Australian Standard® GAS INSTALLATIONS



Gas Installations

This Australian Standard was prepared by Committee AG-006, Gas Installation. It was approved on behalf of the Council of Standards Australia on 27 October 2004. This Standard was published on 4 November 2004.

The following are represented on Committee AG-006:

AGA Certification Services
Australian Liquefied Petroleum Gas Association
Energy Networks Association
Gas Appliance Manufacturers Association of Australia
Gas Technical Regulators Committee

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 Standards may also be withdrawn.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 $^{\text{TM}}$ 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.

Australian Standard™

Gas installations

Originated as AS 5601 (AG 601—2000). Second edition 2002. Third edition designated AS 5601—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 6292 1

AS 5601—2004 2

PREFACE

This Standard was prepared by the Standards Australia Committee AG-006, Gas Installation to supersede AS 5601—2002 (AG 601—2002). It is a revision of the 2002 edition and incorporates both technical and editorial amendments.

The intention of this Standard is to provide essential requirements and deemed to comply solutions and to promote uniform standards of gas installation.

This Standard is not to be regarded as a design specification or an instruction manual for untrained persons.

This Standard has no legal standing in its own right, but may acquire legal standing in either of the following circumstances:

- (a) Where adopted by a Government or other authority having jurisdiction over relevant installations.
- (b) Where adopted as part of an installation specification.

Regulatory bodies (technical regulators) may adopt this Standard. The Standard accommodates some variation of requirements among the regulatory jurisdictions. Such variations are identified in the page margin adjacent to the particular Clause. Appendix L sets out the detail of these variations or additions under the appropriate Clause number.

Where the Standard has acquired legal standing, its requirements are mandatory (variations/exceptions being indicated as described above). Matters of an advisory or explanatory nature are indicated in the following manners—

- (i) the word NOTE(S) followed by a statement(s);
- (ii) by the inclusion of them in an informative appendix.

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.

Terms or words that are indicated by italics in the body of the text are defined terms or words. This does not apply to any italics used in the Preface or headings or figures. Section 1 contains the definitions of such terms or words as they apply to the Standard.

In this edition a number of technical changes have been made and include, amongst others, the following—

- (A) the materials approved for use with the inclusion of composite pipe and fittings;
- (B) clearances for flue terminals;
- (C) a number of installation requirements for specific appliances; and
- (D) the inclusion of supply pressure in the pipe sizing tables.

Clause renumbering has been carried out as necessary.

CONTENTS

		Page
SECTIO	ON 1 SCOPE, APPLICATION AND DEFINITIONS	
1.1	SCOPE	6
1.2	APPLICATION OF THIS STANDARD	
1.3	REFERENCED DOCUMENTS	
1.4	DEFINITIONS	
SECTIO	ON 2 GENERAL WORK AND SAFETY REQUIREMENTS	
2.1	ALTERATIONS, REPAIRS AND EXTENSIONS TO	
	CONSUMER PIPING	
2.2	TURNING ON A GAS SUPPLY	20
2.3	GAS SUPPLY AND TYPE TO BE VERIFIED BEFORE	
	COMMENCING AN INSTALLATION	
2.4	PURGING	
2.5	SEALING OF OPEN PIPE ENDS	
2.6	TESTING OF PIPING	
2.7	SUBSTANCES FOR TESTING AND LOCATING GAS LEAKS	
2.8	HOT-TAPPING OF BRANCH FITTING TO CONSUMER PIPING	21
2.9	INCREASING THE OPERATING PRESSURE OF EXISTING	
2.10	CONSUMER PIPING	21
2.10	DEALING WITH A DANGEROUS GAS INSTALLATION	
0.11	OR APPLIANCE	
2.11	SAFE WORKING PRACTICES	22
SECTIO	ON 3 MATERIALS AND COMPONENTS	
3.1	MATERIALS AND COMPONENTS—GENERAL	24
3.2	MATERIAL	
3.3	COMPONENTS	
GE GELG	ON A DISTALL DIS CONSUMED DIDDIS	
	ON 4 INSTALLING CONSUMER PIPING	20
	CONSUMER PIPING—GENERAL	
	DESIGN OF CONSUMER PIPING	
4.3		
4.4 4.5	CORROSION CONTROLCONSUMER PIPING GAS PRESSURE REGULATORS	
4.5 4.6	PRESSURE PROTECTION	
4.0 4.7	VENTING	
4.8	USE OF HOSE ASSEMBLIES	
4.8 4.9		
	LOCATION OF CONSUMER PIPING	
	INSTALLING NON-METALLIC PIPING	
	CONSUMER PIPING IN A HIGH-RISE BUILDING	
	SUB-METERS	
4.13 4.11	GAS PRESSURE-RAISING DEVICES	60 61
	VENTILATION OF GAS EQUIPMENT—LIGHTER THAN AIR GASE	
	VENTILATION OF GAS EQUIPMENT—HEAVIER THAN AIR GASI	
1.10	- , Li, i Li i i i i i i i i i i i i i i	_55

