AS 19880.2:2026

Australian STANDARD®

STANDARDS Australia

Gaseous hydrogen — Fuelling stations

Part 2: Dispensers and dispensing systems (ISO 19880-2:2025, MOD)



AS 19880.2:2026

This Australian Standard® was prepared by ME-093, Hydrogen Technologies. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 24 August 2026.

This Standard was published on 4 September 2026.

The following are represented on Committee ME-093:

- Australia New Zealand Industrial Gas Association
- Australian Gas Association
- Australian Industry Group
- Chemistry Australia
- Energy Networks Australia
- Engineers Australia
- Gas Energy Australia
- Gas Technical Regulators Committee
- Institute of Electrical Inspectors
- National Association of Testing Authorities Australia
- The University of Adelaide

This Standard was issued for comment as DR AS 19880.2:2026

Status of this document

Standards Australia publications are periodically reviewed to ensure their ongoing relevance and accuracy. This document may be withdrawn, revised, or superseded at any time. To verify this document's current status, visit:

www.standards.org.au

ISBN: 978 1 76175 902 4

Australian Standard®

Gaseous hydrogen — Fuelling stations

Part 2: Dispensers and dispensing systems (ISO 19880-2:2025, MOD)

First published as AS 19880.2:2026.

© ISO 2026 — All rights reserved
© Standards Australia Limited 2026

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

Users must not use the content in this publication in combination with artificial intelligence (AI) tools for any purpose, unless they have the express prior written consent from Standards Australia.

How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

This Standard is a modified adoption of an International Standard. It makes changes to the international text.

The changes to the international text are shown in boxes in the text. These boxes have the heading "National Variations".

To use this Standard in Australia/New Zealand, the changes in the national variation boxes need to be followed.

Preface

This Standard was prepared by the Standards Australia Committee ME-093, Hydrogen Technologies.

The objective of this document is to specify safety requirements and test methods for the components and systems that enable the transfer of compressed hydrogen to a hydrogen vehicle, as addressed in AS ISO 19880.1, by a hydrogen dispenser with dispensing pressures up to the H70 pressure class designation.

This document is an adoption with national modifications, and has been reproduced from, ISO 19880-2:2025, *Gaseous hydrogen — Fuelling stations — Part 2: Dispensers and dispensing systems*. The modifications are set out in national variations boxes which give instructions where the ISO text is to be modified for use in Australia. Due to ISO copyright policy, it is not possible to directly modify the ISO content.

As this document has been reproduced from an international document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

© Standards Australia Limited 2026

Contents

Page

Preface ..... **v**
Foreword ..... **viii**
Introduction ..... **ix**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **3**
4 General **8**
5 Requirements **9**
5.1 General material requirements 9
5.2 Construction and assembly requirements 10
5.2.1 General construction and assembly 10
5.2.2 Housings and cabinets 11
5.3 Dispenser hydrogen systems 12
5.4 Piping and fittings 12
5.5 Overpressure protection devices 13
5.6 Filters 14
5.7 Valves 14
5.8 Venting 14
5.9 Dispenser fuelling assembly 14
5.10 Breakaway devices 15
5.11 Instruments for gaseous hydrogen systems 16
5.12 Metering 16
5.13 Precoolers and precooler control 16
5.14 Electrical equipment and wiring 17
5.14.1 General electrical requirements 17
5.14.2 Bonding and grounding 17
5.14.3 Safety instrumented systems 17
5.14.4 Illumination 17
5.14.5 Payment terminals or fuelling authorizing systems 17
5.14.6 Electromagnetic compatibility and interference (EMC) 17
5.15 Emergency shutdown system (ESS) 17
6 Dispensing requirements **18**
6.1 Control of dispensing 18
6.2 Dispensing temperature, pressure and flow rate 19
6.3 Pressure integrity check (leak check) 19
6.4 Fuelling protocol and process limits 19
6.5 Post dispensing 19
7 Dispenser fault management **20**
8 Marking **20**
8.1 General requirements 20
8.2 Dispenser name plate 20
8.3 Self-serve dispenser instructions 21
9 Qualification tests **21**
9.1 General 21
9.2 Standard test conditions 21
9.3 Proof pressure test 21
9.3.1 Acceptance criteria 21
9.3.2 Test method 21
9.4 Leakage test 22
9.4.1 Acceptance criteria 22
9.4.2 Test method 22

