BS ISO 12619-2:2014+A1:2016

BSI Standards Publication

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

Part 2: Performance and general test methods

Documents
Document Sharing Hub

Full document details: BS ISO 12619-2:2014+A1:2016

National foreword

This British Standard is the UK implementation of ISO 12619-2:2014+A1:2016. It supersedes BS ISO 12619-2:2014 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by ▌A1⟩ ⟨A1▐.

The UK participation in its preparation was entrusted to Technical Committee GSE/40, Gas supply equipment for natural gas vehicles.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.
Published by BSI Standards Limited 2016

ISBN 978 0 580 88619 5
ICS 43.060.40

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2014.

Amendments/corrigenda issued since publication

Date	Text affected
30 June 2016	Implementation of ISO amendment 1:2016

Documents
Document Sharing Hub

Full document details: BS ISO 12619-2:2014+A1:2016

INTERNATIONAL STANDARD

ISO 12619-2

First edition
2014-06-15

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

Part 2: Performance and general test methods

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

Partie 2: Performance méthodes d'essai en général

Reference number
ISO 12619-2:2014(E)

Documents
Document Sharing Hub

© ISO 2014

Full document details: BS ISO 12619-2:2014+A1:2016

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

© ISO 2014 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 12619-2:2014+A1:2016

Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **2**

4 General ... **2**

5 Hydrostatic strength ... **2**

6 Leakage ... **3**
6.1 General ... 3
6.2 External leakage ... 3
6.3 Internal leakage ... 3
6.4 Test conditions ... 4

7 Excess torque resistance ... **4**

8 Bending moment ... **4**

9 Continued operations ... **5**
9.1 General ... 5
9.2 Test method ... 6

10 Corrosion resistance ... **6**

11 Oxygen ageing ... **7**

12 Ozone ageing ... **7**

13 Electrical over voltages ... **7**

14 Non-metallic material immersion ... **8**

15 Vibration resistance ... **8**

16 Brass material compatibility ... **9**

17 Non metallic material compatibility to hydrogen ... **9**

18 Metallic material compatibility to hydrogen ... **9**

19 Pre-cooled hydrogen exposure test ... **9**

20 Insulation resistance ... **9**

21 Ultraviolet resistance of external surfaces ... **10**

22 Automotive fluid exposure ... **10**
22.1 Fluids ... 10
22.2 Pass criteria ... 10

A1 **23 Material requirements** ... **11**

24 Ultraviolet resistance of external surfaces ... **11**
24.1 General ... 11
24.2 Pass criteria ... 11

25 Automotive fluid exposure ... **11**
25.1 General ... 11
25.2 Method ... 11
25.3 Fluids ... 12
25.4 Pass criteria ... 12

26 N-pentane ... **12**

27 Heat ageing ... **12**

Bibliography ... **13** A1

© ISO 2014 – All rights reserved

AVA Documents Document Sharing Hub

Full document details: BS ISO 12619-2:2014+A1:2016

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
Documents
Document Sharing Hub
Full document details: BS ISO 12619-2:2014+A1:2016

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

Part 2: Performance and general test methods

1 Scope

This part of ISO 12619 specifies performance and general test methods for 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.

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 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 1431-1, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 11114-2, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 2: Non-metallic materials*

© ISO 2014 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 12619-2:2014+A1:2016