



NSAI
Standards

Irish Standard
I.S. EN ISO 22435:2007

Gas cylinders - Cylinder valves with integrated pressure regulators - Specification and type testing (ISO 22435:2007)

© CEN 2007

No copying without NSAI permission except as permitted by copyright law.

I.S. EN ISO 22435:2007

Incorporating amendments/corrigenda/National Annexes issued since publication:
EN ISO 22435:2007/A1:2012

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> EN ISO 22435:2007	<i>Published:</i> 1 September, 2007
This document was published under the authority of the NSAI and comes into effect on: 12 October, 2007		ICS number: 23.020.30
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

ICS 23.020.30

English Version

**Gas cylinders - Cylinder valves with integrated pressure
regulators - Specification and type testing (ISO 22435:2007/Amd
1:2012)**

Bouteilles à gaz - Robinets de bouteilles avec détendeur
intégré - Spécifications et essais de type (ISO
22435:2007/Amd 1:2012)

Gasflaschen - Flaschenventile mit integriertem
Druckminderer - Allgemeine Anforderungen und
Typprüfung (ISO 22435:2007/Amd 1:2012)

This amendment A1 modifies the European Standard EN ISO 22435:2007; it was approved by CEN on 30 November 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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 amendment 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....3

Foreword

This document (EN ISO 22435:2007/A1:2012) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with Technical Committee CEN/TC 23 "Transportable gas cylinders" the secretariat of which is held by BSI.

This Amendment to the European Standard EN ISO 22435:2007 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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

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

Endorsement notice

The text of ISO 22435:2007/Amd 1:2012 has been approved by CEN as a EN ISO 22435:2007/A1:2012 without any modification.

ICS 23.020.30

English Version

Gas cylinders - Cylinder valves with integrated pressure regulators - Specification and type testing (ISO 22435:2007)

Bouteilles à gaz - Robinets de bouteilles avec détendeur intégré - Spécifications et essais de type (ISO 22435:2007)

Gasflaschen - Druckminderer in Flaschenventilen - Allgemeine Anforderungen und Typprüfung (ISO 22435:2007)

This European Standard was approved by CEN on 6 July 2007.

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 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 Management Centre has the same status as the official versions.

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



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword.....3

Foreword

This document (EN ISO 22435:2007) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with Technical Committee CEN/TC 23 "Transportable gas cylinders", the secretariat of which is held by BSI.

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 2008, and conflicting national standards shall be withdrawn at the latest by March 2008.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 22435:2007 has been approved by CEN as a EN ISO 22435:2007 without any modification.

I.S. EN ISO 22435:2007
**INTERNATIONAL
STANDARD**

**ISO
22435**

First edition
2007-09-01

**Gas cylinders — Cylinder valves with
integrated pressure regulators —
Specification and type testing**

*Bouteilles à gaz — Robinets de bouteilles avec détendeur intégré —
Spécifications et essais de type*



Reference number
ISO 22435:2007(E)

© ISO 2007

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	2
4 Symbols and terminology.....	4
5 Design requirements	4
5.1 General.....	4
5.2 Description	5
5.3 Materials	5
5.4 Pressure indicators	6
5.5 Filling connection	6
5.6 Cylinder connection	6
5.7 Outlet connection	6
5.8 Outlet pressure for acetylene	7
5.9 Flow control valve (flow controller)	7
5.10 Pressure adjusting device	7
5.11 Filtration.....	7
5.12 Main shut-off valve	7
5.13 Flow and pressure performance for regulators without flow metering devices	7
5.14 Pressure relief valve	8
5.15 Leakage.....	8
5.16 Mechanical strength	8
5.17 Resistance to ignition.....	9
5.18 Requirement for VIPR with flow metering devices.....	9
5.19 Constructional requirements.....	9
5.20 Valve operating device	9
6 Test methods.....	10
6.1 General.....	10
6.2 Documentation	11
6.3 Number of test samples	11
6.4 Test sequence	12
6.5 Test method for mechanical strength.....	13
6.6 Test methods for flow and pressure performance for regulators without flow metering devices	13
6.7 Test method for relief valve	21
6.8 Pressure retention of the low-pressure side of the pressure regulator.....	21
6.9 Test method for flowmeter mechanical strength	22
6.10 Test method for accuracy of VIPR with flowmeter	22
6.11 Test method for accuracy of VIPR with flowmeter and with fixed orifices.....	22
6.12 Test methods for leakage	22
6.13 Test method for operating and loosening torques	23
6.14 Test method for endurance of the main shut-off mechanism.....	23
6.15 Test method for endurance of the non-return valve	25
6.16 Test method for ignition.....	25
6.17 Test method for resistance to acetylene decomposition	26
6.18 Test method for flame resistance of the valve operating device.....	26
7 Marking	29

8	Instructions	29
	Annex A (normative) Valve impact test	30
	Annex B (informative) Endurance test	32
	Bibliography	36

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 22435 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*.

Introduction

Cylinder valves with integrated pressure regulators are used to reduce the high cylinder pressure to a lower pressure suitable for use.

These functions cover a wide range of inlet and outlet pressures and flows which require specific design characteristics. It is important that the operating characteristics of these valves be specified and tested in a defined manner.

Such valves are more complicated than conventional cylinder valves yet subject to the same environmental and transportation conditions. These conditions should be borne in mind at the design and development stage.

This International Standard pays particular attention to

- suitability of materials,
- safety (mechanical strength, safe relief of excess pressure and resistance to ignition),
- gas-specificity,
- cleanliness,
- testing,
- identification, and
- information supplied.

Gas cylinders — Cylinder valves with integrated pressure regulators — Specification and type testing

1 Scope

This International Standard applies to cylinder valves with integrated pressure regulators (VIPR) intended to be fitted to gas cylinders that convey compressed, liquefied or dissolved gases.

This International Standard is not intended for medical applications (see ISO 10524-3). Further, additional specific requirements for valves fitted with safety valves and bursting discs (see EN 14513) and for valves fitted with residual pressure valves (see ISO 15996) are not covered by this International Standard.

2 Normative references

The following referenced documents are indispensable for the application 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 2503:1998, *Gas welding equipment — Pressure regulators for gas cylinders used in welding, cutting and allied processes up to 300 bar*

ISO 3253, *Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes*

ISO 5145, *Cylinder valve outlets for gases and gas mixtures — Selection and dimensioning*

ISO 5171, *Pressure gauges used in welding, cutting and allied processes*

ISO 7289, *Quick-action couplings with shut-off valves for gas welding, cutting and allied processes*

ISO 7291:1999, *Gas welding equipment — Pressure regulators for manifold systems used in welding, cutting and allied processes up to 300 bar*

ISO/TR 7470, *Valve outlets for gas cylinders — List of provisions which are either standardized or in use*

ISO 9090, *Gas tightness of equipment for gas welding and allied processes*

ISO 10156, *Gases and gas mixtures — Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets*

ISO 10920, *Gas cylinders — 25E taper thread for connection of valves to gas cylinders — Specification*

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

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

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-