		Page
SECTIO	ON 5 INSTALLING APPLIANCES	
5.1	REQUIREMENTS FOR APPLIANCES	66
5.2	GENERAL INSTALLATION REQUIREMENTS	00
5.2	APPLIANCE LOCATION	
5.3 5.4	AIR SUPPLY TO APPLIANCES	
5. 4 5.5	INTERLOCK FOR MECHANICAL AIR SUPPLY TO APPLIANCE	
5.6	APPLIANCE CONNECTION	
5.7	APPLIANCE GAS PRESSURE REGULATOR	
5.7	AIR HEATING APPLIANCE IN A CONFINED SPACE	
5.8	COMBUSTION AND DILUTION AIR FOR AN APPLIANCE WITH	/ 0
3.9	AN OPEN FLUE	70
5 10	INTERLOCK OF AUTOMATIC FIRE DAMPER AND GAS SUPPLY	
	GAS SHUT OFF WHEN AUTOMATIC FIRE EQUIPMENT OPERATES	
	SPECIFIC APPLIANCES—INSTALLATION	
	FLUEING	
3.13	FLUEING	93
SECTIO	ON 6 LP GAS SYSTEMS	
6.1	LOCATION AND INSTALLATION OF LP GAS STORAGE	
0.1	TANKS AND CYLINDERS	105
6.2	LP GAS SYSTEMS FOR CARAVANS AND CATERING VEHICLES	
	LP GAS SYSTEMS FOR MARINE CRAFT	
0.5	DI GIO DI DILINO I GRANDINE CICII I	115
SECTIO	ON 7 COMPRESSED NATURAL GAS (CNG) FOR APPLIANCES IN	
	MARINE CRAFT	
7.1	CYLINDERS	122
7.2	REGULATING SYSTEM	
7.3	CYLINDER LOCATION	123
7.4	CONSUMER PIPING	
7.5	AIR SUPPLY TO APPLIANCES	
7.6	APPLIANCES	
	CONSUMER INSTRUCTIONS	
SECTIO	ON 8 INSTALLATIONS FOR THE COMPRESSING OF NATURAL GAS	\mathbf{S}
	FOR THE FILLING OF CYLINDERS	
8.1	REQUIREMENTS FOR THE INSTALLATION OF A VEHICLE	
	REFUELLING APPLIANCE (VRA)	128
8.2	REQUIREMENTS FOR THE INSTALLATION OF A VEHICLE	
	REFUELLING APPLIANCE (VRA) INDOORS	129
8.3	STORAGE	
8.4	REQUIREMENTS FOR THE INSTALLATION OF COMPRESSING	
0.1	EQUIPMENT OTHER THAN A VEHICLE REFUELLING APPLIANCE	E
	(VRA)	129
SECTIO	ON 9 APPLIANCE COMMISSIONING	
9.1	APPLIANCE TO BE COMMISSIONED	130
9.2	COMMISSIONING OF APPLIANCE	130
9.3	COMMISSIONING REQUIREMENTS	130

		Page
APPEN	DICES	
A	CONSUMER BILLING METERS	.131
В	LIST OF REFERENCED DOCUMENTS	.133
C	FIRE RESISTANT MATERIAL	.137
D	PURGING	.139
E	PRESSURE TESTING A GAS INSTALLATION	
F	SIZING CONSUMER PIPING	.147
G	DETERMINATION OF MAXIMUM BREATHER VENT ORIFICE SIZE	
	FOR DEVICES NOT VENTED TO OUTSIDE ATMOSPHERE	.195
Н	FLUE DESIGN	.203
J	LP GAS CYLINDERS	.229
K	COMBUSTIBLE GAS DETECTION SYSTEMS FOR MARINE CRAFT.	.236
L	SPECIAL LOCAL REQUIREMENTS	.238
INDEX		240

AS 5601—2004 6

STANDARDS AUSTRALIA

Australian Standard Gas installations

SECTION 1 SCOPE, APPLICATION AND DEFINITIONS

1.1 SCOPE

This Standard sets out requirements for *consumer piping*, flueing, ventilation and *appliance* installations which are associated with the use or intended use of fuel gases such as *town gas*, *natural gas*, *liquefied petroleum gas* in the vapour phase, *tempered liquefied petroleum gas*, *simulated natural gas* or any similar substance.

The requirements cover piping systems from the outlet of—

- (a) the consumer billing meter installation; or
- (b) the first regulator on a fixed gas installation where an LP Gas container is installed on the same site; or
- (c) the first *regulator* on site (if no *meter* is installed) where *LP Gas* is reticulated from storage off the site;

to the inlet of the appliance.

This Standard does not apply to portable or *mobile appliances* connected directly, or by *hose assembly*, to an *LP Gas cylinder*.

Requirements for installations for *caravans* and marine craft including location of storage *cylinders*, piping systems and *appliances* are also provided in this Standard.

NOTES:

- 1 The location of *consumer billing meters* is determined by the *network operator*; however, some guidelines for the locating of these *meters* are detailed in Appendix A.
- 2 The terms pipe, piping, tube and tubing are used throughout this Standard. They are to be considered to have the same meaning.

Unless specifically covered in this Standard, where *consumer piping* is to operate at a *pressure* exceeding 200 kPa, consult with the *technical regulator*.

Appliances provided for in this Standard include those certified by a certifying body and those otherwise acceptable to the technical regulator.

The *appliance* installation requirements cover location, ventilation, combustion air, flueing and commissioning of the *appliance*.

1.2 APPLICATION OF THIS STANDARD

The requirements of this Standard are to be used in conjunction with, but do not take precedence over, any statutory regulations which may apply in any area. The *technical regulator* may determine the extent of application of this Standard.

© Standards Australia www.standards.com.au





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

- Looking for additional Standards? Visit SAI Global Infostore
- Subscribe to our Free Newsletters about Australian Standards® in Legislation; ISO, IEC, BSI and more
- Do you need to <u>Manage Standards Collections Online?</u>
- Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
- Do you want to know when a Standard has changed?
- Want to become an SAI Global Standards Sales Affiliate?

Learn about other SAI Global Services:

- LOGICOM Military Parts and Supplier Database
- Metals Infobase Database of Metal Grades, Standards and Manufacturers
- Materials Infobase Database of Materials, Standards and Suppliers
- Database of European Law, CELEX and Court Decisions