CSA Group

CSA/ANSI NGV 6.1-2018
National Standard of Canada

Compressed natural gas (CNG) fuel storage and delivery systems for road vehicles

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National Standard of Canada

CSA/ANSI NGV 6.1-2018

Compressed natural gas (CNG) fuel storage and delivery systems for road vehicles

American National Standards Institute, Inc.

Interprovincial Gas Advisory Council

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Preface

This is the second edition of CSA/ANSI NGV 6.1, *Compressed natural gas (CNG) fuel storage and delivery systems for road vehicles*. It supersedes the previous edition published in 2016.

The first edition of CSA NGV 6.1 was a Recommended Practice that provided a recommended standard practice for vehicle fuel systems. It was written in mandatory language to accommodate its adoption by anyone wishing to do so. The second edition transitioned to a National Standard.

This Standard was prepared by the NGV 6.1 Subcommittee on Compressed Natural Gas (CNG) Fuel Systems, under the jurisdiction of the Technical Committee on Natural Gas Powered Vehicles and Fuelling and the Joint Automotive Technical Committee, and has been formally approved by the Technical Committees, the Interprovincial Gas Advisory Council, and the American National Standards Institute.

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.

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.*
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   b) *relevant clause, table, and/or figure number;*
   c) *wording of the proposed change; and*
   d) *rationale for the change.*

This Code is made possible by a financial contribution from Natural Resources Canada.

CSA/ANSI NGV 6.1-2018
Compressed natural gas (CNG) fuel storage and delivery systems for road vehicles

1 Scope

1.1

This Standard applies to the design, installation, inspection, repair, and maintenance of a fuel storage and delivery system installed in an on road vehicle for use with compressed natural gas (CNG). This includes a fuel system on a self-propelled vehicle for the provision of motive power.

Note: *This Standard is intended to cover the fuel storage and delivery system as defined in Figure 1. Elements downstream of the regulation device(s) or stage(s) such as the low pressure delivery line and injectors are not included in the Scope of this Standard.*

1.2

This Standard does not apply to:

a) stationary engines;
b) mobile equipment using natural gas as a fuel for other than propulsion;
c) electronic control module or controls strategy of a fuel management system;
d) liquefied natural gas (LNG) fuel storage systems; or
e) compressed natural gas (CNG) gaseous portion of LNG vehicles.

Future editions of this Standard may include:

a) liquefied natural gas (LNG) fuel storage system;
b) compressed natural gas (CNG) portion of an LNG vehicle;
c) storage or utilization of natural gas on boats or trains;
d) powered industrial trucks;
e) off road applications including mining applications, all-terrain vehicles; and
f) motorcycles.

1.3

Regulatory requirements may supersede the requirements of this Standard.

1.4

All references to pressure throughout this Standard are to be considered gauge pressures, unless otherwise specified.

1.5

This Standard contains SI (Metric) with corresponding English units, 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, *Quantities and units — Part 1: General*, is used as a guide in making English conversion from metric units. 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.

Where the word “gallon” is used in this Standard, it indicates a U.S. gallon equivalent to 3.785 liters water capacity.

1.6

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 existing codes and this 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.

2 Reference publications

This Standard refers to the following publications and unless otherwise noted, the publication of a document is the most recent edition, or to the edition in effect at the time that the vehicle was designed or the conversion completed.

CSA Group

ANSI NGV 2
Compressed natural gas vehicle fuel containers

ANSI NGV 3.1/CSA 12.3
Fuel system components for compressed natural gas powered vehicles

ANSI NGV 1/CSA NGV 1
Compressed natural gas vehicle (NGV) fueling connection devices

ANSI PRD 1
Pressure relief devices for natural gas vehicle (NGV) fuel containers

CSA B109 (Part 1)
Natural gas for vehicles installation code

EXP2.1-16
Best practice for defueling, decommissioning, and disposal of compressed natural gas vehicle fuel containers

CSA IR-1-15
Compressed Natural Gas Vehicle (NGV) high flow fueling connection devices — Supplement to NGV 1-2006