
Plinske jeklenke - Specifikacija in preskušanje ventilov za jeklenke za utekočinjeni naftni plin (UNP) - Samozaporni ventili (ISO/FDIS 14245:2021)

Gas cylinders - Specifications and testing of LPG cylinder valves - Self-closing (ISO/FDIS 14245:2021)

Gasflaschen - Spezifikation und Prüfung von Flaschenventilen für Flüssiggas (LPG) - Selbstschließend (ISO/FDIS 14245:2021)

Bouteilles à gaz - Spécifications et essais pour valves de bouteilles de GPL - Fermeture automatique (ISO/FDIS 14245:2021)

[oSIST prEN ISO 14245:2021](https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-3126170497/osist-pr-en-iso-14245-2021)

[https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-](https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-3126170497/osist-pr-en-iso-14245-2021)

Ta slovenski standard je istoveten z: prEN ISO 14245

ICS:

23.020.35	Plinske jeklenke	Gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

oSIST prEN ISO 14245:2021**en,fr,de**

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

[oSIST prEN ISO 14245:2021](https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021)

<https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021>

FINAL
DRAFT

INTERNATIONAL
STANDARD

ISO/FDIS
14245

ISO/TC 58/SC 2

Secretariat: AFNOR

Voting begins on:
2021-02-10

Voting terminates on:
2021-05-05

Gas cylinders — Specifications and testing of LPG cylinder valves — Self-closing

Bouteilles à gaz — Spécifications et essais pour valves de bouteilles de GPL — Fermeture automatique

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN ISO 14245:2021](https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021)

<https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021>

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

ISO/CEN PARALLEL PROCESSING



Reference number
ISO/FDIS 14245:2021(E)

© ISO 2021

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN ISO 14245:2021](https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021)
<https://standards.iteh.ai/catalog/standards/sist/fcba2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

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
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Design and specification	4
4.1 General	4
4.2 Materials	5
4.2.1 General	5
4.2.2 Operating temperatures	5
4.2.3 Copper alloys	5
4.2.4 Non-metallic materials	5
4.3 Essential components	6
4.3.1 Valve operating mechanism	6
4.3.2 Valve body	6
4.3.3 Valve stem	6
4.3.4 Valve outlet	6
4.3.5 Excess flow valve	6
4.4 Optional components	7
4.4.1 General	7
4.4.2 Pressure relief valve	7
4.4.3 Eduction tube	7
4.4.4 Fixed liquid level gauge	7
4.4.5 Excess flow valve	7
4.4.6 Non-return valve	7
4.4.7 Liquid level indicator	8
4.4.8 Sealing cap and sealing plug	8
4.4.9 Sediment tube	8
4.5 Leak tightness	8
5 Valve type test	8
5.1 General	8
5.2 Test samples	9
5.3 Test procedure and test requirements	9
5.4 Inspection	10
5.5 Hydraulic pressure test	10
5.5.1 Procedure	10
5.5.2 Requirement	10
5.6 External and internal leak tightness tests	11
5.6.1 Procedure	11
5.6.2 Requirement	11
5.7 Operation test	12
5.7.1 Procedure	12
5.7.2 Requirement	12
5.8 Valve stem test	12
5.8.1 Procedure	12
5.8.2 Requirement	12
5.9 Impact test	13
5.9.1 General	13
5.9.2 Procedure	13
5.9.3 Requirement	15
5.10 Endurance test — Part 1	15
5.10.1 Procedure	15

ISO/FDIS 14245:2021(E)

