CSA Group

CSA/ANSI NGV 4.1-2018

Natural gas vehicle (NGV) dispensing systems

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Natural gas vehicle (NGV) dispensing systems

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International Gas Advisory Council

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Preface

This is the second edition of CSA/ANSI NGV 4.1, *Natural gas vehicle (NGV) dispensing systems*. It supersedes the previous edition published in 1999, ANSI/IAS NGV 4.1-99/CSA 12.5-M99.

This publication represents a standard for safe operation, substantial and durable construction, and performance testing of components for natural gas vehicle dispensing systems, within limitations given below and in the scope of this Standard.

This Standard is based on proven engineering principles, research, and the combined expertise of gas utilities, manufacturers, users, and others having specialized experience.

Nothing in this Standard is to be considered in any way as indicating a measure of quality beyond compliance with the provisions it contains. It is designed to allow compliance of products which may exceed that specified in the provisions herein. In its preparation, full recognition has been given to possibilities of improvement through ingenuity of design. This Standard is subject to revision as further experience and investigation may show it is necessary and desirable.

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Users of this Standard are advised that the devices/products/activities within its scope may be subject to regulation at the Federal, state, provincial, or local levels. Users are strongly urged to investigate this possibility through appropriate channels. In the event of a conflict with this Standard, the Federal, state, provincial, or local regulations should be followed.

This Standard does not apply to fuel system components that will be incorporated during original manufacture of motor vehicles which comply with Federal Motor Vehicle Safety Standards (FMVSS) or Canadian Motor Vehicle Safety Standards (CMVSS) for Natural Gas Powered Vehicles.

This Standard was prepared by the NGV 4.1 Technical Subcommittee on Natural Gas Vehicle (NGV) Dispensing Systems and Compressors, under the jurisdiction of the Transportation Strategic Steering Committee, and has been formally approved by the Natural Gas Transportation Technical Committee, American National Standards Institute, and the Interprovincial Gas Advisory Council.

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

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CSA/ANSI NGV 4.1-2018
Natural gas vehicle (NGV) dispensing systems

1 Scope

1.1

This Standard applies to:

a) the mechanical and electrical features of newly manufactured systems that dispense natural gas for vehicles (NGV) where such a dispensing system is intended primarily to dispense the fuel directly into the fuel storage container of the vehicle;
b) NGV dispensers contained in a single housing; and
c) NGV dispensers contained in multiple housings for metering and registering devices, remote electronics, remote overfill protection, hoses, and nozzles.

Note: *Residential fueling appliances (RFA) are addressed in CSA NGV 5.1. Vehicle fueling appliances (VFA) are addressed in CSA NGV 5.2/12.6.*

1.1.1

Each dispenser may have the capability of independently fueling more than one vehicle simultaneously.

1.1.2

NGV dispensers covered by this Standard are intended for use with a gas composition specified by SAE J1616.

1.1.3

A dispenser hose may be pressurized or non-pressurized while inactive.

1.1.4

This Standard does not apply to:

a) compression and ancillary equipment;
b) compressed natural gas storage containers;
c) priority valve equipment;
d) vehicle fueling appliances for NGV;
e) remote station or kiosk consoles; and
f) remote sequencing equipment and other remote equipment not supplied as part of the dispenser system.

1.1.5

Installation of a dispensing system is intended to be in accordance with ANSI/NFPA 52, or CSA B108, as applicable, and the requirements of the authority having jurisdiction (AHJ).

1.2
All dimensions used in this Standard are in metric units [International System of Units (SI)], unless otherwise specified. If a value for a measurement, as given in this Standard, is followed by an equivalent value in other units, the first stated is to be regarded as the specification.

1.3
All references to pressure throughout this document are to be considered gauge pressures unless otherwise specified.

1.4
Annex A contains clauses that are unique to Canada.

1.5
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 (nonmandatory) to define their application.

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

CSA B51-14
Boiler, Pressure Vessel, and Pressure Piping Code

CSA B108-14
Compressed Natural Gas Fuelling Stations Installation Code

CSA C22.1-15
Canadian Electrical Code, Part I Safety Standard for Electrical Installations

CSA C22.2 No. 22-M1986 (R2013)
Electrical Equipment for Flammable and Combustible Fuel Dispensers

CSA C22.2 No. 30-M1986 (R2016)
Explosion-proof enclosures for use in Class 1 hazardous locations

