

ISO 15995:2019



EN ISO 15995:2019

NBN EN ISO 15995:2019



**Gas cylinders - Specifications and testing of LPG cylinder valves -
Manually operated (ISO 15995:2019)**

Valid from 23-10-2019

Replaces NBN EN ISO 15995:2010

ICS: 23.020.35

EUROPEAN STANDARD
 NORME EUROPÉENNE
 EUROPÄISCHE NORM

EN ISO 15995

September 2019

ICS 23.020.35

Supersedes EN ISO 15995:2010

English Version

Gas cylinders - Specifications and testing of LPG cylinder valves - Manually operated (ISO 15995:2019)

Bouteilles à gaz - Spécifications et essais pour valves de
 bouteilles de GPL - Fermeture manuelle (ISO
 15995:2019)

Gasflaschen - Spezifikation und Prüfung von
 Flaschenventilen für Flüssiggas (LPG) - Handbetätigt
 (ISO 15995:2019)

This European Standard was approved by CEN on 30 May 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
 COMITÉ EUROPÉEN DE NORMALISATION
 EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 15995:2019 (E)

Contents

Page

European foreword..... 3

European foreword

This document (EN ISO 15995:2019) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with Technical Committee CEN/TC 286 "Liquefied petroleum gas equipment and accessories" the secretariat of which is held by NSAI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 15995:2010.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 15995:2019 has been approved by CEN as EN ISO 15995:2019 without any modification.

INTERNATIONAL STANDARD

ISO 15995

Second edition
2019-06

Gas cylinders — Specifications and testing of LPG cylinder valves — Manually operated

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



Reference number
ISO 15995:2019(E)

© ISO 2019

ISO 15995:2019(E)**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2019

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
Fax: +41 22 749 09 47
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.....	7
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.....	8
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
4.6 Operating torque.....	8
4.7 Closing torque.....	8
4.8 Opening torque.....	8
5 Valve type test	9
5.1 General.....	9
5.2 Test samples.....	9
5.3 Test procedure and test requirements.....	10
5.4 Inspection.....	11
5.5 Hydraulic pressure test.....	11
5.5.1 Procedure.....	11
5.5.2 Requirement.....	11
5.6 External and internal leak tightness tests.....	11
5.6.1 Procedure.....	11
5.6.2 Requirement.....	12
5.7 Valve stem test.....	12
5.7.1 Procedure.....	12
5.7.2 Requirement.....	13
5.8 Hand wheel fire exposure test.....	13
5.8.1 Procedure.....	13
5.8.2 Requirement.....	13
5.9 Impact test.....	13
5.9.1 General.....	13
5.9.2 Procedure.....	13

ISO 15995:2019(E)

5.9.3	Requirement.....	15
5.10	Excessive closing torque test.....	15
5.10.1	Procedure.....	15
5.10.2	Requirement.....	15
5.11	Excessive opening torque test.....	15
5.11.1	Procedure.....	15
5.11.2	Requirement.....	15
5.12	Endurance test.....	16
5.12.1	Procedure.....	16
5.12.2	Requirement.....	16
5.13	Examination of dismantled valves.....	16
5.13.1	Procedure.....	16
5.13.2	Requirement.....	17
5.14	Excess flow valve test.....	17
5.14.1	General.....	17
5.14.2	Excess flow valve test with air.....	17
5.14.3	Excess flow valve test with water.....	17
5.14.4	Excess flow strength test.....	18
5.15	Non-return valve test.....	18
5.15.1	Procedure.....	18
5.15.2	Requirement.....	18
5.16	Vibration test.....	19
5.16.1	Procedure.....	19
5.16.2	Requirement.....	19
6	Documentation and test report.....	19
6.1	Documentation.....	19
6.2	Test report.....	19
7	Production testing.....	19
8	Markings.....	19
Annex A	(normative) Special valves.....	21
Annex B	(normative) Production testing and inspection.....	22
Annex C	(normative) Special low temperature requirements.....	23
Annex D	(normative) Vibration testing.....	24
Bibliography	25

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*.

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.

This second edition cancels and replaces the first edition (ISO 15995:2006) which has been technically revised. The main changes compared to the previous edition are as follows:

- introduction of new definitions;
- change of informative Annex on production testing to normative Annex;
- new requirement for the valve to withstand vibration during transport and introduction of vibration testing;
- restructure of [Clause 5](#), valve type testing;
- removal of valve testing after ageing;
- increase of valve test pressure for leak tightness tests;
- introduction of excess flow valve testing; and
- introduction of non-return valve testing.

ISO 15995:2019(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.

Considering the changes described in the Foreword, when an LPG cylinder valve has been approved according to the previous version 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 bar = 10^5 Pa = 10^5 N/m²).

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

Gas cylinders — Specifications and testing of LPG cylinder valves — Manually operated

1 Scope

This document specifies the requirements for design, specification, type testing and production testing and inspection of dedicated LPG manually operated 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 B](#) identifies requirements for production testing and inspection.

This document excludes other LPG cylinder devices which are not an integral part of the dedicated manually operated cylinder valve.

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

NOTE For self-closing LPG cylinder valves see ISO 14245. For cylinder valves for compressed, dissolved and other liquefied gases see ISO 10297[2], ISO 17871[6] or ISO 17879[7].

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 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 2859-1:1999, *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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>