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# Gas cylinders — Composite cylinders and tubes — Periodic inspection and testing

*Bouteilles à gaz — Bouteilles et tubes composites — Contrôles et essais périodiques*

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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 document 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).

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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 4, *Operational requirements for gas cylinders*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 23, *Transportable gas cylinders,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11623:2015), which has been technically revised.

The main changes are as follows:

— revision of the Scope to include cylinders and tubes with a water capacity up to 3 000 l;

— modification of Table 1 to separate abrasion damage based on water capacity of the cylinder;

— clarification that a transparent sleeve may be left in place during inspection (7.1.3);

— clarification on the use of tare during inspection.

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.

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# Introduction

The principal aim of periodic inspection and testing is that at the completion of the test, the cylinders can be reintroduced into service. It is not possible to identify all considerations for periodic inspection and testing of composite cylinders in this document. In such cases or where there is doubt, questions regarding specific cylinders should be directed to the manufacturer or owner.

This document is intended to be used under a variety of national regulatory regimes but has been written so that it is suitable for the application of the UN Model Regulations.[1]

This document also gives other requirements concerning preparation, finishing and maintenance of composite cylinders and tubes as well as the safety precautions for the personnel performing this work. These requirements can be mandatory under other regulations.


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# Gas cylinders — Composite cylinders and tubes — Periodic inspection and testing

## 1 Scope

This document specifies the requirements for periodic inspection and testing to verify the integrity for further service of hoop-wrapped and fully-wrapped composite transportable gas cylinders and tubes, with aluminium-alloy, steel or non-metallic liners or of linerless construction (Types 2, 3, 4, and 5), intended for compressed, liquefied or dissolved gases under pressure, of water capacity from 0,5 l up to 3 000 l.

This document addresses the periodic inspection and testing of composite cylinders and tubes constructed according to ISO 11119-1, ISO 11119-2, ISO 11119-3, ISO 11119-4 or ISO 11515. It can be applied to other composite cylinders and tubes designed to comparable standards when authorized by the competent authority.

As far as practicable, this document can also be applied to cylinders of less than 0,5 l water capacity when authorized by the manufacturer.

NOTE Unless noted by exception, the use of the word "cylinder" in this document refers to both cylinders and tubes.

## 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 7225, *Gas cylinders — Precautionary labels*

ISO 10286, *Gas cylinders — Vocabulary*

ISO 10460, *Gas cylinders — Welded aluminium-alloy, carbon and stainless steel gas cylinders — Periodic inspection and testing*

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

ISO 11119 (all parts), *Gas cylinders — Design, construction and testing of refillable composite gas cylinders and tubes*

ISO 11515, *Gas cylinders — Refillable composite reinforced tubes of water capacity between 450 l and 3000 l — Design, construction and testing*

ISO 11621, *Gas cylinders — Procedures for change of gas service*

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

ISO 13769, *Gas cylinders — Stamp marking*

ISO 18119, *Gas cylinders — Seamless steel and seamless aluminium-alloy gas cylinders and tubes — Periodic inspection and testing*

ISO 22434, *Gas cylinders — Inspection and maintenance of valves*

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

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