

# **Electric storage-tank water heaters**



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# Contents

Technical Committee on Consumer and Commercial Products	3
Subcommittee on Electric Storage-Tank Water Heaters	5
Preface	7
<b>1 Scope</b>	<b>8</b>
<b>2 Reference publications</b>	<b>9</b>
<b>3 Definitions</b>	<b>10</b>
<b>4 General requirements</b>	<b>10</b>
<b>5 Construction</b>	<b>11</b>
5.1 General	11
5.2 Enclosures for current-carrying parts	11
5.3 Protection against corrosion	12
5.4 Mechanical assembly	12
5.5 Stability	12
5.6 Supply connections for permanently connected heaters	13
5.7 Supply connections for Portable cord-connected heater	14
5.8 Terminal parts and leads	14
5.9 Electrical insulation	15
5.10 Thermal insulation	15
5.11 Wiring	15
5.12 Heater elements	16
5.13 Thermostats and switches	17
5.14 Temperature controls	18
5.14.1 Temperature-regulating controls	18
5.14.2 Temperature-limiting controls	18
5.15 Lampholders	18
5.16 Overcurrent protection	19
5.17 Electromagnetic interference (EMI) filters	19
5.17.2	19
5.18 Spacings	20
5.19 Transformers	20
5.20 Bonding	20
5.21 Hydrostatic test pressure	20
5.22 Working pressure	20
5.23 Volume	21
<b>6 Markings</b>	<b>21</b>
6.7 Scald hazard label	22
<b>7 Tests</b>	<b>23</b>
7.1 General	23

7.2	Rating	24
7.3	Temperature	24
7.3.1	General	24
7.3.2	Test conditions (normal)	25
7.3.3	Test conditions (abnormal)	26
7.3.4	Temperature-limiting control cut-out	26
7.4	Dielectric strength	26
7.5	Performance of thermally operated controls	26
7.5.1	General	26
7.5.2	Calibration	27
7.5.3	Overload	27
7.5.4	Endurance	27
7.6	Performance of fusible links	27
7.7	Hydrostatic pressure test	28
7.8	Tank capacity	28
7.9	Strain relief	28

## **8 High-temperature water heater** 29

8.1	General	29
8.2	Temperature controls	29
8.2.1	Temperature-regulating controls	29
8.2.2	Temperature-limiting controls	29
8.3	Temperature-limiting control cut-out	29

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Annex A (normative) — Markings — French translation 32

Annex B (normative) — Scald hazard label 34

# Preface

This is the sixth edition of CSA C22.2 No. 110 *Electric storage-tank water heaters*, one of a series of Standards issued under *Part II* of the *Canadian Electrical Code*. It supersedes the previous editions published in 1994, 1990, 1981, 1973, and 1957 under the title *Construction and Test of Electric Storage-Tank Water Heaters*.

This edition updates the 1994 edition of C22.2 No. 110. The major differences include the update of supply connection requirements, overcurrent protection requirements, spacing requirements, and strain relief test requirements. It also addresses general maintenance revisions including reference publication updates.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Electric Storage-Tank Water Heaters under the jurisdiction of the Technical Committee on Consumer and Commercial Products and the Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the Technical Committee.

**Interpretations:** The Strategic Steering Committee on Requirements for Electrical Safety has provided the following direction for the interpretation of standards under its jurisdiction: “The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant CSA committee interpretation has not already been published, CSA Group's procedures for interpretation shall be followed to determine the intended safety principle.”

## 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](mailto: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](http://standardsactivities.csa.ca).*
- 5) *This Standard is subject to review within 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](mailto: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.*

# CSA C22.2 No. 110:19

## Electric storage-tank water heaters

### 1 Scope

#### 1.1

This Standard applies to both cord-connected and permanently connected storage-tank water heaters\*, having tanks less than 610 mm inside diameter, for use on nominal system voltages of 600 V and less, and designed to be used in nonhazardous household and commercial locations in accordance with the Rules of the *Canadian Electrical Code, Part I*.

\* For convenience only, the shorter term water heater is used herein.

#### 1.2

This Standard applies to water heaters that provide for the storage of hot water.

Note: The water is heated by immersion heater elements within the tank, wrap around or other form of surface contact heater elements, or electrically heated circulation type units located either within the jacket or externally. Other types of electric heating, except as excluded by Clause 1.3, may be accepted subject to investigation.

This Standard applies to the water-heater section of kitchen units, combined with a cooking range, refrigerator, water pump, etc.

#### 1.3

This Standard does not apply to

- immersion type water heaters (see Clause 1.1);
- side-arm type water heaters not attached to a storage tank; or
- immersed-electrode type water heaters.

#### 1.4

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.

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