

Natural gas and propane installation code



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CSA B149 Installation Code Committee

B. Diggins	MJS Mechanical Ltd., Calgary, Alberta	<i>Chair</i>
J.M. Jones	J.M. Jones Consulting Services, Leamington, Ontario	<i>Vice-Chair</i>
D.J. Stainrod	D.J. Stainrod & Associates Ltd. (PGAC), Bowmanville, Ontario	<i>Vice-Chair</i>
J. Angus	J.M.A. Associates, Midland, Ontario	
B. Bachellier	Government of Nunavut, Cambridge Bay, Nunavut	
P. Baker	Maxitrol Company, Hamilton, Ontario	
D. Baxter	Enbridge Gas Distribution, Toronto, Ontario	
M. Binet	Gaz Métro Inc., Montréal, Québec	
K. Carlisle	Karl Dungs, Inc., Blaine, Minnesota, USA	<i>Associate</i>
P. Cavens	Cavens & Associates, Roberts Creek, British Columbia	
R. Charbonneau	Budget Propane Inc., Valleyfield, Québec	
S. Cooke	Technical Standards & Safety Authority, Toronto, Ontario	<i>Alternate</i>
C. Côté	Gaz Métro Inc., Montréal, Québec	
M. Davidson	New Brunswick Department of Public Safety, Fredericton, New Brunswick	
W. Drover	Government of Newfoundland and Labrador, St. John's, Newfoundland and Labrador	<i>Alternate</i>
A. Durnie	Alberta Municipal Affairs, Edmonton, Alberta	
D. Eastman	Government of Newfoundland and Labrador, St. John's, Newfoundland and Labrador	

G. Edgar	Selkirk Inc., Logan, Ohio, USA	
D. Evans	Bruce Sutherland Associates Ltd., Dartmouth, Nova Scotia	
Z. Fraczkowski	Technical Standards & Safety Authority, Toronto, Ontario	
J. Good	Autogas Propane Ltd., Burnaby, British Columbia	
A. Gould	Reliance Comfort Ltd. Partnership, dba Reliance Home Comfort, Cambridge, Ontario	
D. Green	National Research Council Canada, Ottawa, Ontario	
E. Hurd	British Columbia Safety Authority, New Westminster, British Columbia	<i>Alternate</i>
J. Jachniak	ENEFEN Energy Efficiency Engineering Ltd., Leduc, Alberta	
S. Katz	S. Katz and Associates Inc., North Vancouver, British Columbia	
W.C. LaRose	St. Albert, Alberta	
W. Lock	British Columbia Safety Authority, New Westminster, British Columbia	
S. McCarthy	CSA International, Cleveland, Ohio, USA	<i>Associate</i>
J. McCormack	Superior Propane Inc., Moncton, New Brunswick	
R. McRae	Government of the Northwest Territories Public Works and Services, Yellowknife, Northwest Territories	
J. Melling	SaskPower, Saskatoon, Saskatchewan	<i>Alternate</i>
H. Nachaj	Le Groupe Charbonneau Inc., Montréal, Québec	
V. Pao	Manitoba Department of Labour and Immigration, Winnipeg, Manitoba	<i>Alternate</i>
R. Pattison	ATCO Gas, Edmonton, Alberta	

G. Potter	Cambridge Engineering, Chesterfield, Missouri, USA	
G. Prociw	Union Gas Limited, Chatham, Ontario	
V. Quiring	Engineered Air, Division of Airtex Manufacturing Partnership, Calgary, Alberta	
B. Reid	Prince Edward Island Department of Community Services & Attorney General, Charlottetown, Prince Edward Island	
J. Renaud	Régie du bâtiment du Québec, Montréal, Québec	
D. Ricard	Association Québécoise du Gaz Naturel, Montréal, Québec	
T. Rieger	Manitoba Department of Labour and Immigration, Winnipeg, Manitoba	
J. Robertson	Underwriters' Laboratories of Canada, Victoria, British Columbia	<i>Associate</i>
C. Snow	Enbridge Gas New Brunswick, Fredericton, New Brunswick	
D. Stewart	Nova Scotia Department of Environment and Labour, Halifax, Nova Scotia	
M. Stornel	Manitoba Hydro, Winnipeg, Manitoba	
S. Thenappan	Rheem Manufacturing Company, Montgomery, Alabama, USA	
I. Tilgner	Human Resources and Skills Development Canada, Ottawa, Ontario	
I. Turnbull	Terasen Gas Inc., Surrey, British Columbia	
D. Weishuhn	Blue Flame Heating & Air Conditioning Limited, Toronto, Ontario	
G. Williams	SaskPower, Regina, Saskatchewan	
T. Windsor	Sparling's Propane Co. Ltd., Flesherton, Ontario	
C. Wolfe	Government of Nunavut Community & Government Services, Iqaluit, Nunavut	<i>Alternate</i>

