shall keep a record of each examination conducted for as long as the equipment remains on the premises and for one year after the equipment is removed; the record shall be signed by the person who conducted the inspection (O. Reg. 851 sec 51).
6. The examination record signed by the competent person conducting the inspection shall be kept and must clearly identify the maximum rated load that the device is capable of lifting under any operating condition. Furthermore, the maximum rated load that the device is capable of lifting under any operating condition shall be legibly cast, marked or stamped on the device where it can be readily seen by the operator (O. Reg. 213/91 sec. 111 and Reg. 851, section 51).
7. Where a lifting device is equipped with the limit switches, the switches shall, automatically cut off the power and apply the brakes, and not be used as an operating control unless designed for such use, in which case a second limit switch shall be located behind the control limit switch.
8. A lifting jack shall be equipped with a positive stop to prevent over-travel or, if a positive stop is not practicable, with an over-travel indicator (O. Reg. 213/91 sec. 111).
9. There shall be one log book for each crane on the premises.
10. The equipment shall have adequate protection (such as a canopy or screen) for the operator area where the operator may expose to hazard of falling material (O. Reg. 851 sec 51).

11. If the equipment is a pneumatic or hydraulic hoist, the equipment must have controls that automatically return to their neutral position once released.
12. Hoisting controls operated from other than a cab or cage shall be located so that they can be operated at a safe distance from a load being lifted and shall automatically return to their neutral position when released.
13. No part of the load shall pass over any person at any time.
14. Special consideration shall be given when a lifting device is used for raising or lowering a worker (See section 52 of O. Reg. 851).
15. Special consideration shall be given when working near overhead obstructions or power lines (See section 60 of O. Reg. 851).
16. Equipment controls must be locked-out when the device is not in operation and trained / certified personnel are not in the work area.
17. The supervisor shall develop an emergency rescue procedure and communicate these procedure(s) verbally and in writing to all person(s) involved in the process.

Safety considerations when using cranes, lifting devices and other equipment:

Before moving a load:

- Inspect equipment, cables, hooks, and document the inspection – keep for duration of equipment possession plus 1-year after equipment is no longer on premise.
- Ensure all loose materials, parts, blocking and packaging have been removed from the load before lifting.
- Remove any slack from the sling and hoisting ropes before lifting the load.
- Make sure that the lifting device sits in the saddle of the hook

To move a load safely:

- Move crane controls smoothly. Avoid abrupt, jerky movements of the load.
- Follow signals only from one signaler in charge of the lift.
- Make sure everyone is away from the load before hoisting; to do so - sound a bell, siren or other warning device and slowly begin hoisting the load.
- Ensure nothing links or catches on the load while raising it or traveling.
- Ensure that nothing obstructs the movement of a load.
- Keep the load under control when lowering a load. If the braking system fails, the load can usually be lowered by reversing the hoist controller to the first or second point.

Before leaving a crane

- Remove the load hanging on crane hooks
- Raise all hooks to a mid-position
- Stop the crane at a designated location
- Place all controls in the “OFF” position
- Open the main switch to the “OFF” position

When operating a crane, DO NOT:

- Operate a crane if limit switches are out of order, or if cables show defects.
- Lower the blocks below the point where less than two full wraps of cable remain on the drum.
- Attempt lifts beyond the rated load capacity of a crane or slings.
- Lift a load from the side. Centre the crane directly over the load before hoisting to avoid swinging the load.
- Allow anyone to ride on a load or hooks.
- Leave slings dangling from the load hook. Have sling hooks placed on the sling ring when carrying slings to the load.
- Raise loads higher than necessary to clear objects.
- Pass a load over workers.
- Reverse a motor until it has come to a full stop except to avoid accidents.
- Walk on the crane runway.
- Leave suspended loads unattended.