ANSI/CSA NGV 5.1-2016
American National Standard
(reaffirmed 2020)

Residential fueling appliances

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American National Standard

ANSI/CSA NGV 5.1-2016
Residential fueling appliances

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Interprovincial Gas Advisory Council

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Preface

This is the second 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.*
4) *This Standard is subject to review at least every five years; suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
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ANSI/CSA NGV 5.1-2016
Residential fueling appliances

1 Scope

1.1 General

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 Application

These requirements apply to appliances:

a) for natural gas only (see Clause 1.1);
b) for outdoor or indoor installation in nonliving spaces (e.g., garage);
c) for ambient temperature not below minus 40°C (minus 40 °F);
d) for nominal voltage not exceeding 240 Volts AC;
e) for fill pressure not exceeding specified vehicle service pressure;
f) for maximum inlet flow rate not exceeding 10 SCFM (17 SCMH);
g) intended for connection 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 and dual fueling hose gas compressor packages.

1.3 Pressure references

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

1.4 Resolution of conflicts

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

1.5 Units of measure

This Standard contains SI (Metric) units corresponding to the inch/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 inch/pound quantities.*

1.6 Terminology

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