



**CSA
Group**

B167-16

**Overhead cranes, gantry cranes,
monorails, hoists, and jib cranes**

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Preface

This is the fourth edition of CSA B167, *Overhead cranes, gantry cranes, monorails, hoists, and jib cranes*. This edition supersedes the following editions: the third edition, published under the title *Overhead travelling cranes – Design, inspection, testing, maintenance, and safe operation* in 2008; the second edition, entitled *Safety Standard for Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists, and Trolleys*, published in 1996; and the first edition, entitled *General Purpose Electric Overhead Travelling Cranes*, published in 1964.

This Standard incorporates excerpts from ASME B30.2 and ASME B30.9, which are reprinted by permission of The American Society of Mechanical Engineers. All rights reserved.

This Standard was prepared by the Technical Committee on Overhead Travelling 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; and*
 - d) *rationale for the change.*

B167-16

Overhead cranes, gantry cranes, monorails, hoists, and jib cranes

1 Scope

1.1

This Standard specifies minimum requirements for the design, inspection, testing, maintenance (including modifications and upgrades), and safe operation of

- a) cranes, including
 - i) overhead travelling cranes;
 - ii) jib cranes; and
 - iii) gantry and wall cranes;
- b) monorails;
- c) hoists; and
- d) other material lifting equipment having similar characteristics to the items listed above.

1.2

This Standard includes requirements for permanently installed cranes, and for permanent and movable hoists. Included are requirements for electric and air-powered hoists, and manually operated hoists.

Notes:

- 1) *In this Standard, unless otherwise specified, the terms “crane” and “hoist” are used generically to refer to all lifting devices within the scope. If a specific type of crane or hoist is being addressed, the appropriate term will be used, e.g., gantry crane, monorail, or jib crane.*
- 2) *Although there are significant differences in scale and complexity between small hoists and large overhead cranes, there are also important similarities in terms of potential hazards and the need for training. This Standard addresses common requirements for all cranes and hoists. In the case of smaller portable units, the requirements in this Standard are supplemented by references to relevant ASME standards for specific equipment.*

1.3

This Standard does not include detailed design requirements for cranes and hoists.

Note: *This Standard contains essential information about crane design and construction, to provide a common reference and set of expectations for manufacturers, distributors, and purchasers. Detailed design requirements can be found in the North American and international standards referenced in Annex B.*

1.4

The following are not covered in this Standard:

- a) mobile cranes and tower cranes;
Note: *These are covered in CAN/CSA-Z150 and CAN/CSA-Z248, respectively.*
- b) personnel hoisting and elevating devices;
Note: *These are covered in ASME A17.1/CSA B44 and CAN/CSA-Z185, respectively.*
- c) lifting equipment for a single, permanently guided load (e.g., winching mechanism for a water control gate on a dam);

- d) supporting building structures, including crane runways, other than obtaining confirmation of structural integrity and compliance to relevant code requirements; and

Note: Refer to provincial/territorial building codes, and to CSA S16.

- e) below-the-hook lifting devices, slings and rigging hardware, except as they relate to operator training.

Note: Below-the-hook equipment is addressed in other ISO and ASME Standards.

1.5

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

C22.1-15

Canadian Electrical Code, Part I

C22.2 No. 14-13

Industrial control equipment

C22.2 No. 27-09 (R2013)

Busways

C22.2 No. 33-M1984 (R2014)

Construction and test of electric cranes and hoists

CAN/CSA-C22.2 No. 94-M91 (R2011)

Special purpose enclosures

G40.20-13/G40.21-13

General requirements for rolled or welded structural quality steel/Structural quality steel

S16-14

Design of steel structures