

Australian Standard<sup>®</sup>

**Gas appliances**

**Part 0: General requirements**

**STANDARDS**  
Australia



This Australian Standard® was prepared by Committee AG-001, Gas Appliances. It was approved on behalf of the Council of Standards Australia on 14 August 2013. This Standard was published on 17 September 2013.

---

The following are represented on Committee AG-001:

- Association of Accredited Certification Bodies
  - Australian Building Codes Board
  - Consumer Electronics Suppliers Association
  - Consumers Federation of Australia
  - Energy Networks Association
  - Gas Appliance Manufacturers Association of Australia
  - Gas Energy Australia
  - Gas Technical Regulators Committee
  - The Australian Gas Association
- 

This Standard was issued in draft form for comment as Draft AS 5263.0.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

---

#### **Keeping Standards up-to-date**

Australian Standards® are living documents that 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Standards may also be withdrawn.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 that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting [www.standards.org.au](http://www.standards.org.au)

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.org.au](mailto:mail@standards.org.au), or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

Australian Standard<sup>®</sup>

**Gas appliances**

**Part 0: General requirements**

First published as AS 5263.0—2013.

**COPYRIGHT**

© Standards Australia Limited

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.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 569 5

## PREFACE

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee AG-001, Gas Appliances. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard (Part 0), together with other Standards in the proposed AS 5263 series specific to appliance types (Part 1.X), constitute a means of compliance with AS 3645, *Essential requirements for gas equipment*, for each appliance type. The AS 5263 (Part 1.X) series, when complete, is intended to supersede the following gas appliance Standards:

- AS 2658—2008 *LP Gas—Portable and mobile appliances*
- AS 4551—2008 *Domestic gas cooking appliances*
- AS 4552—2005 *Gas fired water heaters for hot water supply and/or central heating*
- AS 4553—2008 *Gas space heating appliances*
- AS 4554—2005 *Gas laundry dryers*
- AS 4555/  
AG 105—2002 *Domestic gas refrigerators*
- AS 4556—2011 *Indirect gas-fired ducted air heaters*
- AS 4557—2004 *Domestic outdoor gas barbecues*
- AS 4558—2011 *Decorative gas log and other fuel effect appliances*
- AS 4560—2004 *Gas pool heaters*
- AS 4563—2004 *Commercial catering gas equipment*
- AS 4565—2004 *Radiant heaters for outdoor and non-residential indoor use*
- AS 4643—2007 *Overhead radiant tube gas heaters*
- AS 5262—2011 *LP Gas mobile industrial direct fired air heaters*

The objective of this Part 0 is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with uniform minimum requirements for the safety, performance and use of gas appliances.

This Standard should not be regarded as a design specification or as an instruction manual.

Consideration has been given to—

- (a) continuity of satisfactory operation;
- (b) the prevention of fire hazards, and explosions;
- (c) the prevention of injury to persons or property;
- (d) gas rules and regulations now in force; and
- (e) relevant International Standards.

AS/NZS 5601, *Gas installations* series provides essential requirements and means of compliance for gas installations. Any reference to AS/NZS 5601 in this Standard should be considered as reference to the appropriate part of AS/NZS 5601 series of Standards (AS/NZS 5601.1 and AS/NZS 5601.2).

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.

Statements expressed in mandatory terms in notes and footnotes to tables and figures are deemed to be requirements of this Standard.

Currently in preview, click buy full vers.

## CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	6
1.2 REFERENCED DOCUMENTS.....	6
1.3 DEFINITIONS.....	7
1.4 TEST METHODS.....	20
SECTION 2 DESIGN AND CONSTRUCTION	
2.1 SCOPE.....	22
2.2 GENERAL DESIGN REQUIREMENTS.....	23
2.3 MATERIALS.....	24
2.4 DESIGN FOR ASSEMBLY AND INSTALLATION.....	25
2.5 DESIGN FOR MAINTENANCE.....	25
2.6 DESIGN FOR OPERATION.....	27
2.7 CONTROLS AND SAFETY DEVICES.....	28
2.8 GAS TRAIN.....	29
2.9 COMBUSTION AIR AND FLUE SYSTEMS.....	31
2.10 FAN ASSISTED COMBUSTION SYSTEMS.....	33
2.11 BURNERS AND IGNITION SYSTEMS.....	33
2.12 COMPONENTS.....	35
2.13 CYLINDERS AND CYLINDER COMPARTMENTS.....	35
2.14 MARKINGS.....	36
2.15 INSTRUCTIONS.....	39
SECTION 3 PRELIMINARY TESTS—LIMITE GASES	
3.1 GENERAL.....	43
3.2 PREPARATION FOR TESTING.....	45
3.3 GAS LEAKAGE.....	45
3.4 GAS CONSUMPTION.....	45
3.5 GAS PRESSURE REGULATORS.....	46
3.6 IGNITION AND SAFETY SHUT OFF SYSTEMS.....	46
3.7 IGNITION OF DRAPED FABRIC.....	50
SECTION 4 LIMIT GAS TESTS	
4.1 GENERAL.....	51
4.2 CO/CO <sub>2</sub> RATIO LIMITS FOR ANY INDEPENDENT SURFACE COMBUSTION BURNER—UNDERLOAD.....	51
4.3 CO/CO <sub>2</sub> RATIO LIMITS FOR ANY INDEPENDENT BURNER—OVERLOAD.....	51
4.4 CO/CO <sub>2</sub> RATIO LIMITS FOR PERMANENT PILOTS—OVERLOAD.....	52
4.5 FLAME CHARACTERISTICS AT MAXIMUM AND MINIMUM LIMITING CONDITIONS.....	52
4.6 BURNER IGNITION AT MAXIMUM AND MINIMUM LIMITING CONDITIONS.....	53
4.7 DELAYED IGNITION AT MAXIMUM AND MINIMUM LIMITING CONDITIONS.....	54
4.8 REIGNITION AT TURNDOWN UNDER DRAUGHT CONDITIONS.....	54
4.9 PILOT IGNITION AND STABILITY AT MAXIMUM AND MINIMUM LIMITING CONDITIONS.....	55
4.10 BURNER STABILITY WHEN CHANGING SETTING.....	55
4.11 UNBURNT GAS RELEASE FROM BURNER SYSTEM.....	56

