



**CSA/ANSI HGV 4.3:19**  
National Standard of Canada  
American National Standard



# Test methods for hydrogen fueling parameter evaluation



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# Preface

This is the third edition of CSA/ANSI HGV 4.3, *Test methods for hydrogen fueling parameter evaluation*. It supersedes the previous editions published in 2016 and 2012.

This edition includes a new Clause 10 on MC formula-based fueling protocol.

This Standard was prepared by the Subcommittee on Test Methods for Hydrogen Fueling Parameter Evaluation, 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 and the Interprovincial Gas Advisory Council.

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.

## 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.*
- 4) *To submit a request for interpretation of this Standard, please send the following information to [inquiries@csagroup.org](mailto: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.*

*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](http://standardsactivities.csa.ca).*

- 5) *This Standard is subject to review within five years from the date of publication. 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](mailto:inquiries@csagroup.org) and include “Proposal for change” in the subject line:*
  - 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 Group acknowledges that the development of this Standard was made possible, in part, by the financial support of*



# CSA/ANSI HGV 4.3:19

## ***Test methods for hydrogen fueling parameter evaluation***

### **1 Scope**

#### **1.1**

This Standard establishes the test method, criteria, and device to evaluate a hydrogen fueling station dispensing system (hereinafter referred to as a “dispenser”) as it relates to achieving the protocols specified in SAE J2601 and SAE J2799 with light duty vehicle hydrogen storage systems less than 248.6 L (10 kg H<sub>2</sub>). The testing evaluation applies to dispensers designed to fill vehicle storage systems following the prescribed protocols defined in SAE J2601 that target rapid fills, while respecting temperature, pressure, and fuel density safety limits.

**Note:** *This Standard is a minimum requirement. Manufacturers may take additional safety precautions.*

#### **1.2**

This Standard was developed for and is intended to be used with the specific version of SAE J2601 and SAE J2799 documents as referenced in Clause 2.

#### **1.3**

For fueling dispensers with the capability for communications with the vehicle, these test methods include the approach to confirm the requirements specified in SAE J2799 and SAE J2601.

#### **1.4**

It is recommended that newly manufactured hydrogen fueling dispensers be tested according to this Standard prior to initial operation of the dispenser for fueling vehicles. This Standard is also intended to provide test methods for validation of existing hydrogen fueling dispensers.

#### **1.5**

Unless otherwise specified, the requirements in this Standard apply to the verification of SAE J2601 compliant hydrogen fueling stations (HFS).

#### **1.6**

In the case of conflict between this Standard and federal, provincial, state, or local requirements, the governmental requirements take precedence.

#### **1.7**

The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

#### **1.8**

All references to pressure throughout this Standard are to be considered gauge pressure unless otherwise specified.