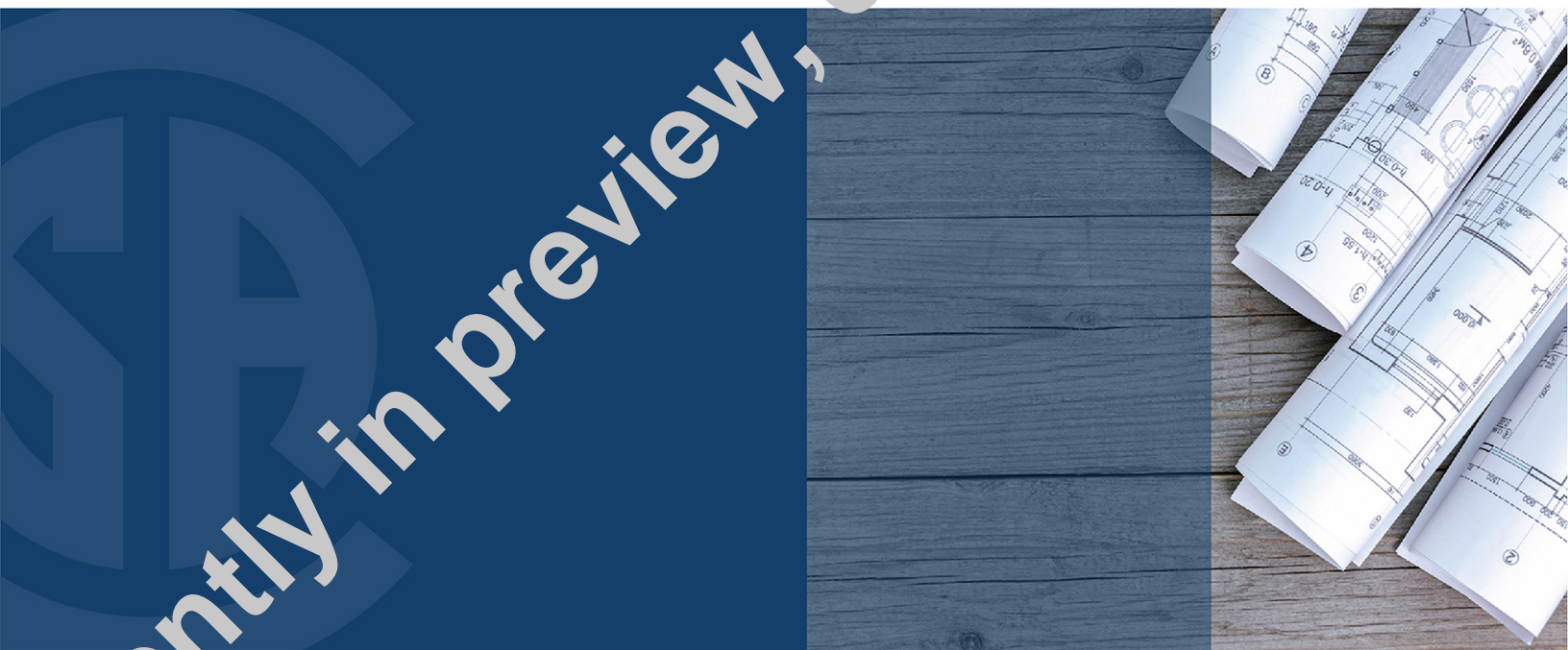


# Building commissioning



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**Z320-11**  
**Building commissioning**



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# Preface

This is the first edition of CSA Z320, *Building commissioning*. This Standard provides guidelines for the commissioning of buildings and all related building systems, and has been developed to deal with buildings and/or their major systems as a whole, rather than as separate individual stand-alone components. It applies to new construction and to renovations of existing buildings or facilities.

The intent of this Standard is to provide a comprehensive, integrated, consistent, and managed process to ensure and document the performance of a complete building and its major systems in meeting the basis of design and operational requirements of the owner.

Major building systems included are

- architectural systems (building envelope and interior space assemblies that are environmental separators);
- vertical and horizontal transportation systems;
- electrical systems (incoming, main, and branch distribution; fire alarm and detection systems);
- mechanical systems (HVAC, plumbing, fire protection, and refrigeration); and
- control systems and integration (BAS, energy management control systems, lighting control systems).

