Australian/New Zealand Standard™

Gas distribution networks

Part 2: Steel pipe systems





AS/NZS 4645.2:2018

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee AG-008, Gas Distribution. It was approved on behalf of the Council of Standards Australia on 9 February 2018 and by the New Zealand Standards Approval Board on 31 January 2018.

This Standard was published on 28 February 2018.

The following are represented on Committee AG-008:

Access Canberra Australian Industry Group Australian Pipelines and Gas Association Department of Planning and Environment (Division of Energy, Water and Portfolio Strategy) NSW Energy Networks Australia Engineers Australia Gas Association of New Zealand Gas Energy Australia Gas Technical Regulators Committee International Copper Association Australia LPG Association of New Zealand New Zealand Institution of Gas Engineers Plastics Industry Pipe Association of Australia Plastics New Zealand Welding Technology Institute of Australia WorkSafe New Zealand (Energy Safety)

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 Standards may also be withdrawn.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 joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com or Standards New Zealand web site at www.standards.govt.nz and looking up the relevant Standard in the online catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 4645.2:2017.

AS/NZS 4645.2:2018

Australian/New Zealand Standard™

Gas distribution networks

Part 2: Steel pipe systems

Originated in Australia as AS 1697—1981. Previous and joint edition AS/NZS 4645.2:2008. Second edition 2018.

COPYRIGHT

© Standards Australia Limited

© The Crown in right of New Zealand, administered by the New Zealand Standards Executive

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, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee AG-008 Gas Distribution, through its subcommittee AG-008-02, Installation and Maintenance of Steel Pipe Systems for Gas, to supersede AS/NZS 4645.2:2008.

The objective of this Standard is to provide for the protection of the general public, gas distribution network operating personnel and the environment, and to ensure safe and reliable operation of gas distribution networks that reticulate gas to consumers.

This Standard covers steel piping within gas distribution networks covered by AS/NZS 4645.1, where the maximum allowable operating pressures up to or equal to 1050 kPa and the hoop stress is less than or equal to 20% SMYS of the pipe. Steel piping systems for gas outside these limits are generally covered by the AS 2885 suite of Standards and for some jurisdictions. AS/NZS 4645.1 provides for limited use up to 1965 kPa.

This series of Standards includes the following parts:

AS/NZS

- 4645 Gas distribution networks
- 4645.1 Part 1: Network management
- 4645.2 Part 2: Steel pipe systems (this Standard)
- 4645.3 Part 3: Plastics pipe systems

The Standard is not a design handbook, nor a manual on distribution practices. It does not remove the need for qualified and experienced engineering design, installation and operation or for competent engineering judgment, and does require interpretation and implementation by competent engineers.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard. Alternative means of conformance may be acceptable provided the required safety outcomes can be demonstrated with AS/NZS 4645.1.

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

		Page
FOREW	VORD	5
SECTIO	ON 1 SCOPE AND GENERAL	
1.1	SCOPE	6
1.2	NORMATIVE REFERENCES	6
1.3	APPLICATION	11
1.4	DEFINITIONS	11
SECTIO	ON 2 MATERIALS AND COMPONENTS	
2.1	NEW MATERIALS AND NEW COMPONENTS	
2.2	MATERIALS AND COMPONENTS IDENTIFICATION	13
2.3	PIPE THREADS, THREADED PIPE FITTINGS, FLANGED PIPE JOIN	
	WELDED PIPE JOINTS	
2.4	VALVES, FITTINGS AND ACCESSORIES	
2.5	COATING FOR BURIED METAL MAINS OR SERVICES	16
SECTIO	ON 3 DESIGN	
3.1	GENERAL	
3.2	MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP)	
3.3	HOOP STRESS	
3.4	MAINS AND SERVICES	
3.5	STEEL CASING	
3.6	WARNING MARKERS FOR MAINS AND SERVICES	
3.7	OFFSET DISTANCES	-
3.8	DEPTH OF COVER	
3.9	SEPARATION FROM OTHER UTILITY ASSETS	
	CORROSION MITIGATION	
	ELECTRICAL HAZARDS	
	EXPANSION AND FLEXIBILITY	
	BENDS, ELBOWS AND MITRES	
3.14	COMPONENTS AND FABRICATED ASSEMBLIES	24
	ON 4 WELDING	
4.1	GENERAL	
4.2	SAFETY	
4.3	WELDING CONSUMABLES AND GASES	
4.4	WELDING REQUIREMENTS	
4.5	TYPES OF WELDING	
4.6	QUALIFICATION OF WELDING PROCEDURE	
4.7	QUALIFICATION TESTING OF WELDED JOINTS	
4.8	WELDER QUALIFICATION	43
4.9	INSPECTION AND TESTING OF PRODUCTION WELDS	
4.10		
	RECTIFICATION OF WELDSIN-SERVICE WELDING	
41/	LINESTED VICE D. VV CLIJIJANI	40



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

Product Page

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