

Australian Standard™

Gas cylinder test stations

**Part 1: General requirements,
inspection and tests—Gas cylinders**



**STANDARDS
AUSTRALIA**

This Australian Standard was prepared by Committee ME-002, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 11 June 2004. This Standard was published on 30 August 2004.

The following are represented on Committee ME-002:

Air Conditioning and Refrigeration Wholesalers Association
Australasian Institute of Engineer Surveyors
Australian Chamber of Commerce and Industry
The Australian Gas Association
Australian Liquefied Petroleum Gas Association
Certification Bodies (Australia)
Department for Administrative and Information Services, S.A.
Fire Protection Association of Australia
Institute of Materials Engineering Australasia Ltd
Pressure Equipment Association Incorporated
Victorian WorkCover Authority
Welding Technology Institute of Australia
WorkCover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 2337.1—2004

Gas cylinder test stations

Part 1: General requirements, inspection and tests—Gas cylinders

RECONFIRMATION NOTICE

Technical Committee ME-002 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 21 July 2016.

The following are represented on Technical Committee ME-002:

Australasian Fire and Emergency Service Authorities Council
Australia New Zealand Industrial Gas Association
Australian Chamber of Commerce and Industry
Engineers Australia
Environmental Protection Authority New Zealand
Fire Protection Association Australia
Gas Energy Australia
Gas Technical Regulation Committee
International Accreditation New Zealand
National Association of Testing Authorities Australia
SafeWork NSW
The Australian Gas Association
Welding Technology Institute of Australia
Worksafe New Zealand
WorkSafe Victoria

NOTES

Currently in preview, click buy full vers.

Australian Standard™

Gas cylinder test stations

**Part 1: General requirements,
inspection and tests—Gas cylinders**

Originally in part as part of AS CB22—1966.
Previous edition AS 2337.1—1999.
Current edition 2004.

COPYRIGHT

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 6230 1

PREFACE

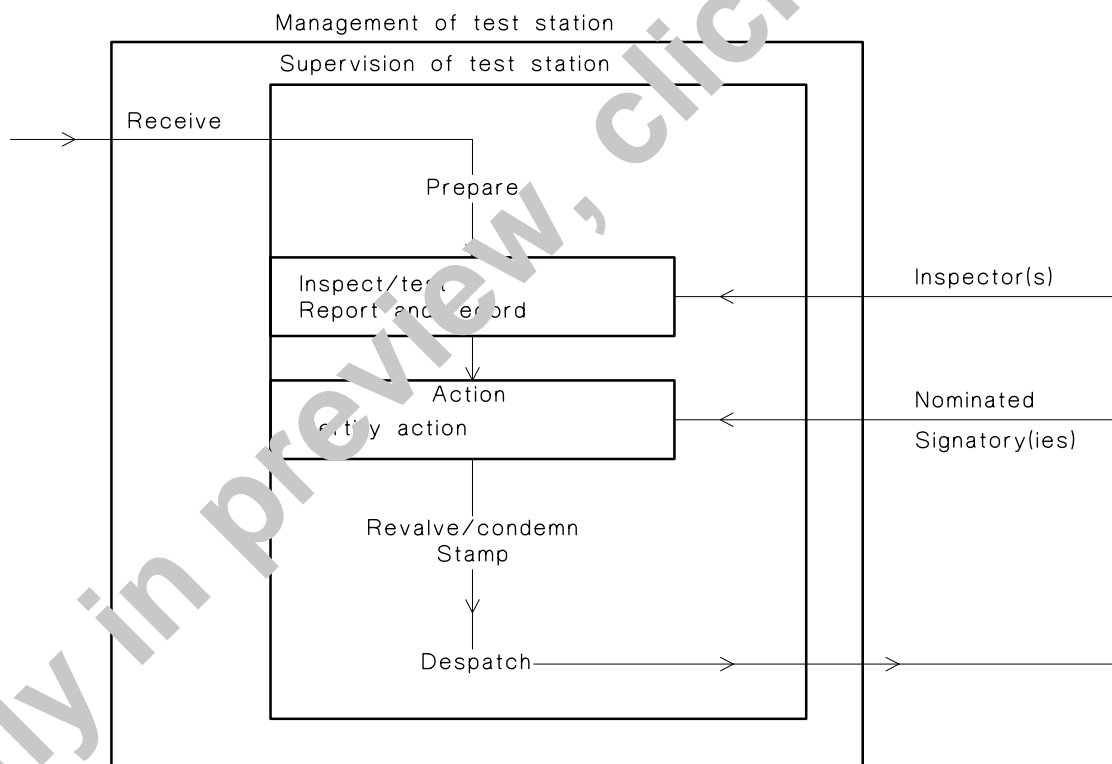
This Standard was prepared by the Australian members of the Joint Australia/New Zealand Standards Committee ME-002, Gas Cylinders to supersede AS 2337.1—1999. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard, rather than an Australian/New Zealand Standard.

