AS 2337.3:2020

Australian STANDARD®

Gas cylinder test stations

Part 3: Transportable gas cylinders — Periodic inspection and testing of composite cylinders (ISO 11623:2015, MOD)

STANDARDS Australia

AS 2337.3:2020

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Australasian Fire and Emergency Service Authorities Council
Australasian Institute of Engineer Surveyors
Australasian Institute of Engineering Inspectors
Australia New Zealand Industrial Gas Association
Australian Chamber of Commerce and Industry
Australian Gas Association
Australian Industry Group
Better Regulation Division
Engineers Australia
Fire Protection Association Australia
Gas Energy Australia
Gas Technical Regulators Committee
National Association of Testing Authorities Australia
SafeWork SA
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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee ME-002, Gas Cylinders, to supersede AS 2337.3—2006, *Gas cylinder test stations, Part 3: Transportable gas cylinders — Periodic inspection and testing of composite gas cylinders (ISO 11623:2002, MOD)*.

The objective of this Standard is to specify the requirements for periodic inspection and testing and to verify the integrity for further service of hoop-wrapped and fully-wrapped composite transportable gas cylinders, 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 450 L.

This Standard is written to address the periodic inspection and testing of composite cylinders constructed to ISO 11119-1, ISO 11119-2, and ISO 11119-3 standards and can be applied to other composite cylinders designed to comparable standards when authorized by the competent authority.

As far as practicable, this Standard also can be applied to cylinders of less than 0.5 L water capacity.

This Standard provides the Australian gas industry with a clearer understanding of cylinder testing and cylinder test station requirements in relation to the acceptable test methods for composite cylinders. The proposed change will improve alignment between the AS 2337 series and the AS 2030 series, and also with ISO standards and the current generation of composite cylinders designed to those standards. It is expected that this will result in improved efficiencies for gas cylinder operations and testing organisations in Australia, particularly those required to test composite gas cylinders used in the medical sector and other life-saving applications.

The major changes in this edition are as follows:

(a) Resolves the current contradiction between AS 2337.1 and the AS 2030 series and ISO standards, eliminate ambiguity and the potential for differing interpretations of composite cylinder testing requirements.

(b) Updates the Normative References to include relevant Australian Standards and replace ISO standards with Australian Standards.

A list of all parts in the AS 2337 series can be found in the Standards Australia online catalogue.

This Standard is an adoption with national modifications, and has been reproduced from, ISO 11623:2015, *Gas cylinders – Composite construction – Periodic inspection and testing*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to ISO 11623:2015 for the application of this Standard in Australia.

As this document has been reproduced from an International Standard, the following applies:

(i) In the source text “this International Standard” should read “this Australian Standard”.

(iii) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

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 on 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 WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*.

This second edition cancels and replaces the first edition (ISO 11623:2002), which has been technically revised with the following changes:

— up-to-date terminology particularly for the various types of composite cylinders;

— up-to-date normative references for steel and aluminium-alloy liner materials;

— list defects according to severity with an additional set of acceptance/rejection criteria;

— replacement of the procedure regarding obstructed cylinder valve (former Annex A) with a reference to ISO 25760;

— addition of a new, normative Annex B for the internal inspection of translucent composite cylinders;

— information regarding intervals between periodic inspection and testing based on cylinder type, formerly listed in Tables 1 through 4, moved into new, informative Annex C;

— update of some photographs to provide sharper examples of damage.

This corrected version of ISO 11623:2015 incorporated the following correction.

In 12.5, paragraph 1, the word 'followed' has been replaced with 'preceded'.

Introduction

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

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 the application of the UN Model Regulations (see Reference [1]). Attention is drawn to requirements in the relevant national regulations of the country (countries) where the cylinders are intended to be used that might override the requirements given in this International Standard. Where there is any conflict between this International Standard and any applicable regulation, the regulation always takes precedence.

NOTES

Australian Standard®

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Part 3: Transportable gas cylinders — Periodic inspection and testing of composite cylinders (ISO 11623:2015, MOD)

1 Scope

This International Standard specifies the requirements for periodic inspection and testing and to verify the integrity for further service of hoop-wrapped and fully-wrapped composite transportable gas cylinders, 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 450 l.

This International Standard is written to address the periodic inspection and testing of composite cylinders constructed to ISO 11119-1, ISO 11119-2, and ISO 11119-3 standards and can be applied to other composite cylinders designed to comparable standards when authorized by the competent authority.

As far as practicable, this International Standard also can be applied to cylinders of less than 0,5 l water capacity.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 32, *Gas cylinders for medical use — Marking for identification of content*

ISO 6406, *Gas cylinders — Seamless steel gas cylinders — Periodic inspection and testing*

ISO 7225, *Gas cylinders — Precautionary labels*

ISO 10461, *Gas cylinders — Seamless aluminium-alloy 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 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 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 following terms and definitions apply.

3.1
composite overwrap
fibres (3.3) and *matrix* (3.14) taken together as a combined unit