SLOVENSKI STANDARD
oSIST prEN ISO 10297:2012

01-oktober-2012

Plinske jeklenke - Ventili za jeklenke - Specifikacija in preskus tipa (ISO 10297:2006)

Gas cylinders - Cylinder valves - Specification and type testing (ISO/DIS 10297:2012)

Gasflaschen - Flaschenventile - Spezifikation und Baumusterprüfungen (ISO/DIS 10297:2012)

Bouteilles à gaz - Robinets de bouteilles - Spécifications et essais de type (ISO/DIS 10297:2012)

Ta slovenski standard je istoveten z: **prEN ISO 10297 rev**

ICS:

23.020.30	Tlačne posode, plinske jeklenke	Pressure vessels, gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Will supersede EN ISO 10297:2006

English Version

Gas cylinders - Cylinder valves - Specification and type testing (ISO/DIS 10297:2012)

Bouteilles à gaz - Robinets de bouteilles - Spécifications et essais de type (ISO/DIS 10297:2012)

Gasflaschen - Flaschenventile - Spezifikation und Baumusterprüfungen (ISO/DIS 10297:2012)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 23.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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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.

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

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Foreword

This document (prEN ISO 10297:2012) 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 document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 10297:2006.

Endorsement notice

The text of ISO/DIS 10297:2012 has been approved by CEN as a prEN ISO 10297:2012 without any modification.

DRAFT INTERNATIONAL STANDARD ISO/DIS 10297

ISO/TC **58**/SC **2** Secretariat: **AFNOR**

Voting begins on **2012-07-19** Voting terminates on **2012-12-19**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Gas cylinders — Cylinder valves — Specification and type testing

Bouteilles à gaz — Robinets de bouteilles — Spécifications et essais de type

[Revision of second edition (ISO 10297:2006)]

ICS 23.020.30; 23.060.40

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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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 10297 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*.

This third edition cancels and replaces the second edition (ISO 10297:2006).

The main technical modifications are the following:

a) Scope: inclusion of cylinder valves with integrated pressure regulators (VIPR), exclusion of quick-release valves and non-return valves;

b) Terms, definitions and symbols: new definitions added and some definitions adapted, e.g. for leak tightness and introduction of new definitions, e.g. valve burst test pressure and endurance torque;

c) Valve design requirements:

   1) General: inclusion of additional requirement of internal leak tightness at −40 °C during transport and storage with additional requirement for impact value as material requirement;

   2) Materials: deletion of requirements already given in ISO 11114-1 and ISO 11114-2; deletion of ageing sensitivity test for non-metallic materials; addition of requirement on ductility of valve body material; addition of requirement on suitability of lubricants for valve test pressure; recommendations amended and now given as notes;

   3) Dimensions: deletion of requirement on bore of the valve with regard to flow requirement and adaption of requirements for valves fitted with a cap according to ISO 11117;

   4) Resistance to mechanical impact: addition of requirement for impact testing valves protected by a guard complying with ISO 11117 but fixed only to the valve;

   5) Valve operating mechanism: inclusion of allowance to increase the endurance torque for some special valve designs and to adjust compressed packed valves during endurance testing; replacement of acetylene flashback test by alternative tests without using acetylene and addition of acetylene decomposition test for main valves of an acetylene bundle;

   6) Valve operating device: addition of requirement on the handwheel diameter required to achieve the minimum closing torque;

7) Resistance to ignition: for highly oxidizing gases limitation of oxygen pressure surge test for cylinder valves for gas cylinders having a minimum cylinder test pressure of 30 bar; addition of requirement of oxygen pressure surge test for gas mixtures containing oxygen or other highly oxidizing gases as well as for air and of detailed information on acceptance criteria; addition of mandatory reference to oxygen pressure surge test for VIPR specified in ISO 22435 or ISO 10524-3 and for cylinder valves with residual pressure valves (RPV) specified in ISO 15996;

d) Production requirements: deletion of all respective requirements but reference to ISO 14246 in scope;

e) Type tests:

1) General: addition of detailed definition of valve family, changes and material variants within a valve family and of corresponding repetition of tests;

2) Documentation: addition of detailed information on documentation required;

