



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 23088:2020**  
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**Plinske jeklenke - Periodični pregledi in preskušanje varjenih tlačnih sodov -  
Prostornina do 1000 l (ISO 23088:2020)**

Gas cylinders - Periodic inspection and testing of welded steel pressure drums -  
Capacities up to 1 000 l (ISO 23088:2020)

**Ta slovenski standard je istoveten z: prEN ISO 23088**

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# INTERNATIONAL STANDARD

# ISO 23088

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## Gas cylinders — Periodic inspection and testing of welded steel pressure drums — Capacities up to 1 000 l

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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.

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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*.

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](http://www.iso.org/members.html).

**ISO 23088:2020(E)****Introduction**

This document provides information and procedures for the periodic inspection and testing of pressure drums and the condition of the test equipment. It addresses requirements that reflect current practice and experience. The principal aim of a periodic inspection and testing procedure is that at the satisfactory completion of the inspection the pressure drums can be reintroduced into service for a further period of time.

This document has been written so that it is suitable to be referenced in the UN *Model Regulations*<sup>[2]</sup>.

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# Gas cylinders — Periodic inspection and testing of welded steel pressure drums — Capacities up to 1 000 l

**CAUTION** — Some of the tests specified in this document involve the use of processes that could lead to a hazardous situation.

## 1 Scope

This document specifies the requirements for periodic inspection and testing of welded steel transportable pressure drums of water capacity from 150 l up to 1 000 l and up to 300 bar test pressure intended for compressed and liquefied gases.

## 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 10286, *Gas cylinders — Terminology*

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

ISO 13769, *Gas cylinders — Stamp marking*

ISO 21172-1, *Gas cylinders — Welded steel pressure drums up to 3 000 litres capacity for the transport of gases — Design and construction — Part 1: Capacities up to 1 000 litres*

ISO 22434, *Transportable gas cylinders — Inspection and maintenance of cylinder valves*

ISO 25760, *Gas cylinders — Operational procedures for the safe removal of valves from gas cylinders*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10286 apply.

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

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

### 3.1

#### **pressure drum**

welded transportable pressure receptacle of a water capacity exceeding 150 l and of not more than 1 000 l

EXAMPLE Cylindrical receptacles equipped with rolling hoops, spheres on skids.

[SOURCE: UN *Model Regulations*, as amended]

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### 3.2

#### rejected pressure drum

*pressure drum* (3.1) not fit for service without further evaluation

### 3.3

#### minimum design wall thickness

thickness of the *pressure drum* (3.1) wall calculated from the design standard, taking into account the material properties and dimensions at time of manufacture

[SOURCE: ISO 18119:2018, 3.4, modified — "cylinder" replaced by "pressure drum".]

## 4 Intervals between periodic inspections and tests

A pressure drum shall be due for periodic inspection and testing on its first receipt by a filler following the expiry of the established interval or, in the absence of regulations, in accordance with the UN *Model Regulations* (see [Annex A](#)). The expiry date is based on the last test date shown on the pressure drum.

Provided the pressure drum has not been subjected to abusive and abnormal conditions such as being involved in an accident, heat exposure or other severe conditions that would render the pressure drum unsafe, there is no requirement for the user to return a pressure drum before the contents have been used even though the periodic inspection and test interval has lapsed. However, pressure drums, particularly those containing corrosive gases, should be retested within a period not exceeding twice the periodic inspection and test interval of the applicable regulations.

## 5 List of procedures for periodic inspection and test

Each pressure drum shall be submitted to a periodic inspection and test. The following procedures form the requirements for such inspection and testing, and are explained more fully in later clauses:

- a) identification of pressure drum (see [Clause 6](#));
- b) preparation for inspection and testing (see [Clause 7](#));
- c) depressurization (see [7.2](#));
- d) devalving and flange removal (see [7.3](#));
- e) external visual inspection (see [Clause 8](#));
- f) internal visual inspection (see [Clause 9](#));
- g) supplementary tests (see [Clause 10](#));
- h) inspection of openings and fittings (see [Clause 11](#));
- i) pressure test (see [Clause 12](#));
- j) repair of pressure drums (see [Clause 13](#));
- k) inspection of valves (see [Clause 14](#));
- l) final operations (see [Clause 15](#));
- m) rejection and rendering unserviceable (see [Clause 16](#)).

These procedures should be performed in the sequence listed in order to improve the safety of the operation and to detect potential harmful damage.

When a pressure drum passes the above listed procedures, but the condition of the pressure drum remains in doubt, additional, supplementary tests shall be performed to confirm its suitability for continued service or the pressure drum shall be rejected (see [Clause 16](#)).