The Technical Committee has developed this Standard with the intent to guide the commissioning process so that it begins with commissioning the individual components and progresses to commissioning the complete integrated building system as a whole.

The intended users of this Standard include workers and professionals who perform technical functions associated with any of these phases of operation, as well as stakeholders who have an interest in building safety or related quality assurance (i.e., developers, general contractors, property marketers, regulators, and consumers). This Standard may also facilitate certification to green building rating systems.

This Standard has been developed to assist the commissioning team in the preparation and implementation of a commissioning plan. A commissioning plan specifies commissioning requirements for newly installed or renovated building systems and includes, but is not limited to, descriptions of the following:

- the commissioning process;
- the resources required to complete commissioning;
- the responsibilities of the commissioning team; and
- the sequence and integration of commissioning activities.

The Technical Committee has developed electronic check sheets that correspond to the commissioning process outlined in this Standard. It is intended that the electronic check sheets will allow the user to tailor a final checklist to correspond to the individual building type and include the full range of building components and systems that corresponds to the specific project. The check sheets application include access to templates in Microsoft Excel that can be completed, updated, and saved locally, enabling a one-time set-up of company and project specific details. Check sheet templates are available for major building systems including mechanical, electrical, and controls and integration.

The Technical Committee has developed nonmandatory annexes (written in mandatory language) to provide further explanatory information. Included in these annexes are sections on recommissioning and retro-commissioning.

**Note:** *Mandatory language will allow an individual/organization to reference an annex as a project specification.*

If commissioning health-care facilities, also refer to CSA Z318.0, *Commissioning for healthcare facilities*.

This Standard was prepared by the Technical Committee on CSA Z320 Building Commissioning and Subcommittees on Architectural Systems, Mechanical Systems, Electrical Systems, Vertical and Horizontal Transportation Systems, and Control Systems and Integration, under the jurisdiction of the Strategic Steering Committee on Building Products and Systems, and has been formally approved by the Technical Committee.

CSA acknowledges that the development of this Standard and the accompanying electronic check sheets was made possible by the financial support of a consortium of stakeholders. This consortium was championed by the Mechanical Contractors Association of Canada (MCAC) and its provincial and urban affiliate associations, and also includes

- Defence Construction Canada (DCC);
- Public Works and Government Services Canada (PWGSC);
- The Canadian Construction Association (CCA);
- Mulvey & Banani International Inc.;
- The Mitchell Partnership; and
- Natural Resources Canada (NRCan).

March 2011

**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 publication 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 publication.
- (4) To submit a request for interpretation of CSA Standards, please send the following information to [inquiries@csa.ca](mailto:inquiries@csa.ca) and include “Request for interpretation” in the subject line:
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  - (b) provide an explanation of circumstances surrounding the actual field condition; and
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  - (a) Standard designation (number);
  - (b) relevant clause, table, and/or figure number;
  - (c) wording of the proposed change; and
  - (d) rationale for the change.

# Z320-11

## **Building commissioning**

### **1 Scope**

#### **1.1 General**

##### **1.1.1**

This Standard provides guidelines for the commissioning of buildings and all related building systems. It applies to new construction and to renovations of existing facilities. It does not apply to operational commissioning of equipment and systems installed by the owner or others.

##### **1.1.2**

This Standard is intended to assist the commissioning team in the preparation and implementation of a commissioning plan. This plan specifies commissioning requirements for newly installed or renovated building systems and includes, but is not limited to, descriptions of the following:

- (a) the commissioning process;
- (b) the resources required to complete commissioning;
- (c) the responsibilities of the commissioning team; and
- (d) the sequence and integration of commissioning activities.

#### **1.2 Specific systems**

##### **1.2.1 General**

The systems covered in this Standard are classified as

- (a) architectural;
- (b) vertical and horizontal transportation;
- (c) electrical;
- (d) mechanical; and
- (e) control and integration.

##### **1.2.2 Site services**

For the purposes of this Standard, commissioning will be limited to the building enclosure and not include site services outside the building. Any exceptions will be identified in the commissioning plan.

#### **1.3 Terminology**

In CSA standards, “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 (nonmandatory) to define their application.