INTERNATIONAL STANDARD

ISO 12619-1

First edition
2014-06-15

Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/ natural gas blend fuel system components —

Part 1: General requirements and definitions

Véhicules routiers — Composants des circuits d'alimentation pour hydrogène gazeux comprimé (CGH2) et mélanges de gaz naturel et hydrogène —

Partie 1: Exigences générales et définitions

Reference number
ISO 12619-1:2014(E)

© ISO 2014



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **2**
4 Construction and assembly **4**
5 Electrical equipment and wiring **5**
6 Instructions **5**
7 Marking **6**
Bibliography **8**

© ISO 2014 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 25, *Vehicles using gaseous fuels*.

ISO 12619 consists of the following parts, under the general title *Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blends fuel system components*:

— *Part 1: General requirements and definitions*

— *Part 2: Performance and general test methods*

— *Part 3: Pressure regulator*

© ISO 2014 – All rights reserved

Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blend fuel system components —

Part 1: General requirements and definitions

1 Scope

This part of ISO 12619 specifies general requirements and definitions of compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blends fuel system components, intended for use on the types of motor vehicles defined in ISO 3833. It also provides general design principles and specifies requirements for instructions and markings.

This part of ISO 12619 is applicable to vehicles using CGH2 in accordance with ISO 14687-1 or ISO 14687-2 and hydrogen/natural gas blends using natural gas in accordance with ISO 15403-1 and ISO/TR 15403-2. It is not applicable to the following:

— liquefied hydrogen (LH2) fuel system components;

— fuel containers;

— stationary gas engines;

— container mounting hardware;

— electronic fuel management;

— refuelling receptacles.

NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 12619 and tested according to the appropriate functional tests.

NOTE 2 All references to pressure in this part of ISO 12619 are to be considered gauge pressures unless otherwise specified.

NOTE 3 This part of ISO 12619 may not apply to fuel cell vehicles in compliance with international regulations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6722-1, *Road vehicles — 60 V and 600 V single-core cables — Part 1: Dimensions, test methods and requirements for copper conductor cables*

ISO 6722-2, *Road vehicles — 60 V and 600 V single-core cables — Part 2: Dimensions, test methods and requirements for aluminium conductor cables*

ISO 12619-2, *Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blend fuel system components — Part 2: Performance and general test methods*

© ISO 2014 – All rights reserved

ISO 14687-1, *Hydrogen fuel — Product specification — Part 1: All applications except proton exchange membrane (PEM) fuel cell for road vehicles*

ISO 14687-2, *Hydrogen fuel — Product specification — Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles*

ISO 15403-1, *Natural gas — Natural gas for use as a compressed fuel for vehicles — Part 1: Designation of the quality*

ISO/TR 15403-2, *Natural gas — Natural gas for use as a compressed fuel for vehicles — Part 2: Specification of the quality*

ISO 16380[1)], *Road vehicles — Blended fuels refuelling connector*

ISO 17268, *Gaseous hydrogen land vehicle refuelling connection devices*

3 Terms and definitions

3.1
agent
person or organization responsible for holding the compliance certificate

3.2
burst pressure
pressure which causes structural failure of the component and consequential inability of the component to retain hydrogen or hydrogen/natural gas blends

3.3
compressed gaseous hydrogen
CGH2
gaseous hydrogen which has been compressed and stored for use as a vehicle fuel

3.4
filter
component that is intended to remove contaminants from the gas stream

3.5
flexible fuel line
flexible tubing or hose through which gaseous hydrogen or hydrogen/natural gas blend flows

3.6
fitting
connector used in joining a piping, tubing, or hose system

3.7
fuel cell gas injector
device used for introducing gas into the fuel cell

3.8
gas air mixer
device for mixing the gaseous fuel and intake air for the engine

3.9
gas flow adjuster
gas flow restricting device that is installed downstream of a pressure regulator for controlling gas

3.10
gas injector
device for introducing gaseous fuel into the engine or associated intake system

1) To be published.

© ISO 2014 – All rights reserved