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Z150-16

Safety code on mobile cranes

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Safety code on mobile cranes



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Preface

This is the fourth edition of CSA Z150, *Safety code on mobile cranes*. It supersedes the previous editions published in 2011, 1998, and 1974.

This Standard is designed to

- a) guard against and minimize injury to workers, and otherwise provide for the protection of life, limb, health, and property, by specifying minimum safety requirements for mobile cranes;
- b) provide direction and guidance to manufacturers and buyers of mobile cranes regarding the minimum standards expected of such machines in Canada;
- c) provide direction and guidance to owners, employers, supervisors, workers, users, and others concerned with, responsible for, or involved in the application and use of mobile cranes; and
- d) guide Canadian federal, provincial/territorial, and other regulatory bodies in the development and promulgation of appropriate health and safety legislation and directives concerning mobile cranes.

This edition of CSA Z150 includes an expansion of the scope to cover requirements for locomotive cranes as well as updates to the requirements for construction and characteristics of mobile cranes, inspection, testing and maintenance, operation, and wire rope.

This Standard was prepared by the Technical Committee on Mobile Cranes, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety.

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
- 3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
- 4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:*
 - a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
 - b) *provide an explanation of circumstances surrounding the actual field condition; and*
 - c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
- 5) *This Standard is subject to review five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:*
 - a) *Standard designation (number);*
 - b) *relevant clause, table, and/or figure number;*
 - c) *wording of the proposed change;*
 - d) *rationale for the change.*

Z150-16

Safety code on mobile cranes

1 Scope

1.1

This Standard describes the design, construction, load rating, installation, erection, inspection, maintenance, repair, modification, test, and operation of lattice and telescopic boom mobile cranes.

Note: See Annex A for illustrations of mobile cranes and Annex B for illustrations of parts of a mobile crane.

1.2

This Standard applies only to machines that have all of the following fundamental characteristics:

- a) the crane comprises, or is mounted on, a non- or self-propelled, crawler- or wheel-mounted mobile base;
- b) the crane is designed and manufactured for the primary purpose of hoisting and lowering loads by means of tackle suspended from a boom;
- c) the boom is lattice or telescopic and capable of being elevated and lowered in the vertical plane and of being rotated (swung) from side to side in the horizontal plane;
- d) the tackle is suspended from the boom and is capable of being increased and diminished in length; and
- e) the crane utilizes an engine(s) or motor(s) of sufficient power to
 - i) elevate and lower the boom in the vertical plane with the load suspended from the tackle;
 - ii) rotate (swing) the boom in the horizontal plane with the load suspended from the tackle;
 - iii) increase and diminish the length of the tackle with the load suspended from the tackle; and
 - iv) in the case of a self-propelled crane, propel the vehicle, carrier, or base on which or to which the boom and hoist mechanism is attached.

1.3

This Standard applies to crawler-mounted cranes, commercial truck-mounted cranes, boom trucks, wheel-carrier-mounted cranes, railway cranes, locomotive-mounted cranes, and rail-mounted cranes, as well as any variations thereof that retain the fundamental characteristics of these cranes.

1.4

This Standard is applicable only to machines when they are used for lifting (hoisting).

Note: Some basic machine types within this scope are used alternatively for hoisting service and for applications not considered to be hoisting service. All of the requirements of this Standard are applicable to such machines when used for hoisting service. Clause 4.14 contains requirements for machines when used in other than hoisting service.

1.5

Machines within the scope of Clause 1.3, and equipped with hooks, magnets, grapples, clam shell buckets, orange peel buckets, and other devices intended to connect or attach the tackle to the load for the purpose of hoisting or lowering a freely suspended load, are considered to be in lifting (hoisting) service.

1.6

This Standard does not apply to

- a) machines within the scope that have been converted or adapted for uses not considered to be lifting (hoisting) services. These conversions and applications include power shovels, excavators, draglines, concrete pumps (see CAN/CSA-Z151), conveyors, augers, drills, and amusement rides (e.g., bungee jumping);
- b) articulating boom (knuckle boom) cranes (see CAN/CSA-Z150.3);
- c) hydraulic and cable-operated excavating equipment, (e.g., power shovels and backhoes);
- d) automotive wreckers and tow trucks designed to clear wrecks and haul vehicles;
- e) side boom tractors, as used in pipeline work (see ASME B30.14);
- f) mobile lifting devices designed specifically for use in power line and electric utility service, such as digger derricks (radial boom derricks) intended to auger holes for and to set power and telephone poles (see ANSI/ASSE A10.31);
- g) vehicle-mounted aerial devices (see CAN/CSA-C225);
- h) trolley boom cranes (under running trolley hoist);
- i) truck-mounted overhead, gantry, and bridge cranes;
- j) stacker cranes;
- k) self-propelled elevating work platforms (see CAN/CSA-B354.1, CAN/CSA-B354.2, and CAN/CSA-B354.4);
- l) lift trucks (forklifts) equipped with booms; and
- m) tower cranes (i.e., fixed, climbing, mobile, travelling, and self-erecting) (see CAN/CSA-Z248).

1.7

The values given in SI units are the units of record for the purposes of this Standard. The values given in parenthesis are for information and comparison only.

1.8

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below:

CSA Group

CAN/CSA-B354.1-04 (R2016)

Portable elevating work platforms