The objective is to provide gas cylinder test station operators with the requirements and procedures to carry out initial and periodic inspections to comply with regulatory needs.

This revision has arranged the steps in inspecting and testing gas cylinders in a similar way to those in ISO/DIS 6406, although significant differences still exist between the two Standards. The Committee is trying to align as far as possible, Australian Standards for gas cylinders with those prepared by ISO/TC 58 Gas Cylinders.

The division of functions within a test station has caused some difficulties where the titles of personnel do not match the positions of the organization in which the test station operates. It is necessary to cater for different types of organization, from one person to a large operation with activities other than cylinder testing.

The diagram given below may help explain the intended function.



NOTE: The boxes show minimum tasks that may be taken up by the nominated person where this will not interfere with her/his primary responsibility.

A certificated gas cylinder test station scheme is operated by the appropriate Certification Organizations in Australia. Certification Organizations carry out the initial assessment and periodic audits.

From 1995 there has been, and will continue to be, a phasing out of State and Territory regulatory authorities approving and verifying compressed gas cylinder design and testing and a phasing in of competent bodies or persons to undertake this task.

The Standard removes references to matters of approval with regard to the State and Territorial regulatory authorities. Gas cylinder test stations will be given certificates of conformity with the appropriate Standard instead of approval. These changes align with the changes that have taken place within AS 2030.1. The Standard also introduces a new concept regarding testing. Acoustic emission test methods are introduced as an alternative to traditional hydraulic testing for tubes made to specified DOT Standards. This complements ultrasonic examination as recognized test methods based in newer technologies.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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.

IT SHOULD BE NOTED THAT COMPLIANCE WITH THIS STANDARD MAY NOT NECESSARILY FULFIL ALL LEGAL REQUIREMENTS.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	6
1.2 REFERENCED DOCUMENTS	6
1.3 DEFINITIONS	7
1.4 TEST STATION COMPLIANCE	8
SECTION 2 CLASSIFICATION OF TEST STATION OPERATIONS	
2.1 GENERAL	9
2.2 TYPES OF CYLINDERS AND CONTENTS	9
2.3 MODES OF OPERATION	9
2.4 EQUIPMENT REQUIREMENTS	10
SECTION 3 PERSONNEL, PROCEDURES AND BASIC EQUIPMENT	
3.1 MANAGEMENT AND PERSONNEL	11
3.2 OPERATIONS AND PROCEDURES	12
3.3 WORKPLACE AND EQUIPMENT	13
SECTION 4 INSPECTIONS AND TESTS TO BE PERFORMED	
4.1 IDENTIFICATION OF CYLINDER AND PREPARATION FOR INSPECTION AND TESTS	16
4.2 CYLINDERS ALREADY STAMPED WITH A CERTIFICATED TEST STATION MARK	16
4.3 INSPECTION OF CYLINDERS WITHOUT A CERTIFICATED TEST STATION MARK	16
4.4 INSPECTION WHERE THE CYLINDER SHOWS EVIDENCE OF A DEFECT PRIOR TO FILLING	17
4.5 REPAIRED CYLINDERS	17
4.6 CHANGE OF GAS TRAFFIC	17
SECTION 5 PREPARATION FOR INSPECTION AND TEST	
5.1 INITIAL CERTIFICATED TEST STATION MARK	18
5.2 IDENTIFICATION OF GAS CONTENTS	18
5.3 DEPRESSURIZATION AND VALVE REMOVAL	19
SECTION 6 VISUAL INSPECTIONS	
6.1 GENERAL	20
6.2 EXTERNAL EXAMINATION	20
6.3 INTERNAL EXAMINATION	23
6.4 INSPECTION OF CYLINDER NECK	24
6.5 DEFECTS AND ACTION	25
SECTION 7 PRESSURE TEST OR ULTRASONIC EXAMINATION	
7.1 GENERAL	26
7.2 HYDRAULIC PRESSURE TESTS	26
7.3 ULTRASONIC EXAMINATION	28
7.4 ACOUSTIC EMISSION TEST	28

