CSA Group

CSA/ANSI NGV 5.2-2017

Vehicle fueling appliances (VFA)

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Vehicle fueling appliances (VFA)

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Preface

This is the first edition of CSA/ANSI NGV 5.2, *Vehicle fueling appliances (VFA)*. It supersedes CSA 12.6, Vehicle refuelling appliances.

The content of this Standard was developed using the requirements in CSA 12.6, Vehicle refuelling appliances; CSA/ANSI NGV 5.1, Residential fueling appliances; and current code requirements.

The CSA NGV 5.2/12.6 technical subcommittee reviewed coverage in CSA 12.6 and CSA/ANSI NGV 5.1 to create this new Standard and create a Standard which would

1) resolve overlapping conflicting requirements; and
2) focus on coverage for vehicle fueling appliances for other than residential applications (VFA).

The document is designated CSA/ANSI NGV 5.2 to remove potential confusion in the field with equipment marked as complying with CSA 12.6.

This Standard was prepared by the CSA/ANSI NGV 5.2 Subcommittee on Compressed Natural Gas Vehicle (NGV) Fueling Appliances, under the jurisdiction of the Joint Automotive Technical Committee and the Technical Committee on Natural Gas Powered Vehicles and Fueling.

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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   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.*

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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.*

CSA/ANSI NGV 5.2-2017
Vehicle fueling appliances (VFA)

1 Scope

1.1 General

This Standard details mechanical, physical, and electrical requirements for a newly manufactured non-residential appliance, referred to as a vehicle fueling appliance (VFA), that compresses natural gas for vehicles and dispenses directly into onboard vehicle storage or delivers to external natural gas storage systems.

This Standard applies to appliances that incorporate compression and dispensing in the same appliance.

Notes:

1) *Residential fueling appliances (RFA) are addressed in CSA NGV 5.1.*
2) *Devices dedicated only to dispensing fuel into vehicles are addressed in CSA NGV 4.1.*

1.2 Application

This Standard applies to compressed natural gas vehicle fueling appliances:

a) intended for connection to a natural gas supply source;
b) for outdoor installation or indoor installation;
c) for ambient temperatures not below –40° C (–40°F);
d) for nominal voltage not exceeding 480 volts AC;
e) certified as a system with temperature compensated pressure limits for delivery of fuel for:
    i) direct fueling of vehicles;
    ii) fueling of vehicles from the systems internal storage;
    iii) filling of external natural gas storage systems; or
    iv) any combination of the above.
f) with maximum inlet flow rate not exceeding 10 SCFM (17 SCMH);
g) for installation in non-residential occupancies;
h) intended to meet the installation fire safety requirements in accordance with the requirements of the applicable Code;
i) for connection to a single vehicle, multiple vehicles, or storage systems; and
j) intended for installation in non-hazardous locations

This Standard does not address a system that fuels a vehicle from external storage.

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 (AHJ) 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 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 (non-mandatory) to define their application.

1.7 Alternate construction

The requirements of this Standard are not intended to constrain innovation. When considering fuels, materials, designs, or constructions not specifically dealt with in this Standard, these alternatives shall be evaluated as to their ability to yield levels of safety and performance equivalent to those prescribed by this Standard.

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 (R2013)
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 12.5-M99 (R2014)
NGV Dispensing Systems