5.10.2	Requirement.....	15
5.11	Endurance test — Part 2.....	15
5.11.1	Procedure.....	15
5.11.2	Requirement.....	16
5.12	Simulated vacuum test.....	16
5.13	Examination of dismantled valves	16
5.13.1	Procedure.....	16
5.13.2	Requirement.....	16
5.14	Excess flow valve test.....	16
5.14.1	General.....	16
5.14.2	Excess flow valve test with air	16
5.14.3	Excess flow valve test with water.....	17
5.14.4	Excess flow strength test.....	17
5.15	Non-return valve test.....	18
5.15.1	Procedure.....	18
5.15.2	Requirement.....	18
5.16	Vibration test.....	18
5.16.1	Procedure.....	18
5.16.2	Requirement.....	18
6	Documentation and test report	18
6.1	Documentation	18
6.2	Test report.....	19
7	Production testing	19
8	Markings	19
Annex A	(normative) Production testing and inspection	20
Annex B	(normative) Special low temperature requirements	21
Annex C	(normative) Vibration testing	22
Bibliography	23

iTeh STANDARD PREVIEW

(standards.iteh.ai)

oSIST prEN ISO 14245:2021

<https://standards.iteh.ai/catalog/standards/sist/1c6a2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pr-en-iso-14245-2021>

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 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 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 286, *Liquefied petroleum gas equipment and accessories*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 14245:2019) of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— correction of [Clause 8](#), list item c).

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.

ISO/FDIS 14245:2021(E)**Introduction**

This document covers the function of a LPG cylinder valve as a closure (defined by the UN Model Regulations^[15]).

This document has been written so that it is suitable to be referenced in the UN Model Regulations.

Cylinder valves complying with this document can be expected to perform satisfactorily under normal service conditions.

When an LPG cylinder valve has been approved according to a previous edition of this document, the body responsible for approving the same LPG cylinder valve to this new edition should consider which tests need to be performed.

In this document the unit bar is used, due to its universal use in the field of technical gases. It should, however, be noted that bar is not an SI unit, and that the corresponding SI unit for pressure is Pa ($1 \text{ bar} = 10^5 \text{ Pa} = 10^5 \text{ N/m}^2$).

Pressure values given in this document are given as gauge pressure (pressure exceeding atmospheric pressure) unless noted otherwise.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN ISO 14245:2021](https://standards.iteh.ai/catalog/standards/sist/fc8a2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021)
<https://standards.iteh.ai/catalog/standards/sist/fc8a2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021>

Gas cylinders — Specifications and testing of LPG cylinder valves — Self-closing

1 Scope

This document specifies the requirements for design, specification, type testing and production testing and inspection for dedicated LPG self-closing cylinder valves for use with and directly connected to transportable refillable LPG cylinders.

It also includes requirements for associated equipment for vapour and liquid service. Bursting discs and/or fusible plugs are not covered in this document.

[Annex A](#) identifies requirements for production testing and inspection.

This document excludes other LPG cylinder devices which are not an integral part of the dedicated self-closing cylinder valve.

This document does not apply to cylinder valves for fixed automotive installations and ball valves.

NOTE For manually operated LPG cylinder valves see ISO 15995. For cylinder valves for compressed, dissolved and other liquefied gases see ISO 10297, ISO 17871 or ISO 17879.

2 Normative references (standards.iteh.ai)

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 11114-1, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 1: Metallic materials*

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 13341, *Gas cylinders — Fitting of valves to gas cylinders*

ISO 10286, *Gas cylinders — Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10286 and the following apply. ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

ISO/FDIS 14245:2021(E)

3.1 liquefied petroleum gas LPG

low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

[SOURCE: ISO 10286:2015, 723, modified]

3.2 cylinder valve

primary shutoff device fitted to LPG cylinders, intended for liquid or vapour filling and withdrawal

Note 1 to entry: The valve includes the *valve body* (3.8), *valve stem* (3.14), *valve outlet* (3.15) and *valve operating mechanism* (3.22).

Note 2 to entry: The valve can also include additional devices, e.g. *education tube* (3.5) *liquid level indicator* (3.7), *fixed liquid level gauge* (3.6), *excess flow valve* (3.9), *non-return valve* (3.10), *sediment tube* (3.19) and *pressure relief valve* (3.27).

