ANSI/CSA NGV 5.1-2015

Residential fueling appliances

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ANSI/CSA NGV 5.1-2015
Residential fueling appliances

American National Standards Institute, Inc.

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Preface

This is the first edition of ANSI/CSA NGV 5.1, *Residential fueling appliances*.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of the Advanced Research Projects Agency-Energy (ARPA-E), U.S. Department of Energy, under Award Number DE-AR000375.

This Standard was prepared by the CSA NGV 5.1 Subcommittee on Residential Fueling Appliances, under the jurisdiction of the Automotive Technical Committee and the Technical Committee for Natural Gas Vehicles and Fueling, and has been formally approved by the Technical Committee(s), American National Standards Institute, and the Interprovincial Gas Advisory Council, if applicable.

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.*

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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.*

5) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*

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) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

6) *Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.*

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Residential fueling appliances

1 Scope

1.1
Scope and references

This Standard details mechanical, physical, and electrical requirements for a newly manufactured appliance that dispenses natural gas for vehicles directly into the vehicle natural gas fuel storage system, referred to as a residential fueling appliance (RFA).

1.2

These requirements apply to appliances for:

a) natural gas only (see Clause 1.1);
b) outdoor or indoor installation in nonliving spaces (e.g., garage);
c) ambient temperature not below minus 40°F (minus 40 °C);
d) nominal voltage not exceeding 240 VAC;
e) fill pressure not exceeding specified vehicle service pressure;
f) maximum inlet flow rate not exceeding 10 SCFM (0.3 SCMH);
g) intended to be connected to residential utility gas piping system in accordance with requirements of the applicable Code;
h) intended to meet the installation fire safety requirements in accordance with the requirements of the applicable Code; and
i) single hose gas compressor packages.

1.3

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

1.4

In the case of conflict between this Standard and Federal, National, Provincial, State, or local requirements, the government requirements take precedence.

1.5

This Standard contains SI (Metric) units corresponding to the yard/pound quantities, the purpose being to allow the standard to be used in SI (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.

Note: *IEEE/ASTM SI 10 or ISO 80000-1 is used as a guide in making metric conversion from yard/pound quantities.*

1.6

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user shall 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.

2 Reference publications

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

CSA Group

6.18-02 (R2012)
Service Regulators For Natural Gas

ANSI NGV 1/CSA NGV 1-2006 (R2012)
Compressed Natural Gas Vehicle (NGV) Fueling Connection Devices

ANSI NGV 3.1-2014/CSA 12.3-2014
Fuel System Components For Compressed Natural Gas Powered Vehicles

ANSI/IAS NGV 4.1-99/CSA 12.51-M99 (R2009)
NGV Dispensing Systems

ANSI/IAS NGV 4.2–1999/CSA 12.52-M99
Hoses For Natural Gas Vehicles And Dispensing Systems

ANSI/IAS NGV 4.4-99/CSA 12.54-M99 (R2009)
Breakaway Devices For Natural Gas Dispensing Hoses And System

ANSI/IAS NGV 4.6-99/CSA 12.56-M99 (R2009)
Manually Operated Valves For Natural Gas Dispensing Systems

ANSI Z21.15-2009/CSA 9.1-2009
Manually Operated Gas Valves For Appliances, Appliance Connector Valves And Hose End Valves

ANSI Z21.18-2007/CSA 6.3-2007 (R2012)
Gas Appliance Pressure Regulators

ANSI Z21.21-2012/CSA 6.5-2012
Automatic Valves For Gas Appliances

B51-09
Boiler, Pressure Vessel, And Pressure Piping Code