D. Young

Government of Yukon,
Whitehorse, Yukon

A. Cautillo

Canadian Standards Association,
Mississauga, Ontario

Project Manager

Interprovincial Gas Advisory Council (IGAC)

S. Cooke	Technical Standards & Safety Authority, Toronto, Ontario	<i>Chair</i>
J. Renaud	Régie du bâtiment du Québec, Montréal, Québec	<i>Vice-Chair</i>
G. Williams	SaskPower, Regina, Saskatchewan	<i>Vice-Chair</i>
B. Bachellier	Government of Nunavut, Cambridge Bay, Nunavut	
M. Davidson	New Brunswick Department of Public Safety, Fredericton, New Brunswick	
W. Drover	Government of Newfoundland and Labrador, St. John's, Newfoundland and Labrador	<i>Alternate</i>
A. Durnie	Alberta Municipal Affairs, Edmonton, Alberta	
D. Eastman	Government of Newfoundland and Labrador, St. John's, Newfoundland and Labrador	
Z. Fraczkowski	Technical Standards & Safety Authority, Toronto, Ontario	<i>Alternate</i>
E. Hurd	British Columbia Safety Authority, New Westminster, British Columbia	<i>Alternate</i>
W. Lock	British Columbia Safety Authority, New Westminster, British Columbia	
R. McRae	Government of the Northwest Territories Public Works & Services, Yellowknife, Northwest Territories	
J. Melling	SaskPower, Saskatoon, Saskatchewan	<i>Alternate</i>
V. Pao	Manitoba Department of Labour and Immigration, Winnipeg, Manitoba	<i>Alternate</i>
B. Reid	Prince Edward Island Department of Community Services and Attorney General, Charlottetown, Prince Edward Island	
T. Rieger	Manitoba Department of Labour and Immigration, Winnipeg, Manitoba	

D. Stewart	Nova Scotia Department of Environment and Labour, Halifax, Nova Scotia	
I. Tilgner	Human Resources and Skills Development Canada, Ottawa, Ontario	
C. Wolfe	Government of Nunavut Community & Government Services, Iqaluit, Nunavut	<i>Alternate</i>
D. Young	Government of Yukon, Whitehorse, Yukon	
A. Cautillo	Canadian Standards Association, Mississauga, Ontario	<i>Project Manager</i>

Preface

This is the fourteenth edition of CSA B149.1, *Natural gas and propane installation code*. It supersedes the previous editions, published in 2005 and 2000 by the Canadian Standards Association (CSA) as CAN/CSA-B149.1, in 1995, 1991, 1986, 1980, 1978, 1976, and 1974 by the Canadian Gas Association (CGA), and in 1971, 1966, 1962, and 1958 by the Canadian Standards Association.

In 1958, the Canadian Standards Association published the first edition of CSA B149, *Installation Code for Gas Burning Appliances and Equipment*. It was superseded by later editions in 1962, 1966, and 1971. Following the publication of the 1966 edition, the decision was made to split the Code into two parts: B149.1, dealing with the installation of appliances and equipment burning natural gas, and B149.2, dealing with the installation of appliances and equipment burning propane. As a first step, B149.2 was prepared and first published in 1969.

The Canadian Gas Association was accredited by the Standards Council of Canada as the standards development organization responsible for preparing standards for gas-burning appliances and equipment, and in this connection took over responsibility for the B149 Code in 1974. New editions of the Code were subsequently published in 1974, 1976, 1978, 1980, 1986, 1991, and 1995.

On June 30, 1997, the Canadian Standards Association acquired International Approval Services (IAS), which was until then a joint venture of the American Gas Association (AGA) and the Canadian Gas Association. Under this agreement, CSA acquired the complete range of IAS standards administration, certification, and registration products and services for appliances and accessories fuelled by natural and liquefied petroleum gases. In 1998, the CSA B149 Installation Code Committee agreed to publish a *Natural Gas and Propane Installation Code* that would amalgamate the first seven sections of CAN/CGA-B149.1 and CAN/CGA-B149.2 to become CAN/CSA-B149.1-00. This amalgamation was in response to the trend among the authorities having jurisdiction of combining licensing and training for natural gas and propane. The remaining sections 8 to 14 of CAN/CGA-B149.2 became CAN/CSA-B149.2-00, *Propane Storage and Handling Code*.

In this 2010 edition, where a major change or addition to the previous edition of the Code has been made, the clause, table, or figure affected is identified by the symbol delta (Δ) in the margin. Users of the Code are advised that the change markers in the text are not intended to be all-inclusive and are provided as a convenience only; such markers cannot constitute a comprehensive guide to the revisions made to the Code. Care must therefore be taken not to rely on the change markers to determine the current requirements of the Code. As always, users of the Code must consider the entire Code and any local amendments.

