

Australian Standard™

**The safe use of portable and mobile  
oxy-fuel gas systems for welding,  
cutting, heating and allied processes**



This Australian Standard was prepared by Committee ME-002, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 31 August 2001 and published on 28 September 2001.

---

The following interests are represented on Committee ME-002:

A.C.T. WorkCover  
Airconditioning and Refrigeration Wholesalers Association  
Australasian Institute of Engineer Surveyors  
Australasian Railway Association  
Australian Association of Certification Bodies  
Australian Chamber of Commerce and Industry  
Australian Industry Group  
Australian Liquefied Petroleum Gas Association  
Boiler and Pressure Vessel Manufacturers Association of Australia  
Bureau of Steel Manufacturers of Australia  
Department for Administrative and Information Services, S.A.  
Department of Defence, Australia  
Department of Employment Training and Industrial Relations, Qld  
Department of Labour New Zealand  
Department of Mines and Energy, Qld  
Fire Protection Association of Australia  
Institute of Materials Engineering Australasia  
Institution of Engineers  
International Accreditation New Zealand  
New Zealand Institute of Welding  
The Australian Gas Association  
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 Standards may also be withdrawn.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 Australia web site at [www.standards.com.au](http://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 Australian Standard*, has a full listing of revisions and amendments published each month.

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.com.au](mailto:mail@standards.com.au), or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

---

STANDARDS AUSTRALIA

---

RECONFIRMATION

OF

AS 4839—2001

**The safe use of portable and mobile oxy-fuel gas systems for welding, cutting,  
heating and allied processes**

---

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™

**The safe use of portable and mobile  
oxy-fuel gas systems for welding,  
cutting, heating and allied processes**

First published as AS 4839—2001.

**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 4101 0

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-002, Gas Cylinders.

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

The objective of this Standard is to enable owners and operators to understand the function of equipment used in portable and mobile oxy-fuel systems for welding, cutting, heating and allied processes. It also provides guidelines for the use of oxy-fuel systems and the maintenance functions to be carried out. Finally, there is information for safety of personnel should an emergency arise during the period of oxy-fuel system equipment use.

Included in the Standard are general details of the properties of the most common gases used in oxy-fuel systems.

Reticulated systems and fixed piping, together with equipment such as permanently mounted flame-cutting machines, are outside the scope of this Standard.

During the development of this Standard, acknowledgments were made to the following documents:

- BCGA-CP7 The safe use of oxy-fuel gas equipment (individual portable or mobile cylinder supply)
- BS EN 730 Gas welding equipment — Equipment used in gas welding, cutting and allied processes, safety devices for fuel gases and oxygen or compressed air — General specifications, requirements and tests.

Government authorities and regulations may affect the use of this Standard, and users of this Standard should be aware of this possibility.

It should be noted that compliance with this Standard may not necessarily fulfil all legal obligations.

## CONTENTS

	<i>Page</i>
1 SCOPE.....	4
2 REFERENCED DOCUMENTS.....	4
3 DEFINITIONS.....	4
4 GASES (SOME PROPERTIES).....	5
5 GAS CYLINDER STORAGE AND HANDLING.....	6
6 EQUIPMENT SPECIFICATION.....	7
7 SYSTEM ASSEMBLY, FLOW CAPACITY AND SAFETY DEVICES.....	10
8 LEAK TESTING AND MAINTENANCE.....	13
9 SYSTEM OPERATION.....	17
10 SAFETY INSTRUCTIONS.....	18
11 EMERGENCIES INVOLVING COMPRESSED GAS CYLINDERS.....	20

## STANDARDS AUSTRALIA

## Australian Standard

**The safe use of portable and mobile oxy-fuel gas systems for welding,  
cutting, heating and allied processes**

**1 SCOPE**

This Standard specifies selection, operation and maintenance procedures for oxy-fuel gas hand-held or portable equipment used in welding, cutting, heating and allied processes.

This Standard applies to equipment supplied from portable or mobile gas cylinders, inclusive of manifolded packs of cylinders. Cylinder mounted regulators, which may be easily removed by the users, control the downstream pressure for this equipment. The connection between the regulator and the downstream equipment is welded in place.

Reticulated systems and fixed piping, together with equipment such as permanently mounted flame-cutting machines, are outside the scope of this Standard.

**2 REFERENCED DOCUMENTS**

## AS

- |        |   |
|--------|---|
| 1335   | Hose and hose assemblies for welding, cutting and allied processes  |
| 2030   | The verification, filling, inspection, testing and maintenance of cylinders for storage and transport of compressed gas |
| 2030.1 | Part 1: Cylinders for compressed gases other than acetylene   |
| 4267   | Pressure regulators for use with industrial compressed gas cylinders  |
| 4289   | Oxygen and acetylene gas regulation systems   |
| 4332   | The storage and handling of gases in cylinders  |
| 4603   | Flashback arresters—Safety devices for use with fuel gases and oxygen or compressed air                                 |

## AS/NZS

- |      |  |
|------|--|
| 1336 | Recommended practices for occupational eye protection            |
| 1337 | Eye protectors for industrial applications                       |
| 1715 | Selection, use and maintenance of respiratory protective devices |
| 1716 | Respiratory protective devices                                   |
| 2865 | Safe working in a confined space                                 |

**3 DEFINITIONS**

For the purpose of this Standard, the definitions given in AS 2030.1 and those below apply.

**3.1 Backfire**

Momentary retrogression of the flame into the mixed gas passages of the blowpipe, accompanied with a loud or popping noise, and with or without flame extinction.

**3.2 Backflow**

Flow of gas from one of the inlet gas passages of the blowpipe at higher pressure into the other gas passages at lower pressure, including possibly the hose.