AS 2875—1995

Australian Standard®

Alloy steel cylinders for compressed gases—Seamless—0.1 kg to 500 kg

This Australian Standard was prepared by Committee ME/2, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 1 December 1994 and published on 5 February 1995.

The following interests are represented on Committee ME/2:

A.C.T. Occupational Health and Safety Office
Aluminium Development Council
Australian Assembly of Fire Authorities
Australian Chamber of Commerce and Industry
Australian Gas Association
Australian Liquefied Petroleum Gas Association
Australian Underwater Federation
Bureau of Steel Manufacturers of Australia
Department of Defence
Department of Employment, Industrial Relations & Training, Tas.
Department of Employment, Vocational Education, Training & Industrial Relations, Qld
Department of Labour, S.A.
Department of Minerals & Energy, Qld
Department of Occupational Health Safety & Welfare, W.A.
Fire Protection Industry Association of Australia
Insurance Council of Australia
Occupational Health & Safety Authority, Vic.
Railways of Australia Committee
Welding Technology Institute of Australia
Work Health Authority
WorkCover Authority of New South Wales

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PREFACE

This Standard was prepared by the Standards Australia/Standards New Zealand Committee ME/2 on Gas Cylinders to supersede AS 2875—1986. It converts the 1986 edition to a variable property code for chromium-molybdenum steels thus obtaining the benefit of steels with strengths up to those specified in BS 5045.1, *Transportable gas containers, Part 1: Specification for seamless steel gas containers above 0.5 litre water capacity,* while still maintaining the proven safety margins.

As the current steel strengths, given in the 1986 edition (600 MPa yield, 770 MPa ultimate), relate to the advances in steel technology, it is, in effect, obsolete. This Standard should raise the efficiency to 4% greater than BS 5045.1 when using BS 5045.1 steel, but still preserving the current efficiency for a low-strength steel.

This Standard does not compromise safety, as the chemical composition limits of steel B are almost identical to those of BS 5045.1, Type CM. The mechanical requirements of Australian and UK steels are almost identical with regard to the quenching and tempering temperatures, and the bend test requirements. There are minor differences in the elongation test where AS 2875 requires 13% on non-standard geometry, while BS 5045.1 requires 14% on standard geometry.

There are to date many millions of BS 5045.1 Type CM cylinders in service, lending strong evidence that this Standard is safe and acceptable.

As an additional safety factor, limits on the strength of the steels used in this Standard, and known to induce stress cracking, are within those stated in the British, American and ISO Standards.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

Alloy steel cylinders for compressed gases—Seamless—0.1 kg to 500 kg

1 SCOPE This Standard specifies requirements for the design, manufacture, testing, and marking of seamless gas cylinders manufactured from alloy steel and of water capacity not less than 0.1 kg and not greater than 500 kg.

NOTE: Appendix A lists the suggested minimum information that should be supplied by the purchaser when ordering gas cylinders covered by this Standard.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1050 Methods for the analysis of iron and steel
1050.2 Determination of carbon content (gravimetric method)
1050.9 Determination of chromium (potentiometric method)
1050.14 Determination of manganese in iron and steel (titrimetric method)
1050.18 Determination of phosphorus (spectrophotometric method)
1050.19 Determination of nickel content—Spectrophotometric method
1050.23 Determination of molybdenum content—Flame atomic absorption spectrometric method
1050.26 Determination of silicon in iron and steel (spectrophotometric method)

1213 Iron and steel—Methods of sampling

1391 Methods for tensile testing of metals

2030 The approval, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases (known as the SAA Gas Cylinders Code)
2030.1 Part 1: Cylinders for compressed gases other than acetylene

2337 Gas cylinder test stations
2337.1 Part 1: General requirements, inspections and tests—Gas cylinders

2505 Methods for bend and related testing of metals
2505.1 Part 1: Sheet, strip and plate

K1 Methods for the sampling and analysis of iron and steel
K1.16 Determination of sulfur in steel (gravimetric method)

BS
5045 Transportable gas containers
5045.1 Part 1: Seamless steel gas containers above 0.5 litre water capacity

ISO
2566 Steel—Conversion of elongation values
2566.1 Part 1: Carbon and low alloy steels

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2030.1 and the following definition apply:

Inspector—a person, acceptable to the regulatory authority, who ensures and certifies that all inspections specified herein have been carried out and that the cylinders comply with all the requirements of this Standard.