

Special requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities



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Preface

This is the third edition of CSA Z317.2, *Special requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities*, one of a series of Standards on the special requirements for the design, construction, and maintenance of health care facilities. It supersedes the previous editions, published in 2001 and 1991.

This Standard is intended for use by architects, engineers, planners, consultants, and health care facility staff to ensure the efficient design, construction, and maintenance of HVAC systems. This Standard includes operational, maintenance, and monitoring requirements for HVAC systems that will reduce the risk of transmission of infection among building occupants, including patients, staff, and visitors.

Significant changes in this edition include

- (a) expansion of general and detailed design requirements;
- (b) expansion of the definition of health care facility;
- (c) additional information on the commissioning team, plan, and process;
- (d) new requirements for infection prevention and control, energy efficiency, sustainability, reliability, and emergency preparedness; and
- (e) additional information on operations, maintenance, and monitoring.

This Standard was prepared by the Subcommittee on Special Requirements for HVAC Systems in Health Care Facilities, under the jurisdiction of the Technical Committee on Health Care Facility Engineering and Physical Plant and the Strategic Steering Committee on Health Care Technology, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

February 2010

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.
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Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA’s periodical Info Update, which is available on the CSA Web site at www.csa.ca.

Z317.2-10

Special requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities

0 Introduction

0.1

Indoor air quality, an important health and wellness consideration, is especially critical to sick, infirm, and injured persons in health care facilities (HCFs). Patients with infections can be contagious as well as susceptible to further infection. Inadequate indoor air quality can complicate their care and recovery and negatively affect the health and wellness of other occupants. The proper design, operation, and maintenance of HVAC systems can reduce the risk of infection transmission among patients, staff, and visitors.

0.2

With optimal HVAC design, HCFs can develop conservation strategies that promote the judicious use of renewable and non-renewable resources.

1 Scope

1.1

This Standard provides requirements for HVAC systems in HCFs. In general, these requirements are more stringent than those applied to the planning, design, construction, commissioning, maintenance, and operation of HVAC systems in non-health-care facilities.

Note: See [Annexes A](#) and [B](#) for general information on HVAC systems and guidelines for users, respectively.

1.2

This Standard

- (a) specifies minimum values for certain parameters;
- (b) establishes the suitability of different design options;
- (c) establishes recommendations for zoning, controls, and monitoring; and
- (d) sets targets for energy conservation.

1.3

This Standard is not intended to preclude the use of design concepts and the adoption of installation, operations, and maintenance procedures more stringent than those specified in this Standard.

1.4

This Standard applies to new buildings, additions to existing buildings, and alterations to existing buildings. Alterations include changes in function or size of spaces and the rearrangement, replacement, or addition of HVAC equipment, but do not include routine maintenance and service.

1.5

This Standard does not address requirements for other elements of a building such as the

- (a) envelope;
- (b) structure;
- (c) electrical power and lighting systems;
- (d) plumbing system; and
- (e) fire protection system.

Note: *These elements can directly affect the design, performance, and/or operation of HVAC systems.*

1.6

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; “may” is used to express an option or that which is permissible within the limits of the standard; and “can” is used to express possibility or capability. 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, including all amendments published thereto.

CSA (Canadian Standards Association)

Z32-09

Electrical safety and essential electrical systems in health care facilities

Z314.3-09

Effective sterilization in health care facilities by the steam process

Z314.9-09

Installation, ventilation, and safe use of ethylene oxide sterilizers in health care facilities

Z317.1-09

Special requirements for plumbing installations in health care facilities

CAN/CSA-Z317.13-07

Infection control during construction, renovation, and maintenance of health care facilities

Z318.0-05

Commissioning of health care facilities

Z1600-08

Emergency management and business continuity programs

Z7396.1-09

Medical gas pipeline systems — Part 1: Pipelines for medical gases and vacuum

AAMI (Association for the Advancement of Medical Instrumentation)

TIR34:2007

Water for the reprocessing of medical devices