3) Test samples: addition of requirement for preconditioning of test samples by the manufacturer;

4) Test pressures: adaption of information on burst test pressure (former hydraulic test pressure);

5) Test gas: addition of requirement for using helium or hydrogen or an inert mixture of these gases for the leak tightness tests for cylinder valves for helium and hydrogen and their mixtures; extension of requirements on gas quality;

6) Test sequence: deletion of leak tightness test before ageing as preconditioning; addition of internal leak tightness test at -40 °C after endurance test; adaption of oxygen pressure surge test for cylinder valves with lubricants not rated for valve test pressure; listing of impact test;

7) Hydraulic burst pressure test: additional testing with the valve seat of the test sample in closed position; adaption of test for valves equipped with actuators;

8) Excessive torque tests: addition of requirement to carry out the test with the handwheel in place; differentiation between handwheel and key/toggle operated valves; extension of tests with requirement of 2 more test samples;

9) Leak tightness tests: reference to informative Annex E for an example of a vacuum test; unification of the lower test pressure of 0,5 bar for all gases; implementation of internal leak tightness test at −40 °C; addition of information on required position of the valve operating mechanism for external leak tightness test; adaption of requirement for test order for all required test pressures; adaption of requirement for changing and maintaining the different test temperatures; adaption of requirement for minimum closing torque;

10) Endurance test: addition of requirement to carry out the test with the handwheel in place and of description of procedure for increasing the endurance torque for some special valve designs;

11) Visual examination: addition of separate subclause for visual examination with detailed information on acceptance criteria;

12) Flame impingement test: addition of detailed information on acceptance criteria; addition of sealing interface degradation as non-acceptance criterion;

13) Oxygen pressure surge test: information transferred to normative Annex C; addition of requirement for testing via different connections if they might be subjected to an oxygen pressure surge, for testing valves for gas mixtures containing oxygen and for previous endurance testing if the lubricants used are not suitable for the valve test pressure; addition of detailed information on calculation of pressurization time; addition of divergent installation requirements for testing main valves; addition of detailed information on acceptance criteria;

14) Acetylene test: information transferred to normative Annex B; replacement of acetylene flashback test by alternative tests (hydraulic burst pressure test and seat leakage test) without using acetylene;

15) Impact test: extension of test by using different valving torques according to ISO 13341 and subsequent hydraulic burst pressure test and internal leak tightness test with requirement of one additional test sample; addition of detailed information on point of impact; addition of acceptance criteria of being opened after the test;

16) Marking: addition of requirement for marking valves oxygen pressure surge tested from different directions; detailed information on marking of inlet and outlet connections;

17) Example of test sequence: information transferred from informative Annex B to informative Annex D and adaptation according to new requirements for valve families and changes and material specifications within a valve family;

18) Addition of informative Annex E, giving an example of a vacuum test;

19) Endurance test equipment and procedure: information transferred from normative Annex C to normative Annex F;

20) Addition of informative Annex H, giving guidance for updating valve conformity on the basis of the previous version of this International Standard.

Introduction

Valves complying with this International Standard can be expected to perform satisfactorily under normal service conditions.

This International Standard pays particular attention to:

a) suitability of materials;

b) safety (mechanical strength, impact strength, endurance, leak tightness, resistance to ignition, resistance to acetylene flashback);

c) testing;

d) identification.

This International Standard is intended to be used under a variety of national regulatory regimes but has been written so that it is suitable for use with the conformity assessment system of the UN Model Regulations for the Transportation of Dangerous Goods. Attention is drawn to requirements in specified relevant national regulations of the country (countries) where the cylinder valves are intended to be used that might override the requirements given in this International Standard.

This International Standard and the UN Model Regulations for the Transportation of Dangerous Goods only covers the main shut-off function of cylinder valves including cylinder valves with integrated pressure regulator (VIPR). Additional features of a cylinder valve like pressure regulators, residual pressure-retaining devices and non-return devices and pressure-relief devices might be covered by other standards and regulations.

In International Standards, weight is equivalent to a force, expressed in Newton. However, in common parlance (as used in terms defined in this International Standard), the word “weight” continues to be used to mean “mass”, but this practice is deprecated (ISO 80000-4).

In this standard 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.

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