	<i>Page</i>
SECTION 8 TARE MASS TESTING	
8.1 GENERAL	29
8.2 EQUIPMENT	29
8.3 ACCURACY OF EQUIPMENT.....	29
8.4 CALIBRATION PERIOD	29
8.5 REJECTION CRITERIA.....	29
SECTION 9 PROCEDURES FOR CYLINDERS WHICH HAVE FAILED AN INSPECTION OR TEST	
9.1 GENERAL	30
9.2 REJECTED CYLINDERS.....	30
9.3 CONDEMNED CYLINDERS.....	30
9.4 RE-HEAT TREATMENT (STEEL CYLINDERS ONLY).....	30
SECTION 10 PROCEDURES FOR CYLINDERS WHICH HAVE PASSED AN INSPECTION OR TEST	
10.1 STAMPING.....	31
10.2 VALVE INSTALLATION	31
SECTION 11 RECORDS AND TEST REPORT	
11.1 RECORDS.....	34
11.2 TEST REPORT	34
APPENDICES	
A HYDRAULIC STRETCH TEST	36
B HYDRAULIC PROOF TEST	43
C PNEUMATIC TEST.....	45
D TEST STATION EQUIPMENT REQUIREMENTS	47
E INTEGRATED GAS CYLINDER TEST STATIONS.....	49
F SUGGESTED DEVICES FOR HANDLING OBSTRUCTED AND DAMAGED VALVES	50
G PROCEDURE DIAGRAMS FOR GAS CYLINDER TESTING.....	52
H ASSISTANCE IN THE INSPECTION FOR INTERNAL CRACKS IN SEAMLESS CYLINDERS.....	55
I EXAMPLE OF TEST REPORT	58

STANDARDS AUSTRALIA

Australian Standard
Gas cylinder test stations

Part 1: General requirements, inspection and tests—Gas cylinders

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements and procedures for a gas cylinder test station to carry out initial and periodic inspection of gas cylinders covered by AS 2030.1. It also specifies requirements for test stations to obtain a certificate of conformity.

Specific requirements for inspection and testing of LP Gas fuel vessels, applied in accordance with AS/NZS 1425, and composite (FRP) gas cylinders are given in AS 2337.2 and AS 2337.3.

NOTE: Appendix G provides flowcharts to illustrate testing procedures.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1349	Bourdon tube pressure and vacuum gauges
2030	The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases
2030.1	Part 1: Cylinders for compressed gases other than acetylene
2337	Gas cylinder test stations
2337.2	Part 2: LP Gas fuel vessels for automotive use
2337.3	Part 3: Inspection and testing of fibre reinforced plastics (FRP) gas cylinders
2381	Electrical equipment for explosive atmospheres—Selection, installation and maintenance
2381.7	Part 7: Intrinsic safety
2473	Valves for compressed gas cylinders (threaded outlet)
2613	Safety devices for gas cylinders
3848	Filling of portable gas cylinders
3848.2	Part 2: Filling of portable cylinders for self-contained underwater breathing apparatus (SCUBA) and non-underwater self-contained breathing apparatus (SCBA)—Safe procedures
MP 48	Certificated gas cylinder test stations
AS/NZS	
1425	LP Gas fuel systems for vehicle engines
2739	Natural gas (CNG) fuel systems for vehicle engines
ASTM	
E1419	Examination of seamless gas-filled pressure vessels using acoustic emission