



ANSI Z21.98-2015 • CSA 4.10-2015
(reaffirmed 2020)

Non-metallic dip tubes for use in water heaters



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Revision History

ANSI Z21.98-2015 • CSA 4.10-2015, Non-metallic dip tubes for use in water heaters

Revisions from the first edition	Revision symbol (in margin)
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American National Standard

ANSI Z21.98-2015 • CSA 4.10-2015 Non-metallic dip tubes for use in water heaters



American National Standards Institute, Inc.

IGAC

International Gas Advisory Council



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Preface

This is the third edition of ANSI Z21.98 • CSA 4.10, *Non-metallic dip tubes for use in water heaters*. It supersedes the previous editions published in 2014 and 2012.

This Standard was prepared by the Z21/CSA Joint Technical Sub-Committee on Standards for Gas-Fired Water Heaters, under the jurisdiction of the Technical Committee on Gas Appliances and Related Accessories, the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories, and the Strategic Steering Committee on Standards for Fuel Burning Appliances, and has been formally approved by the Technical Committee(s), American National Standards Institute, and the Interprovincial Gas Advisory Council.

Interpretations: The Strategic Steering Committee on Standards for Fuel Burning Appliances 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 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) *This Standard contains SI (Metric) units corresponding to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (IEEE/ASTM SI 10, American National Standard for Metric Practice, or ISO 80000-1:2009, Quantities and units – Part 1: General, is used as a guide in making metric conversion from yard/pound quantities.) If a value for a measurement and a corresponding value in other units are stated, the first stated value is to be regarded as the requirement. The given corresponding value may be approximate. If a value for a measurement and a corresponding value in other units are both specified as a quoted marking requirement, the first stated unit, or both, are to be provided.*
- 3) *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.*
- 4) *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.*
- 5) *This Standard is subject to review just years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csa.ca 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) *rational justification for the change.*
- 6) *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*
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.

History of the development of the Standard for Non-metallic dip tubes for use in water heaters

Note: *This History is informative and is not part of the Standard.*

With the onset of the Free Trade Agreement between the United States and Canada on January 2, 1988, significant attention was given to the harmonization of the United States and Canadian safety standards addressing gas-fired equipment for residential, commercial and industrial applications. It was believed that the elimination of the differences between the standards would remove potential trade barriers and provide an atmosphere in which North American manufacturers could market more freely in the United States and Canada. The harmonization of these standards was also seen as a step toward harmonization with international standards.

During its October 1-2, 2008 meeting, the Joint Technical Advisory Group on Standards for Gas-Fired Water Heaters recommended a draft proposed standard, Z21.98 • CSA 4.10, be distributed for review and comment as a harmonized standard. The first draft of the harmonized standard for non-metallic dip tubes for use in water heaters was distributed for review and comment during November 2008.

Following reconsideration and modification of the proposed harmonized draft standard for non-metallic dip tubes for use in water heaters, the Joint Technical Advisory Group on Standards for Gas-Fired Water Heaters at its May 28, 2009 meeting, recommended the proposed standard to the Z21/83 Technical Committee and the CSA Technical Committee on Gas Appliances and Related Equipment for approval.

The proposed harmonized standard for non-metallic dip tubes for use in water heaters was approved by the Z21/83 Committee at their meeting on September 28, 2010. The CSA Technical Committee approved the proposed harmonized standard for non-metallic dip tubes for use in water heaters by letter ballot dated May 12, 2011.

The first edition of the harmonized Z21/CSA Standard for Non-metallic dip tubes for use in water heaters, Z21.98 • CSA 4.10, was approved by the Canadian Interprovincial Gas Advisory Council on March 19, 2012 and by the American National Standards Institute, Inc., on March 30, 2012.

The second edition of the harmonized Z21/CSA Standard for Non-metallic dip tubes for use in water heaters, ANSI Z21.98 • CSA 4.10, was approved by the Canadian Interprovincial Gas Advisory Council on August 4, 2014, and by the American National Standards Institute, Inc., on June 24, 2014.

This, the third edition of the harmonized Z21/CSA Standard for Non-metallic dip tubes for use in water heaters, ANSI Z21.98 • CSA 4.10, was approved by the Canadian Interprovincial Gas Advisory Council on August 27, 2015, and by the American National Standards Institute, Inc., on July 28, 2015.

The previous edition of the Standard for Non-metallic dip tubes for use in water heaters, and addenda thereto, approved by the Canadian Interprovincial Gas Advisory Council and American National Standards Institute, Inc. are as follows:

ANSI Z21.98-2012 • CSA 4.10-2012
ANSI Z21.98a-2013 • CSA 4.10a-2013
ANSI Z21.98-2014 • CSA 4.10-2014

The following identifies the designation and year of the third edition of the Standard:

ANSI Z21.98-2015 • CSA 4.10-2015

Note: *This, the 2015 edition of ANSI Z21.98 • CSA 4.10 incorporates changes to the 2014 edition. Changes other than editorial, are denoted by a delta in the margin.*

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ANSI Z21.98-2015 • CSA 4.10-2015

Non-metallic dip tubes for use in water heaters

1 Scope

1.1

This Standard applies to newly produced non-metallic dip tubes intended for use in water heaters.

1.2

Compliance of a dip tube with this Standard does not imply that such dip tube is acceptable for use in water heaters without supplemental tests with the dip tube installed in the particular water heater design.

1.3

This standard contains SI (Metric) corresponding to the yard/pound quantities, the purpose being to allow the Standard to be used in SI (Metric) units. (*American National Standard for Metric Practice, IEEE/ASTM SI 10, or ISO 80000-1:2009, Quantities and units — Part 1: General, is used as a guide in making metric conversion from yard/pound quantities.*) If a value for a measurement and a corresponding value in other units are stated, the first stated value is to be regarded as the requirement. The given corresponding value may be approximate. If a value for a measurement and a corresponding value in other units are both specified as a quoted marking requirement, the first stated unit, or both, are to be provided.

1.4

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user shall 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.