



**CSA
Group**

ANSI/CSA HGV 4.5-2012

Standard for Priority and sequencing equipment for hydrogen vehicle fueling



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May 31, 2012

American National Standards Institute, Inc.

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***American National Standards Institute, Inc.
25 West 43rd Street, Fourth Floor
New York, NY
10036***

Preface

This publication represents a standard for requirements for priority and sequencing equipment, which is part of a hydrogen gas vehicle fueling system.

This standard is based on engineering principles, research and the combined expertise of manufacturers, users, and others having specialized experience.

Nothing in this standard is to be considered in any way as indicating a measure of quality beyond compliance with the provisions it contains. It is designed to allow compliance of products which may exceed that specified in the provisions herein. In its preparation, full recognition has been given to possibilities of improvement through ingenuity of design. This standard is subject to revision as further experience and investigation may show it is necessary and desirable.

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History Of The Development Of ANSI HGV 4.5

(This History is informative and is not part of the standard.)

In September 2002, CSA met with the U.S. Department of Energy, Renewable Fuels Group in Washington, D.C. to discuss standards development opportunities in the hydrogen technology area. During this meeting, DOE requested that CSA provide a proposal relating to the development of hydrogen technology standards and codes in the United States.

Industry recognized that an important consideration in the successful commercialization of hydrogen gas as a vehicle fuel was the issue of codes and standards, pertaining to both fueling stations and vehicle fuel system components. CSA undertook the goal of establishing a program for the development of an organized family of coordinated standards that addresses hydrogen gas vehicles and fueling stations.

Industry and CSA recognized there was no standard that addressed requirements for priority and sequencing equipment, which is part of a hydrogen gas vehicle fueling system. The development of such a standard was necessary based on industry needs and feedback:

(1) There were no standards available for priority and sequencing equipment, which is part of a hydrogen gas vehicle fueling system.

(2) Automotive OEMs driving the application of hydrogen as a fuel for vehicles expressed concern over solutions in demonstration projects in the field.

The focus of the priority and sequencing equipment standard established requirements for the performance of priority and sequencing equipment, which is part of a hydrogen gas vehicle fueling system.

CSA has positioned itself as a leader in the fuel cell, hydrogen and natural gas sectors as a Standards Developing Organization (SDO). CSA is aggressively updating and developing national standards, and is playing a major role in the promulgation of US technologies nationally. As US TAG Administrator to IEC TC 105 for Fuel Cell Technologies and as US TAG members of ISO TC 197 and ISO TC 22 / SC 25, CSA is facilitating US technology internationally. CSA organized committees to address technical issues in the development of standards which would affect future expansion of the hydrogen industry.

The HGV 4.5 priority and sequencing equipment standard was processed as an American National Standard in accordance with procedures of the American National Standards Institute (ANSI).

This is the first edition of the HGV 4.5 priority and sequencing equipment standard, and was approved by the American National Standards Institute, Inc. on May 31, 2012.

Previous editions of this standard are as follows:

CSA America HGV 4.5-2009 TIR.

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This standard contains America equivalents to the SI (Metric) quantities, the purpose being to allow the standard to be used both units. (Standard for use of the International System of Units (SI): The Modern Metric System, IEEE/ASTM SI 10 or Metric Practice Guide, CAN/CSA Z234.1 are used as a guide in making conversions.) If a value for a measurement and an equivalent value in other units, the first stated is to be regarded as the requirement. The given equivalent value may be approximate. If a value for a measurement and an equivalent value in other units, are both specified as a quoted marking requirement, the first stated unit, or both shall be provided.

ANSI/CSA HGV 4.5-2012

Priority and sequencing equipment for hydrogen vehicle fueling

Part I: Construction

1.1 Scope

1.1.1

These requirements apply to priority and sequencing equipment (see Part IV - Definitions) which is part of a hydrogen gas vehicle fueling system, hereinafter referred to as equipment.

1.1.2

Priority and sequencing equipment of a type not specifically addressed in these requirements may be subjected to such examinations and tests as deemed necessary by the testing agency to determine compliance with the intent of these requirements.

1.1.3

If a value for measurement, as given in these requirements, is followed by an equivalent value in other units, the first stated value is to be regarded as the specification.

1.2 General Construction and Assembly

1.2.1

Construction of equipment, whether specifically covered by provisions of these requirements or not, shall be in accordance with reasonable concepts of safety, substantiality and durability.

All specifications as to construction, set forth herein, may be satisfied by the construction actually prescribed or such other construction as will provide at least equivalent performance.

1.2.2

Equipment shall be suitable as a minimum for operation at ambient temperatures of -40°C (-40°F) to 60°C (140°F). Also see section 1.2.8.

1.2.3

All parts that may be contacted during normal adjustment or servicing shall be free from sharp projections or edges and projecting screw ends.

1.2.4

All parts shall be of such construction or installation so the equipment is secure against displacement, distortion, warping, or other damage and shall be supported to maintain a fixed relationship with each other.