

AS 2337.3—1998

Australian Standard™

---

## **Gas cylinder test stations**

### **Part 3: Inspection and testing of fibre reinforced plastics (FRP) gas cylinders**

---

This Australian Standard was prepared by Committee ME/2, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 18 September 1998 and published on 5 November 1998.

---

The following interests are represented on Committee ME/2:

A.C.T. WorkCover  
Airconditioning and Refrigeration Wholesalers Association  
Australian Association of Certification Bodies  
Australian Chamber of Commerce and Industry  
Australian Institute of Pressure Equipment Engineers  
Australian Liquefied Petroleum Gas Association  
Boiler and Pressure Vessel Manufacturers Association of Australia  
Department for Administration and Information, S.A.  
Department of Defence, Australia  
Department of Mines and Energy, Qld  
Department of Training and Industrial Relations, Qld  
Fire Protection Association of Australia  
Institute of Metals and Materials Australasia  
Institution of Engineers Australia  
The Australian Gas Association  
Victorian WorkCover Authority  
Welding Technology Institute of Australia  
Work Health Authority, N.T.  
WorkCover New South Wales  
Workplace Standards Authority, Tasmania

---

**Review of Australian Standards.** To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

---

*This Standard was issued in draft form for comment as DR 96333.*

AS 2337.3—1998

Australian Standard™

---

## **Gas cylinder test stations**

### **Part 3: Inspection and testing of fibre reinforced plastics (FRP) gas cylinders**

---

Originated as AS 2337.3—1987.  
Second edition 1998.

Incorporating:  
Amdt 1—1999

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME/2, Gas Cylinders, to supersede AS 2337.3—1987, *Gas cylinder test stations, Part 3: Inspection and testing of fibre reinforced plastics (FRP) aluminium alloy gas cylinders—Hoop overwrapped*. It is the result of consensus among representatives on the Joint Committee to issue it as an Australian Standard, pending its proposed adoption in New Zealand.

The main changes in this Standard are in the Title, the Preface and the Scope, together with additions and requirements to cover the three types of overwrapped gas cylinders and expanded or revised acceptance criteria.

This Standard now extends the scope to cover all types of FRP wrapped cylinders including—

- (a) hoop-wrapped metal liners;
- (b) fully-wrapped metal liners; and
- (c) fully-wrapped non-metal liners.

In particular, this revision adds specific requirements for hoop-wrapped gas cylinders with seamless steel liners, used primarily as fuel containers on natural gas powered vehicles.

This Standard requests additional information from the importer or the manufacturer for a test regime. This information is to be supplied by the importer at the time and point of importation. If the cylinder is manufactured to an Australian Standard within Australia, the information is to be supplied prior to entry into Australian Gas Traffic.

This Standard is intended to provide guidance to certified gas cylinder test stations on the method and criteria for examination.

The intervals of testing, and service life, are specified in AS 2030.1—1989, *The approval, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases (known as the SAA Gas Cylinders Code)*, Part 1: *Cylinders for compressed gases other than acetylene*.

FRP materials are more prone to damage and degradation over time than metals. Thus the use of proper inspection and testing techniques coupled with proper installation is essential to continued safe performance.

Each element of the FRP gas cylinder is important. The liner is a leak-tight container and provides significant structural strength in hoop-wrapped cylinders with metal liners. The reinforcing fibres provide the major proportion of the structural strength. The resin protects the reinforcing fibres and facilitates transfer of forces between fibres. An external protective covering or coating may be used for further protection from the environment or for cosmetic purposes.

This Standard is based on the assumption that cylinder designs are subject to verification by an independent competent inspection body as a criteria for registration of the gas cylinder designs by the regulatory bodies throughout Australia.

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.

## CONTENTS

	<i>Page</i>
1 SCOPE .....	4
2 REFERENCED DOCUMENTS.....	4
3 DEFINITIONS .....	4
4 PREPARATION OF CYLINDER FOR INSPECTION .....	5
5 INSPECTION AND TEST .....	5
6 REPAIR OF CYLINDERS .....	6
7 STAMPING OR MARKING .....	6
8 CONDEMNING.....	7
9 EXPLANATION OF VISUAL ASSESSMENT OF COMPOSITE GAS CYLINDERS BUILT TO AUSTRALIAN STANDARDS .....	7
10 EXPLANATION OF VISUAL ASSESSMENT OF COMPOSITE GAS CYLINDERS BUILT TO OTHER STANDARDS .....	7
APPENDICES	
A BACKGROUND INFORMATION ON FRP GAS CYLINDERS .....	18
B PROCEDURE FOR THE REPAIR OF OVERWRAP DAMAGE ON FRP COMPRESSED GAS CYLINDERS.....	19
C EXAMPLES OF CUT CALCULATIONS .....	20

## © Copyright – STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-