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CSA/ANSI HGV 3.1:22

National Standard of Canada
American National Standard

Fuel system components for compressed hydrogen gas powered vehicles

Approved American National Standard
ANSI

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American National Standard

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Fuel system components for compressed hydrogen gas powered vehicles

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Preface

This is the second edition of CSA/ANSI HGV 3.1, *Fuel system components for compressed hydrogen gas powered vehicles*. It supersedes the previous edition published in 2015.

The major changes to this edition include the following:

a) adding requirements for flexible fuel lines, hoses, and hose assemblies for use as part of a vehicle's onboard fuel storage system or fuel delivery system; and
b) harmonizing test procedures and values within the industry.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of Natural Resources Canada.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Onboard Vehicle Components for Hydrogen Gas Vehicles, under the jurisdiction of the Technical Committee on Hydrogen Transportation and the Strategic Steering Committee on Transportation, and has been formally approved by the Technical Committee.

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.

This Standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

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1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
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   c) *wording of the proposed change; and*
   d) *rationale for the change.*

CSA/ANSI HGV 3.1:22
Fuel system components for compressed hydrogen gas powered vehicles

1 Scope

1.1 Inclusions

This Standard establishes requirements for newly produced compressed hydrogen gas fuel system components, as listed below, that are intended for use on hydrogen gas powered vehicles:

a) check valves (see Clause 8);
b) manual valves (see Clause 9);
c) manual container valves (see Clause 10);
d) automatic valves and automatic container valves (see Clause 11);
e) hydrogen injectors (see Clause 12);
f) pressure sensors, temperature sensors, and pressure gauges (see Clause 13);
g) pressure regulators (see Clause 14);
h) pressure relief valves (PRV) (see Clause 15);
i) pressure relief devices (PRD) (see Clause 16);
j) excess flow valves (see Clause 17);
k) gastight housing and ventilation passages (see Clause 18);
l) stainless steel rigid fuel lines (see Clause 19);
m) flexible fuel lines, hoses, and assemblies (see Clause 20);
n) filter assemblies (see Clause 21);
o) fittings (see Clause 22);
p) non-metallic, low-pressure rigid fuel lines (see Clause 23); and
q) discharge line closures (see Clause 24).

Note: *Other components not specifically covered here can be examined to meet the criteria of CSA/ANSI HGV 3.1 and tested according to the appropriate functional needs.*

1.2 Applicability

This Standard applies to devices that have a nominal working pressure of either 25MPa, 35MPa, 50MPa, or 70MPa, referred to in this Standard as the following pressure classes:

a) “H25” — 25 MPa;
b) “H35” — 35 MPa;
c) “H50” — 50 MPa; and
d) “H70” — 70 MPa.

This Standard also applies to components downstream of the first stage of pressure reduction with a maximum operating pressure designated by the manufacturer in MPa or kPa (psi).

1.3 Exclusions

This Standard does not apply to the following:

a) hydrogen gas fuel system components incorporated during the manufacture of motor vehicles originally manufactured in compliance with the Federal Motor Vehicle Safety Standards (FMVSS)