



**ISO 19880-2**

**Gaseous hydrogen — Fuelling  
stations —**

Part 2:  
**Dispensers and dispensing systems**

*Carburant d'hydrogène gazeux — Stations de ravitaillement —  
Partie 2: Dispositifs et systèmes de distribution*

**First edition  
2025-02**

This is a preview of ISO 19880-2:2025. [Click here to purchase the full version from the ANSI store.](#)



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of ISO 19880-2:2025. [Click here to purchase the full version from the ANSI store.](#)

<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 General</b> .....	<b>7</b>
<b>5 Requirements</b> .....	<b>8</b>
5.1 General material requirements.....	8
5.2 Construction and assembly requirements.....	9
5.2.1 General construction and assembly.....	9
5.2.2 Housings and cabinets.....	10
5.3 Dispenser hydrogen systems.....	10
5.4 Piping and fittings.....	11
5.5 Overpressure protection devices.....	12
5.6 Filters.....	12
5.7 Valves.....	13
5.8 Venting.....	13
5.9 Dispenser fuelling assembly.....	13
5.10 Breakaway devices.....	14
5.11 Instruments for gaseous hydrogen systems.....	14
5.12 Metering.....	15
5.13 Precoolers and precooler control.....	15
5.14 Electrical equipment and wiring.....	15
5.14.1 General electrical requirements.....	15
5.14.2 Bonding and grounding.....	15
5.14.3 Safety instrumented systems.....	15
5.14.4 Illumination.....	16
5.14.5 Payment terminals or fuelling authorizing systems.....	16
5.14.6 Electromagnetic compatibility and interference (EMC).....	16
5.15 Emergency shutdown system (ESS).....	16
<b>6 Dispensing requirements</b> .....	<b>17</b>
6.1 Control of dispensing.....	17
6.2 Dispensing temperature, pressure and flow rate.....	17
6.3 Pressure integrity check (leak check).....	17
6.4 Fuelling protocol and process limits.....	18
6.5 Post dispensing.....	18
<b>7 Dispenser fault management</b> .....	<b>18</b>
<b>8 Marking</b> .....	<b>18</b>
8.1 General requirements.....	18
8.2 Dispenser name plate.....	19
8.3 Self-serve dispenser instructions.....	19
<b>9 Qualification tests</b> .....	<b>19</b>
9.1 General.....	19
9.2 Standard test conditions.....	19
9.3 Proof pressure test.....	20
9.3.1 Acceptance criteria.....	20
9.3.2 Test method.....	20
9.4 Leakage test.....	20
9.4.1 Acceptance criteria.....	20
9.4.2 Test method.....	20
9.5 Impact test.....	20

This is a preview of ISO 19880-2:2025. [Click here to purchase the full version from the ANSI store.](#)

9.6	Dispenser shutdown test.....	21
9.6.1	Acceptance criteria.....	21
9.6.2	Test method.....	21
9.7	Hose rupture.....	22
9.7.1	General.....	22
9.7.2	Acceptance criteria.....	22
9.7.3	Test method.....	22
9.8	Hose breakaway test.....	23
9.8.1	Acceptance criteria.....	23
9.8.2	Test method.....	23
9.9	Prevention of electrostatic discharge.....	23
9.9.1	Acceptance criteria.....	23
9.9.2	Test method.....	23
9.10	Dispenser ground continuity test.....	24
9.10.1	Acceptance criteria.....	24
9.10.2	Test method.....	24
9.11	Dielectric voltage-withstand test.....	24
9.11.1	Acceptance criteria.....	24
9.11.2	Test method.....	24
9.12	Dispenser cabinet test.....	25
9.12.1	Acceptance criteria.....	25
9.12.2	Test method.....	25
9.13	Marking material adhesion and legibility test.....	25
9.13.1	Acceptance criteria.....	25
9.13.2	Test method.....	25
<b>10</b>	<b>Routine tests.....</b>	<b>26</b>
<b>11</b>	<b>Product literature.....</b>	<b>26</b>
11.1	General.....	26
11.2	Installation.....	26
11.3	Maintenance and service.....	26
11.4	Operation.....	27
<b>Annex A</b>	<b>(informative) Dispenser system types.....</b>	<b>28</b>
<b>Annex B</b>	<b>(informative) Examples of hazardous area classification.....</b>	<b>30</b>
<b>Annex C</b>	<b>(normative) Marking class requirements.....</b>	<b>33</b>
<b>Bibliography</b>	<b>.....</b>	<b>35</b>

This is a preview of ISO 19880-2:2025. [Click here to purchase the full version from the ANSI store.](#)

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 document 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](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 197, *Hydrogen technologies*.

A list of all parts in the ISO 19880 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This is a preview of ISO 19880-2:2025. [Click here to purchase the full version from the ANSI store.](#)

The purpose of this document is to promote the implementation of hydrogen-powered land vehicles through the creation of performance-based safety and testing requirements for compressed hydrogen fuel dispensers. The successful commercialization of hydrogen land vehicle technologies requires codes and standards pertaining to fuelling stations, vehicle fuel system components and the global homologation of standards requirements for technologies with the same end use. This will allow manufacturers to achieve economies of scale in production through the ability to manufacture one product for global use.

This document is a part of the ISO 19880 series for hydrogen fuelling stations with its scope limited to compressed hydrogen dispensers for land vehicles that use hydrogen as fuel. Dispensers are a major component of hydrogen fuelling stations, without which hydrogen vehicles will not become a significant element of mobility in the future. This document includes requirements for manufacture, commissioning and routine maintenance of dispensers in order to ensure the safe operation of dispensing hydrogen to vehicles.

Note [Annex A](#) has additional information about the range of options for dispenser systems.