	<i>Page</i>
4.12	BLOCKED FLUEWAY TERMINAL..... 56
4.13	CASE PRESSURE TEST ..... 57
4.14	NOISE OF EXTINCTION..... 57
4.15	EFFECT OF OPENING AND CLOSING DOORS AT TURNDOWN CONDITION 58
4.16	SOOTING—LUMINOUS EFFECT APPLIANCES..... 58
4.17	BURNER INTERFERENCE AT IGNITION OR DURING COMBUSTION..... 59
<b>SECTION 5 PERFORMANCE SPECIFICATIONS</b>	
5.1	COMBUSTION AIR SUPPLY ..... 60
5.2	FLUE OPERATION ..... 60
5.3	CONDENSATE..... 61
5.4	NOISE OF OPERATION ..... 61
5.5	TEMPERATURE HAZARDS ..... 61
5.6	HEAT RESISTANCE OF APPLIANCE..... 64
5.7	DURABILITY ..... 66
5.8	ELECTRICAL SUPPLY VARIATION OR FAILURE ..... 66
5.9	APPLIANCE OPERATION UNDER LINTING CONDITIONS ..... 67
5.10	RAIN TEST FOR OUTDOOR AND ROOM SEALED APPLIANCES ..... 67
5.11	OPERATION UNDER WINDY CONDITIONS ..... 67
5.12	STRENGTH AND STABILITY ..... 68
5.13	THERMAL EFFICIENCY..... 69
5.14	VITIATION AND EMISSIONS ..... 70
<b>APPENDICES</b>	
A	FIGURES A1 TO A17..... 72
B	METER VOLUME CORRECTION FACTORS..... 87
C	DIAGRAMMATIC REPRESENTATION OF AN OPERATING SYSTEM FOR AUTOMATIC BURNERS ..... 89
D	FLUE GAS SAMPLING AND TEMPERATURE MEASUREMENT ..... 90
E	FLUE SAMPLING METHOD FOR SMALL FLUES ..... 96
F	PRESSURE AND GAS VOLUME TEST EQUIPMENT ..... 99
G	DIAGRAMMATICAL REPRESENTATIONS OF OUTDOOR AREAS ..... 100
H	GUIDELINES ON PROVIDING WRITTEN APPLIANCE SPECIFICATIONS .... 103
ZA	PRELIMINARY TEST METHODS ..... 106
ZB	LIMIT CONDITION TEST METHODS ..... 123
ZC	PERFORMANCE TEST METHODS ..... 146

## STANDARDS AUSTRALIA

**Australian Standard**  
**Gas appliances**

**Part 0: General requirements**

SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies general requirements and test methods for appliances and equipment which use natural gas (as described by AS 4564), town gas, liquefied petroleum gas (LP Gas, as described by AS 4670) and tempered liquefied petroleum gas (TLP) as a fuel, and which are intended for domestic, commercial or light industrial use, to an energy input limit of 1000 MJ/h or any lower limit specified in the appliance-specific Part of the AS 5263 series of Standards.

Appliance-specific Parts of the AS 5263 series contain clauses that add to, delete, or modify the corresponding clauses in this Standard to provide the relevant requirements for each type of appliance.

## NOTES:

- 1 This Standard may be applied, as far as is reasonable, to appliances not mentioned in any appliance-specific AS 5263 series Standards and to gas appliances designed on new principles or technologies.
- 2 Other statutory or regulatory requirements may be applicable to the product(s) that fall within the scope of this Standard. It is the manufacturer's, importer's or distributor's responsibility (as appropriate) to ensure that products comply with such requirements.

**1.2 REFERENCED DOCUMENTS**

The following documents are referred to in this Standard:

## AS

1375	Industrial fuel-fired appliances (known as the SAA Industrial Fuel-fired Appliance Code)
1722	Pipe threads of Whitworth form
1722.2	Part 2: Fastening pipe threads
2700	Colour standards for general purposes
3645	Essential requirements for gas equipment
3678	Water supply—Metallic fittings and end connectors
4554	Specification for general purpose natural gas
4567	Twin wall metal flues—Gas appliances
4617	Manual shut off gas valves
4620	Thermoelectric flame safeguards
4625	Electronic flame safeguards and flame detectors
4627	Quick-connect devices for gas
4629	Automatic shut off valves and vent valves