The CSA B149 Installation Code Committee, which is responsible for preparing this Code, consists of members of the provincial gas inspection authorities, natural gas utilities, propane distributors, appliance, equipment, and accessory manufacturers, certification organizations, and representatives from the Heating, Refrigeration and Air Conditioning Institute of Canada, the Mechanical Contractors association of Canada and federal government departments. This Code has been formally approved by the CSA B149 Installation Code Committee and by the Interprovincial Gas Advisory Council.

January 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 Code is stated in its Scope, it is important to note that it remains the responsibility of the users of the Code to judge its suitability for their particular purpose.
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B149.1-10

Natural gas and propane installation code

1 Scope

1.1

This Code applies to the installation of

- (a) **appliances, equipment, components, and accessories** where gas is to be used for fuel purposes;
- (b) piping and tubing systems extending from the termination of the utility installation or from the distributor's propane tank;
- (c) vehicle-refuelling appliances and associated equipment meeting the requirements of a general-purpose appliance to fill a natural-gas-fuelled vehicle; and
- (d) stationary gas **engines** and **turbines**.

Δ **1.2**

This Code does not apply to

- (a) marine or pipeline terminals;
- (b) gas where used as a feedstock in petroleum refineries or chemical plants;
- (c) utility pipeline distribution and transmission pipelines;
- (d) storage and handling of liquefied natural gas or underground reservoirs for natural gas;
- (e) the installation of **NGV** fuel systems, **containers**, and refuelling stations;
- (f) the storage and utilization of compressed natural gas on boats;
- (g) the installation of vehicle-refuelling appliances when **NGV** storage **containers** are installed as part of the system;
- (h) refrigerated storage or underground reservoirs for propane;
- (i) propane used on boats;
- (j) propane used as a propellant in aerosol containers;
- (k) butane fuel cylinders of 150 g capacity or less; and
- (l) the installation of **containers** and **equipment** to be used for propane in distribution locations and filling plants and on tank trucks, tank trailers, and cargo liners.

1.3

Where the term "gas" is used, the requirements of this Code include, and apply equally to, any of the following gases or mixtures of them: natural gas, manufactured gas, or mixtures of propane gas and air, propane, propylene, butanes (normal butane or isobutane), and butylenes.

1.4

This Code and any Standards referenced in it do not make or imply any assurance or guarantee with respect to the life expectancy, durability, or operating performance of equipment and materials referenced in the Code.

1.5

The values given in yard/pound units are the standard. This Code contains SI (metric) equivalents to yard/pound units so that the Code can be used in SI (metric) units. SI (metric) equivalents may be approximate.

Propane storage and handling code



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Propane storage and handling code



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B149.2-10

Propane storage and handling code

Δ 1 Scope

1.1

This Code applies to

- (a) the storage, handling, and transfer of propane;
- (b) the installation of **appliances, equipment, components, accessories, and containers** on highway vehicles, **recreational vehicles, mobile housing**, outdoor food service units, and **wash-mobiles** when propane is to be used for fuel purposes;
- (c) propane used as an engine fuel in other than highway vehicles; and
- (d) the installation of **containers** and **equipment** to be used for propane in distribution locations and **filling plants**.

1.2

This Code does not apply to

- (a) marine or pipeline terminals;
- (b) gas where used as a feedstock in petroleum refineries or chemical plants;
- (c) utility pipeline distribution and transmission pipelines;
- (d) refrigerated storage or underground reservoirs for propane;
- (e) propane used on boats;
- (f) propane used as a propellant in aerosol **containers**;
- (g) butane fuel **cylinders** of 5.3 oz (150 g) capacity or less; and
- (h) the installation of **appliances, equipment, components, accessories, and containers** other than those on highway vehicles, **recreational vehicles, mobile housing**, outdoor food service units, and **wash-mobiles** when propane is to be used for fuel purposes.

1.3

Where the term “propane” is used, the requirements of this Code include, and apply equally to, any material that is composed predominantly of any of the following hydrocarbons or mixtures of them: propane, propylene, butanes (normal butane or isobutane), and butylenes.

1.4

The values given in yard/pound units are the standard. This Code contains SI (metric) equivalents to yard/pound units so that the Code can be used in SI (metric) units. SI (metric) equivalents may be approximate.

1.5

In this Code, unless **approved** otherwise by the **authority having jurisdiction**, “shall” indicates a mandatory requirement; “should” indicates a recommendation or that which is advised but not mandatory; and “may” indicates an advisory or optional statement. Notes to the text do not include mandatory or alternative requirements. The purpose of a note is to separate from the text explanatory or informative material that is not properly a part of this Code. Notes to figures and tables, however, are considered part of the figure or table and may be written as mandatory requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.