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Third edition  
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## Gas cylinders — Acetylene cylinders — Periodic inspection and maintenance

*Bouteilles à gaz — Bouteilles d'acétylène — Contrôle et entretien  
périodiques*



Reference number  
ISO 10462:2013(E)

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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. [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. [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 on 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 third edition cancels and replaces the second edition (ISO 10462:2005), which has been technically revised.

The following are the main technical modifications.

- a) The second edition (ISO 10462:2005) has been revised taking EN 12863 into account; EN 12863 has been superseded by this third edition.
- b) Periodic inspection periods are based on the relevant regulations and do not have to be repeated in this International Standard, thus also avoiding possible inconsistencies in case periodic inspection periods are changed in the regulations. Consequently, the former Annex A has been deleted and relevant information is covered in [4.1](#).
- c) For the removal of the valve, reference to ISO 25760 is included and, consequently, the former Annex B has been deleted.
- d) The external visual inspection has been revised; [6.1](#) and Annex B (which was Annex C in the second edition) have been updated accordingly.
- e) The inspection of monolithic porous materials with regard to cracking, crumbling or cavitation is given in greater detail for better clarity. A new [Annex C](#) for the determination of the top clearance has been added.
- f) For the inspection of the valve, reference to ISO 22434 is included and, consequently, the former Annex F has been deleted.

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## Introduction

Acetylene cylinders differ from all other cylinders transporting compressed or liquefied gases in that they contain a porous material and, normally, a solvent in which the acetylene is dissolved. Acetylene cylinders that contain a porous material but no solvent are only used for special applications. For periodic inspections, it is intended that due regard be given to the different types of construction of cylinders and porous materials. This International Standard should be read considering these differences.

The primary objective of the porous material is to limit an acetylene decomposition, if it is initiated, and thus prevent a cylinder incident. If some porous material is missing, or if a defect (e.g. a cavity, crack or void of significant size) exists as a result of breakdown or subsidence of the porous material, the decomposition could progress at a rate that can cause violent failure of the cylinder accompanied by an explosion.

The requirements in this International Standard are mainly those specific to acetylene cylinders. The periodic inspection of acetylene cylinders is to be performed only by competent persons and, in those jurisdictions requiring it, persons authorized by the regulatory authority.

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 Reference [1]. Attention is drawn to requirements in the specified 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.

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), "weight" is used as an equivalent of "mass", but this practice is deprecated (see ISO 80000-4).

Similarly, the unit "bar"<sup>1)</sup>, which is not an SI unit and is deprecated by ISO, is used as an equivalent of Pascal, the SI unit for pressure. This is because of its universal use in the field of technical gases. Pressure values in this International Standard are given as gauge pressure (pressure exceeding atmospheric pressure), unless noted otherwise.

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1) 1 bar = 0,1 MPa = 10<sup>5</sup> Pa; 1 MPa = 1 N/mm<sup>2</sup>.