



**CSA
Group**

B109-01
(reaffirmed 2012)

Natural gas for vehicles installation code



Update No. 1

B109-01

February 2005

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Title: *Natural Gas for Vehicles Installation Code* — originally published June 2001

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages. The change to Clause 2.3.2 in French Update No. 1 does not apply to the English Standard.

Revised	Preface
New	None
Deleted	None

CSA B109-01 originally consisted of **36 pages** (xi preliminary and 25 text), each dated **June 2001**. It now consists of the following pages:

June 2001	iii–viii, xi and 1–25
February 2005	ix and x

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

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Δ Preface

This is the first edition of CSA Standard B109, *Natural Gas for Vehicles Installation Code*. It provides requirements that supersede those of CAN/CSA-B149.4, published by the Canadian Gas Association.

In 1958 the Canadian Standards Association published the first edition of CSA Standard B149, *Installation Code for Gas Burning Appliances and Equipment*. It was superseded by editions published in 1962, 1966, and 1971. In 1974 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 1982 Amendment No. 1 to CAN1-B149.1-M80 was published, containing provisions for the installation of natural gas vehicle (NGV) fuel system components on highway vehicles. These provisions were incorporated as parts of CAN/CGA-B149.1-M86. Subsequently, the parts dealing with the installation of NGV fuel system components and containers on highway vehicles were removed from CAN/CGA-B149.1-M91 and published as CAN/CGA-B149.4-M91. The primary reasons for establishing this Code were as follows:

- (a) The provincial enforcing authorities for the other B149 Codes were not necessarily the enforcing body for NGV vehicle conversions. It was therefore felt reasonable to locate these provisions in a separate Code for those other enforcing authorities to adopt.
- (b) In most cases, persons involved with converting NGV vehicles do not need those parts of B149.1 not covering NGV. A Code dedicated to NGV was convenient for such persons.

In 1997 the Canadian Standards Association acquired the standards development and certification business of the Canadian Gas Association; the B149 program had returned to its origins. At the same time technological innovation required that any extant NGV aspects be revised to remain relevant. In that context, the revision of the CAN/CGA-B149.4 Code was to be undertaken, circulated for public review and comment, and endorsed following due process under the requirements of the Standards Council of Canada. A new designation, B109, was assigned for the revised Code in keeping with current NGV nomenclature and that of the federal government.

As a note of clarification, within the NGV sector Codes are requirements that are implemented by regulations and enforced by a regulatory authority, whereas Standards are requirements against which products are assessed for their compliance with safety and performance criteria. Codes are not mandatory until adopted by authorities having jurisdiction, and are not retroactive. When promulgated, an effective date is designated for their implementation.

This document was prepared by the CSA B109 Subcommittee on the Natural Gas for Vehicles Installation Code and was formally approved by the Interim CSA Steering Committee on Natural Gas Powered Vehicles and Fuelling and the Interprovincial Gas Advisory Council.

June 2001

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.*
- (5) *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3.*

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CSA Standard

B109-01
***Natural Gas for Vehicles
Installation Code***



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June 2001

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Requests for interpretation should

- (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) be phrased where possible to permit a specific "yes" or "no" answer.*

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA's periodical Info Update. For subscription details, write to CSA Sales Promotion, Info Update, at the address given above.

B109-01

Natural Gas for Vehicles Installation Code

1. Scope

1.1

This Code applies to the installation, servicing, and repair of natural gas fuel systems on self-propelled vehicles for the provision of motive power.

1.2

This Code does not apply to

- (a) stationary engines;
- (b) mobile equipment using natural gas as a fuel for other than propulsion;
- (c) LNG vaporizers and LNG fuel storage systems;
- (d) electronic components of a fuel management system; and
- (e) storage or utilization of natural gas on boats or trains.

1.3

In this Code, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Code; “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 Code. 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. Legends to equations and figures are considered requirements.

2. Definitions, Reference Publications, and Abbreviations

2.1 Definitions

The following definitions apply in this Code:

Accessory — a part capable of performing an independent function(s) and contributing to the operations of the equipment that it serves.

Approved — acceptable to the authority enforcing this Code.

Authority enforcing this Code — the governmental body responsible for the enforcement of any part of this Code or the official or agency designated by that body to exercise such a function.

Certified —

Self-certified — the evaluation procedure completed by the manufacturer for construction, marking, and test requirements of the equipment for a particular installation under the program recognized by the authority enforcing this Code.