© Standards Australia Limited 2026

9.5 Impact test ... 22
9.5.1 Acceptance criteria ... 22
9.5.2 Test method ... 22
9.6 Dispenser shutdown test ... 23
9.6.1 Acceptance criteria ... 23
9.6.2 Test method ... 23
9.7 Hose rupture ... 23
9.7.1 General ... 23
9.7.2 Acceptance criteria ... 23
9.7.3 Test method ... 23
9.8 Hose breakaway test ... 24
9.8.1 Acceptance criteria ... 24
9.8.2 Test method ... 24
9.9 Prevention of electrostatic discharge ... 25
9.9.1 Acceptance criteria ... 25
9.9.2 Test method ... 25
9.10 Dispenser ground continuity test ... 25
9.10.1 Acceptance criteria ... 25
9.10.2 Test method ... 26
9.11 Dielectric voltage-withstand test ... 26
9.11.1 Acceptance criteria ... 26
9.11.2 Test method ... 26
9.12 Dispenser cabinet test ... 26
9.12.1 Acceptance criteria ... 26
9.12.2 Test method ... 27
9.13 Marking material adhesion and legibility test ... 27
9.13.1 Acceptance criteria ... 27
9.13.2 Test method ... 27

10 Routine tests ... 27

11 Product literature ... 28
11.1 General ... 28
11.2 Installation ... 28
11.3 Maintenance and service ... 28
11.4 Operation ... 28

Annex A (informative) **Dispenser system types ... 29**

Annex B (informative) **Examples of hazardous area classification ... 31**

Annex C (normative) **Marking class requirements ... 34**

Bibliography ... 36

© Standards Australia Limited 2026

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 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).

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. 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.

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.

© Standards Australia Limited 2026

Introduction

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.

© Standards Australia Limited 2026

Australian Standard®

Gaseous hydrogen — Fuelling stations

Part 2: Dispensers and dispensing systems (ISO 19880-2:2025, MOD)

1 Scope

This document specifies safety requirements and test methods for the components and systems that enable the transfer of compressed hydrogen to a hydrogen vehicle, as addressed in ISO 19880-1, by a hydrogen dispenser with dispensing pressures up to the H70 pressure class designation.

This document applies to a hydrogen dispensing system, referred to as a "dispenser"; the configuration of the dispenser can range from:

a) a dispenser cabinet, located in the fuelling area, that can perform all of the functionality needed to deliver hydrogen to a vehicle, to

b) a minimum set of components mounted in or on (as applicable) a dispenser cabinet or other supporting structure as appropriate, with the remaining functionality provided elsewhere in the hydrogen fuelling station.

A dispensing system includes the user and vehicle interface and can include components starting from the hydrogen supply, such as a connection to the banking system, a cooling unit, a dispenser control system, a flow meter, a pressure sensor, a fuel temperature sensor, an ambient temperature sensor, user interface and a fuelling hose assembly. Not all dispensing system equipment has to be physically housed within the enclosure at the dispensing area, as long as the specification of component design or type and location are adequate to ensure that the overall process meets the requirements in this document.

This document specifies the requirements for hydrogen dispensers and can provide specific references to other standards for individual components included in the hydrogen dispenser, such as valves (ISO 19880-3) and hoses (ISO 19880-5).

This document specifies general requirements for supporting the fuelling protocol and directs the user to ISO 19880-1 for additional requirements and the test methods required to verify proper fuelling protocol implementation.

This document does not specify the accuracy of flow meters that can be used to meter dispensed fuel.

2 Normative references

NATIONAL VARIATIONS

1. In Clause 2, after the first paragraph, *add* the following:

The Australian and Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the ISO/IEC normative references and are required for the application of this document. All references in the source text to those ISO/IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably.

AS/NZS 3100, *Approval and test specification — General requirements for electrical equipment*

2. *Delete* "ISO 19880-1:2020, *Gaseous hydrogen — Fuelling stations — Part 1: General requirements*" and *replace* with the following:

© Standards Australia Limited 2026