

Emergency electrical power supply for buildings



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CSA Standards Update Service

C282-09

December 2009

Title: *Emergency electrical power supply for buildings*

Pagination: **52 pages** (viii preliminary and 44 text), each dated **December 2009**

To register for e-mail notification about any updates to this publication

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CSA Standard

C282-09

***Emergency electrical power supply
for buildings***



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*Published in December 2009 by Canadian Standards Association
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
1-800-463-6727 • 416-747-4044*

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ISBN 978-1-55491-329-9

Technical Editor: Tony Joseph

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Preface

This is the fifth edition of CSA C282, *Emergency electrical power supply for buildings*. It supersedes the previous editions published in 2005, 2000, 1989, and 1977.

The main changes from the previous edition are as follows:

- (a) revisions to the Scope to include emergency generators and associated equipment intended for use in health care facilities (HCFs) in accordance with Clause 6 of CSA Z32, *Electrical safety and essential electrical systems in health care facilities* (see [Clause 1.1\(b\)](#));
- (b) revisions to the Scope to include electrical power supply systems designed and installed to operate for purposes beyond emergency situations (see [Clause 1.2](#));
- (c) new and revised definitions;
- (d) addition of references to CSA Z32;
- (e) clarification of labelling requirements for load testing (see [Clause 6.1.1.4](#));
- (f) enhanced requirements for outdoor enclosures (see [Clause 6.2](#));
- (g) enhancement of power supply performance requirements to include the requirements for HCFs in accordance with CSA Z32 (see [Clause 6.4.1](#));
- (h) clarification of the requirements for layout and working space for compliance with CSA Z32 requirements (see [Clause 6.5.1](#));
- (i) clarification of the emergency electrical power supply requirements for multiple buildings (see [Clause 6.9.2](#));
- (j) clarification of the control sequence requirements to meet the requirements of HCFs in accordance with CSA Z32 (see [Clause 6.12](#));
- (k) clarification of the fuel supply requirements to meet the requirements for HCFs in accordance with CSA Z32 (see [Clauses 7.3.1](#) and [7.3.2](#));
- (l) clarification of the installation requirements for transfer switches (see [Clause 9.1.5](#));
- (m) clarification of the installation and operational requirements for manual bypass switches in buildings of Institutional Occupancy (Group B) and in Residential Occupancy (Group C) (see [Clause 9.5.1](#));
- (n) enhancement of the requirements for full-load test for compliance with CSA Z32 (see [Clause 10.3.1](#));
- (o) addition of requirements for voltage and frequency step load response for generators intended for use in Class A and B HCFs (see [Clause 10.3.5](#));
- (p) addition of oil analysis requirements for compliance with CSA Z32 (see [Clause 10.8](#));
- (q) revisions to [Tables 1](#) and [5](#) to add notation of the function and maintenance requirements of the position-indicating valve that is specified in [Clause 7.3.6](#) (see [Tables 1](#) and [5](#));
- (r) addition of requirements for utility-fed emergency generator gas regulator station to provide guidance for the design of gas piping systems for supplying gas to emergency electrical power generators (see [Clause B.11](#));
- (s) addition of guidelines for service requirements for electrical power supply systems that operate for purposes beyond emergency situations (see [Clause B.21](#));
- (t) enhancement of the requirements for diesel fuel handling and storage (see [Clause B.22](#)); and
- (u) addition of guidelines for the design of emergency electrical power supply systems to be used for functions other than providing power for life safety loads (see [Annex D](#)).

This Standard was prepared by the Technical Committee on Emergency Electrical Power Supply for Buildings, under the jurisdiction of the Strategic Steering Committee on Fuel-Burning Equipment, and has been formally approved by the Technical Committee.

December 2009

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) *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*
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C282-09

Emergency electrical power supply for buildings

1 Scope

1.1

This Standard applies to the design, installation, operation, maintenance, and testing of emergency generators and associated equipment for providing an emergency power supply to electrical loads

- (a) in buildings and facilities when the normal power supply fails and an emergency electrical power supply is required by the *National Building Code of Canada (NBCC)*; and
- (b) of essential electrical systems, where emergency generators are intended for use in health care facilities (HCFs) in accordance with Clause 6 of CSA Z32.

Notes:

- (1) For guidelines on emergency electrical power supply for life-support equipment, see [Annex A](#).
- (2) In this Standard, the term “building” also includes facilities.

1.2

Electrical power supply systems designed and installed to operate for purposes beyond emergency situations may be used for emergency electrical power supply provided that they meet the requirements of this Standard.

Note: For guidelines on the use of emergency electrical power supply equipment for purposes beyond emergency situations see [Annex D](#).

1.3

This Standard does not cover

- (a) any emergency power supply provided from storage batteries or other sources of uninterrupted power supply (UPS);
- (b) application of an emergency power supply; and
- (c) design and construction of unit equipment for emergency lighting that complies with CSA C22.2 No. 141.

1.4

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.

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.