3.3 external leak tightness

leak tightness to atmosphere (leakage in and/or leakage out), when the valve is open

3.4 internal leak tightness

leak tightness across the valve seat (leakage in and/or leakage out), when the valve is closed

3.5 education tube

tube fitted to the valve to allow withdrawal of liquid LPG with the cylinder in its normal operating position

<https://standards.iteh.ai/catalog/standards/sist/fc6a2eb4-71c7-4890-8336-31f2fd7f0d97/osist-pren-iso-14245-2021>

3.6 fixed liquid level gauge

device such as a dip tube in combination with a vent valve to verify that the predetermined maximum liquid level in a cylinder has been reached or surpassed

3.7 liquid level indicator

device such as a float gauge, permitting the gauging of the liquid level in the cylinder

3.8 valve body

major valve component including *valve stem* (3.14) and *valve outlet* (3.15) and, where applicable, the provision for other optional components

3.9 excess flow valve

valve comprising two or more components designed to close or partially close when the flow of liquid or vapour passing through it exceeds a predetermined value and to re-open when the pressure differential across the valve has been restored below a certain value

3.10 non-return valve

automatic valve which allows gas/liquid to flow only in one direction

[SOURCE: ISO 10286:2015, 349, amended — liquid added]

3.11**dual valve**

valve designed to allow separate vapour and liquid withdrawal from a cylinder in its normal operating position each port having its own valve operating mechanism

3.12**sealing element**

element used to obtain *internal leak tightness* ([3.4](#))

3.13**special valve**

valve which is only used for cylinders up to and including 7,5 l water capacity, having a hand wheel diameter less than 30 mm and where the maximum section of gas passage is not more than 4 mm diameter

3.14**valve stem**

section of the *valve body* ([3.8](#)), which connects to the cylinder

3.15**valve outlet**

section of the *valve body* ([3.8](#)) to which a regulator or connector can be fitted for vapour or liquid withdrawal

Note 1 to entry: The valve outlet is also normally used for filling the cylinder.

3.16**type test**

test or series of tests conducted to prove that the design meets the requirements of this document

3.17**cylinder opening**

part of the cylinder to which the *valve stem* ([3.14](#)) connects

3.18**test pressure**

pressure at which the valve or component is tested

3.19**sediment tube**

device designed to reduce the risk of foreign matter, which can be in the cylinder, entering the valve

3.20**sealing cap**

device which is intended to seal the external outlet connection of a valve

[SOURCE: ISO 10286:2015, 368]

3.21**sealing plug**

device which is intended to seal the internal outlet connection of a valve

[SOURCE: ISO 10286:2015, 369]

3.22**valve operating mechanism**

mechanism which closes and opens the valve orifice and which includes the internal and external sealing systems

[SOURCE: ISO 10286:2015, 328, modified — EXAMPLE deleted]

ISO/FDIS 14245:2021(E)

3.23

valve protection cap

device securely fixed over the valve during handling transport and storage and which is removed for access to the valve

[SOURCE: ISO 10286:2015, 360]

3.24

valve shroud

integral part of a cylinder which is permanently attached for valve protection during transportation, handling and storage

[SOURCE: ISO 10286:2015, 362]

3.25

valve guard

device securely fixed over the valve during handling transport and storage and which does not need to be removed for access to the valve

[SOURCE: ISO 10286:2015, 361]

3.26

gross mass

total package mass of the heaviest cylinder on which the valve is intended to be fitted, including any permanently attached accessories and the maximum mass of the LPG content

3.27

pressure relief valve

pressure actuated valve held shut by a spring or other means and designed to relieve excessive pressure automatically by starting to open at the set pressure and reclosing after the pressure has fallen below the set pressure

3.28

nominal set pressure

predetermined pressure of the *pressure relief valve* (3.27) at which the valve is set to start to discharge

3.29

quick coupling connector

system which enables an appliance or equipment to be connected to a cylinder valve without the use of tools

3.30

self-closing cylinder valve

cylinder valve with a normally closed *valve operating mechanism* (3.22) that is actuated by a separate operating device which is not an integral part of the cylinder valve

4 Design and specification

4.1 General

The valve shall be capable of withstanding:

- a) operating pressures and test pressures;
- b) operating temperatures and test temperatures;
- c) mechanical stresses during operation;
- d) vibration during transport.