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Gas cylinders — Valve protection caps and guards — Design, construction and tests

Bouteilles à gaz — Chapeaux fermés et chapeaux ouverts de protection des robinets — Conception, construction et essais

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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).

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*.

This third edition cancels and replaces the second edition (ISO 11117:2008), which has been technically revised. It also incorporates the Technical Corrigendum ISO 11117:2008/Cor.1:2009. The main changes compared to the previous edition are as follows:

— clarification of requirements for "ISO P A" marking,

— removal of Figure 2,

— substitution of Figure 1 by Figure 1 a) and b), and Figure 3 a) and b),

— addition of other threads than W 80 × 1/11,

— renaming and modification of the "axial test" as "vertical pull test",

— modification of the "drop test" including acceptance criteria,

— modification of marking requirements,

— addition of requirements for the test report,

— removal of normative Annex A "Marking of caps".

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.

Introduction

This document covers devices intended for the protection of cylinder valves, where such protection is fitted to allow safe transport, handling and storage.

This document specifies the principal dimensions, requirements for fitment and drop test procedure, to confirm the provision of adequate valve protection, in the event of the occurrence of a cylinder toppling from its base.

This document has been written so that it is suitable to be referenced in the UN Model Regulations[1].

Gas cylinders — Valve protection caps and guards — Design, construction and tests

1 Scope

This document specifies the requirements for valve protection caps and valve guards used on cylinders for liquefied, dissolved or compressed gases.

Valve protection caps and valve guards are some of the options available to protect cylinder valves, including valves with integral pressure regulators (VIPRs) during transport.

This document is applicable to valve protection caps and valve guards which inherently provide the primary protection of a cylinder valve. It can also be used to test other equipment (e.g., handling devices) attached to cylinder packages, even in cases where the cylinder valve is inherently able to withstand damage without release of the content.

This document excludes protection devices for cylinders with a water capacity of 5 l or less and cylinders whereby the protection device is fixed by means of lugs welded or brazed to the cylinder, or is welded or brazed directly to the cylinder. This document does not cover valve protection for breathing apparatus cylinders.

NOTE Small cylinders (e.g., medical cylinders) are commonly transported in an outer-packaging (e.g., pallet) to meet transport regulations.

This document does not specify requirements that could be necessary to enable the valve protection device to be used for lifting the cylinder.

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 10297:2014, *Gas cylinders — Cylinder valves — Specification and type testing*

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

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 http://www.iso.org/obp.

3.1
valve protection cap
device protecting the valve during handling, transport and storage, which is removed for access to the valve to allow for connection, disconnection, opening and closing

[SOURCE: ISO 10286:2015, 360, modified]