AS 4289—1995
Reconfirmed 2016

Australian Standard®

Oxygen and acetylene gas reticulation systems

This Australian Standard was prepared by Committee ME/2, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 18 April 1995 and published on 5 August 1995.

The following interests are represented on Committee ME/2:

Australian Chamber of Commerce and Industry

Australian Chamber of Manufactures

Australian Gas Association

Australian Liquefied Petroleum Gas Association

Boiler and Pressure Vessel Manufacturers

Department of Defence

Department of Employment, Vocational Education, Training and Industrial Relations, Qld

Department for Industrial Affairs, S.A.

Department of Labour, New Zealand

Department of Minerals and Energy, Qld

Department of Occupational Health, Safety and Welfare, W.A.

Fire Protection Industry Association of Australia

Health and Safety Organization, Vic.

Institute of Metals and Materials Australasia

Insurance Council of Australia

Tasmania Development and Resources

Telarc New Zealand

Welding Technology Institute of Australia

WorkCover Authority, A.C.T.

WorkCover Authority, N.S.W.

Work Health Authority, N.T.

This Standard was issued in draft form for comment as DR 93334.

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 4289—1995
Oxygen and acetylene gas reticulation systems

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 Regulators 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

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PREFACE

This Standard was prepared by the Standards Australia/Standards New Zealand Committee ME/2 on Gas Cylinders.

This Standard is the result of a consensus amongst representatives on the Joint Committee to produce it as an Australian Standard.

It was designed to meet the needs of persons associated with the design, construction, operation and maintenance of reticulation systems for the safe handling of oxygen and acetylene. It also deals with the safe storage and location of supply cylinders and manifolds.

In view of the unique properties of oxygen and acetylene and the need for the greatest care to be exercised in their use, Appendices are included to assist those using the reticulated gases when end-use equipment is connected to the outlet points. Precautions when using oxygen and acetylene are included. This Standard does not cover the supply of gases from oxygen and acetylene generators.

During the development of this Standard, acknowledgment is made to the following documents:

BCGA-CP4: Industrial gas cylinder manifolds and distribution pipelines (excluding acetylene)

BCGA-CP6: The safe use of acetylene in the pressure range 0 to 150 kPa

IGC 9/78/E Code of Practice for acetylene pipelines based upon working ranges

IGC 20/83/E: Distribution of oxygen, acetylene and methylacetylene mixtures at users' works

IGC 33/86/E: Cleaning of equipment for oxygen service—Guidelines

This Standard limits the size of the pipe to be used in reticulation systems carrying oxygen and acetylene. Guidance will be sought from industry concerning the use of larger diameter piping after this Standard has been in use for a period of time.

This Standard has not given connection details for outlet point valves. A working group has been formed to look at a suitable specification. It is expected that an amendment would be finalized no earlier than a year from the issuing of this Standard to fully specify these connections.

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.

At the time of publication, the Committee noted that work was underway toward creating a Standard covering the storage and handling of gas cylinders and will enter into consultation to ensure that compatibility between Standards will be achieved.

CONTENTS

Page

Page

First published as AS 4289—1995.

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STANDARDS AUSTRALIA

Australian Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for the design, assembly, installation, testing, operation and maintenance of gaseous oxygen and acetylene piping, manifolds and equipment used for the reticulation of these gases in industrial and laboratory applications. It does not apply to oxygen used for breathing purposes. Also, it does not apply to oxygen and acetylene cylinders on carts.

The Standard applies to the following:

(a) Piping sizes up to 38 mm NB for industrial grade oxygen at pressures not exceeding 2100 kPa, and supplied either from high-pressure (H.P.) oxygen cylinders fitted with connections which comply with AS 2473, or from an oxygen vaporizer fed from a liquid oxygen storage vessel.

(b) Piping sizes up to 32 mm NB for acetylene within the allowable pressure range for the particular NB of the piping being used, and not exceeding 150 kPa. Supply of acetylene into the piping shall be from cylinders.

Piping in Items (a) and (b) shall comply with AS 4041.

Future direction concerning larger piping sizes beyond those indicated in the Scope will need guidance from industry (see Preface).

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

AS

1319 Safety signs for the occupational environment

1335 Hose and hose assemblies for general purpose gas welding and allied processes

1345 Identification of the contents of piping, conduits and ducts (incorporating Amendment 1)

1349 Bourdon tube pressure and vacuum gauges

1530 Methods for fire tests on building materials, components and structures
1530.1 Part 1: Combustibility test for materials
1530.4 Part 4: Fire-resistance test of elements of building construction

1674 Safety in welding and allied processes
1674.1 Part 1: Fire precautions

2381 Electrical equipment for explosive atmospheres—Selection, installation and maintenance
2381.1 Part 1: General requirements

2430 Classification of hazardous areas
2430.1 Part 1: Explosive gas atmospheres (IEC 79-10)

2444 Portable fire extinguishers—Selection and location

2473 Valves for compressed gas cylinders (threaded outlet)