



International
Standard

ISO 17268-1

**Gaseous hydrogen land vehicle
refuelling connection devices —**

Part 1:
**Flow capacities up to and
including 120 g/s**

*Dispositifs de raccordement pour le ravitaillement des véhicules
terrestres en hydrogène gazeux —*

Partie 1: Capacités de débit jusqu'à 120 g/s inclus

**First edition
2025-08**

This document is a preview generated by EMS



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
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General construction requirements	4
5 Nozzles	7
6 Receptacles	9
7 Design verification test procedures	10
7.1 General requirements.....	10
7.2 Test conditions.....	10
7.3 Nozzle tests.....	10
7.4 Receptacle tests.....	10
7.5 User — Machine interface test.....	10
7.6 Dropping test.....	11
7.7 Leakage at room temperature test.....	11
7.8 Valve operating handle test.....	12
7.9 Receptacle vibration resistance test.....	12
7.10 Abnormal loads test.....	12
7.11 Low and high temperatures test.....	13
7.11.1 Purpose.....	13
7.11.2 General.....	13
7.11.3 Leakage tests.....	13
7.12 Operation tests.....	14
7.13 Durability and maintainability test.....	14
7.13.1 Purpose.....	14
7.13.2 Nozzle durability test.....	14
7.13.3 Receptacle check valve durability test.....	15
7.13.4 Receptacle durability test.....	15
7.13.5 Connector durability test.....	16
7.14 Sealing material aging test.....	16
7.14.1 Purpose.....	16
7.14.2 Oxygen aging test procedure.....	16
7.14.3 Ozone aging test procedure.....	16
7.15 Non-metallic material hydrogen resistance test.....	16
7.16 Electrical resistance test.....	17
7.17 Hydrostatic strength test.....	17
7.18 Corrosion resistance test.....	17
7.18.1 Purpose.....	17
7.18.2 General.....	17
7.18.3 Nozzle test.....	17
7.18.4 Receptacle test.....	17
7.19 Deformation test.....	18
7.20 Contamination test.....	18
7.21 Thermal cycle test.....	18
7.22 Misconnected nozzle test.....	18
7.23 Upward/downward compatibility test.....	20
7.23.1 General.....	20
7.23.2 Upward/downward compatibility test.....	20
7.23.3 Other fuels receptacles incompatibility test.....	20
7.24 Washout test.....	20
7.25 User abuse test.....	21
7.26 Cold gas test.....	21
7.27 Rocking test.....	22

ISO 17268-1:2025(en)

7.28	Communication test.....	23
8	Instructions.....	23
9	Marking.....	24
9.1	Mandatory information.....	24
9.2	Non-mandatory information.....	24
Annex A	(normative) Receptacle/nozzle interface envelope.....	25
Annex B	(normative) Hydrogen receptacles.....	26
Annex C	(normative) Loose fit test fixtures.....	33
Annex D	(normative) Tight fit test fixtures.....	39
Annex E	(normative) Wear pattern test fixtures.....	45
Annex F	(informative) Example Hex Design.....	51
Annex G	(normative) Pressure drop test.....	52
Annex H	(normative) Required test fixtures.....	55
Bibliography	56

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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 268, *Cryogenic vessels and specific hydrogen technologies applications*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 17268-1, together with ISO 17268-2, cancels and replaces ISO 17268:2020.

A list of all parts in the ISO 17268 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.

Gaseous hydrogen land vehicle refuelling connection devices —

Part 1: Flow capacities up to and including 120 g/s

1 Scope

This document specifies the design, safety and operation characteristics of gaseous hydrogen land vehicle (GHLV) refuelling connectors.

GHLV refuelling connectors consist of the following components, as applicable:

- receptacle and protective cap (mounted on vehicle);
- nozzle;
- communication hardware.

This document is applicable to refuelling connectors which have nominal working pressures or hydrogen service levels up to 70 MPa and maximum flow rates up to 120 g/s.

This document is not applicable to refuelling connectors dispensing blends of hydrogen with natural gas.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 12103-1, *Road vehicles — Test contaminants for filter evaluation — Part 1: Arizona test dust*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

communication hardware

infrared data association (IrDA) components which are used to transmit signals from the vehicle (*receptacle*) (3.19) to the dispenser (*nozzle*) (3.14) and designed to meet SAE J2799 or equivalent