



CSA/ANSI 3.21:19
National Standard of Canada



Industrial gas-fired natural draft heaters for installation in non-hazardous and hazardous locations in oil and gas process applications



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CSA/ANSI 3.21:19

March 2019

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*Approved on March 12, 2019 by ANSI
Approved on December 19, 2018 by IGAC
Published in March 2019 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3*

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*ICS 25.180.20
ISBN 978-1-4883-1381-3*

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Preface

This is the first edition of CSA/ANSI 3.21, *Industrial gas-fired natural draft heaters for installation in non-hazardous and hazardous locations in oil and gas process applications*.

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

This Standard was prepared by the Technical Committee on Gas-Fired Industrial Heating Equipment, under the jurisdiction of the Strategic Steering Committee on Standards for Fuels and Appliances, and has been formally approved by the Technical Committee and the Interprovincial Gas Advisory Council.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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*Approved on March 12, 2019 by ANSI
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ISBN 978-1-4883-1381-3*

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CSA/ANSI 3.21:19, Part 1

Industrial gas-fired natural draft heaters for installation in non-hazardous locations in oil and gas process applications

1 Scope

1.1

CSA/ANSI 3.21, *Industrial gas-fired natural draft heaters for installation in non-hazardous and hazardous locations in oil and gas process applications*, is arranged in two parts:

- a) CSA/ANSI 3.21, Part 1, covers industrial gas-fired natural draft heaters for installation in non-hazardous locations in oil and gas process applications; and
- b) CSA/ANSI 3.21, Part 2, covers industrial gas-fired natural draft heaters for installation in hazardous locations in oil and gas process applications.

1.2

This Standard (Part 1) applies to newly produced industrial gas-fired natural draft heaters (see Clause 3, Definitions) utilizing new and unused parts and materials intended for indoor and outdoor installation in non-hazardous locations in oil and gas process applications with a maximum input rating up to 12 500 000 Btu/h (3750 kW).

1.3

The term “heater” when used herein applies to gas-fired industrial natural draft heaters. Examples could include but are not limited to a fire tube heater, process heater, line heater, or tank heater (see Clause 3, Definitions).

1.4

A heater may be factory-built as a single heater or as a packaged system (see Clause 3, Definitions) intended to be disassembled for shipping and reassembled for installation.

1.5

The term “gas” when used herein applies equally to the following gases:

- a) natural gas; and
- b) propane.

Heaters may be convertible for use with natural gas and propane, when provision is made for the conversion from one gas to the other.

1.6

This Standard does not apply to:

- a) a heater whose primary use is to provide direct comfort space heating;
- b) a heater used or installed in a space where people may sleep or may be located in or near an area that has sleep accommodation; or

c) residential or commercial equipment.

1.7

All references to psi (kPa) throughout this Standard are to be considered "gauge" pressures unless otherwise specified.

1.8

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.

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

1.9

Clause 2, Reference Publications, lists those publications identified in this Standard and the organization responsible for its development.

1.10

Clause 3, Definitions, provides definitions of words and terms that are specific to this Standard.

1.11

Clause 4, Construction, and Clause 5, Performance, are applicable to heaters that fall under the Scope of this Standard.

1.12

Clause 6, Items Unique to Canada, contains provisions that are unique to Canada.

1.13

Clause 7, Items Unique to the United States, contains provisions that are unique to the United States.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below.

CSA Group

B51-14

Boiler, pressure vessel, and pressure piping code