AS 4551—2008 (Incorporating Amendment Nos 1 and 2)

# Australian Standard®

# Domestic gas cooking appliances



This Australian Standard® was prepared by Committee AG-001, Gas Appliances. It was approved on behalf of the Council of Standards Australia on 12 June 2008. This Standard was published on 30 June 2008.

The following are represented on Committee AG-001:

- Appliance and Component Testing
- Australian Gas Association
- Australian Greenhouse Office, Department of the Environment and Water Resources
- Consumers' Federation of Australia
- Energy Networks Association
- Gas Appliance Manufacturers Association of Australia
- Gas Association of New Zealand
- Gas Technical Regulators Committee
- Gas Utilisation Institute
- LPG Australia
- Master Plumbers, Gasfitters and Drainlayers New Zealand
- Ministry of Economic Development (New Zealand)
- New Zealand Employers and Manufacturers Association

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This Standard was prepared by the Standards Australia Committee AG-001, Gas Appliances to supersede AS 4551—2000 (AG 101—2000), Domestic gas cooking appliances.

This Standard incorporates Amendment No. 1 (December 2009) and Amendment No. 2 (June 2012). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

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

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

In its preparation, consideration has been given to—

- (a) the 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 5601 provides essential requirements and basic standards for gas installations.

The principal differences between this edition and AS 4551—2000 (AG 101—2000), are marked by a line in the margin. These differences may be a new or revised definition, Clause, Figure or Method of Test (M.O.T.).

The following have been deleted:

- (i) Definitions: AGA, ALPGA, Approved, Authority, Bypass screw, Direct fired oven, Flame blow off, Flame lift, Grill fret, Grill grid (smokeless), Indirect fired oven, Interrupter screw, Piezo electric ignition, Rotisserie, Semi-automatic ignition, Simmer gas consumption and Terminal.
- (ii) Clauses: 2.1.14, 2.3.2, 2.5.1, 2.7.4, 2.7.5, 2.7.6 (both Clauses are now incorporated into 2.10.8.3 (a) and (b)), 2.8.10, 2.11.2.7 (incorporated in Clause 2.11.3), 3.7.3 (now Clause 4.8), 5.7.4 and 5.7.6 (incorporated in Clause 2.2.5).
- (iii) Figures: 1, 2, 5 and 8 (replaced by dew plate).

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 to tables and figures are deemed to be requirements of this Standard.

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## STANDARDS AUSTRALIA

# Australian Standard Domestic gas cooking appliances

## SECTION 1 SCOPE AND GENERAL

### 1.1 SCOPE

These requirements apply to domestic gas cooking appliances, including stovettes, hotplates and separate ovens intended for use with natural gas, town gas, liquefied petroleum gas and tempered liquefied petroleum gas.

#### **1.2 REFERENCED DOCUMENTS**

The following documents are referred to in this Standard.

AS	
1074	Steel tubes and tubulars for ordinary service
1375	Industrial fuel-fired appliances
1432	Copper tubes for plumbing, gasfitting and drainage applications
1450	Steel tubes for mechanical purposes
1722 1722.1	Pipe threads of Whitworth form Part 1: Sealing pipe threads
1751	Copper brazed steel tubes
1769	Welded stainless steel tubes for plumbing applications
1832	Malleable cast iron
1881:1986	Zinc Alloys—Casting ingots and castings—Quality requirements
2129	Flanges for pipes, valves and fittings
3688	Water supply—Metallic fittings and end connectors
4567	Twin wall metal flues—Gas appliances
4617	Manual shut off gas valves
4620	Thermoelectric flame safeguards
4625	Electronic flame safeguards and flame detectors
4629	Automatic shut off valves and vent valves
4646	Gas appliance standards—Definitions and calculations
5601	Gas installations
D26	Tube fittings with Dryseal American standard taper pipe and unified threads for automotive and industrial use
AS/NZS 1167 1167.1:2005	Welding and brazing-filler metals Part 1: Filler metal for brazing and braze welding

AS/NZS	
1869	Hose and hose assemblies for liquefied petroleum gases
3000	Electrical installations
3100	Approval and test specification—General requirements for electrical equipment
3350 3350.1	Safety of household and similar electrical appliances Part 1: General requirements (IEC 60335-1, MOD)
3500	Plumbing and drainage
3500.0	Part 0: Glossary of terms
ISO	
6976	Natural gas—Calculation of calorific values, density, relative density and Wobbe index from composition
BS	
3193	Specification for thermally toughened glass panels for use in domestic appliances
EN	
298	Automatic Gas Burner Control Systems for Gas Burners and Gas Burning

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#### OTHER DOCUMENTS

DEAN, John A, Lange's Handbook of Chemistry, 15th Ed., McGraw-Hill Professional, 1998.

#### **1.3 DEFINITIONS**

For the purposes of this Standard, the following definitions apply:

Appliances With or Without Fans

#### 1.3.1 Appliance flueway

A port or passage conveying flue gases within the appliance.

#### 1.3.2 Appliance flueway terminal

A protective device fitted to the exit of an appliance flueway of a flueless appliance.

#### 1.3.3 Appliance regulator

A device fitted to an appliance to control the gas pressure or gas volume delivered to that appliance.

#### 1.3.4 Authority having jurisdiction

The authority having statutory (legal) control.

#### **1.3.5** Automatic ignition

The lighting of gas at a burner without a manual operation whenever gas flows from the burner.

#### **1.3.6** Automatic operation

The use of a sequence of operations which, once initiated, does not require any intermediate manual operation.

#### 1.3.7 Automatic shut off valve

An automatic valve used to shut off gas supply to an appliance.

#### 1.3.8 Available gas (line gas)

Readily available gas with similar characteristics to the reference test gas.

#### 1.3.9 Bain marie

An appliance that keeps cooked food hot, using water or air.

**1.3.9.1** Wet bain marie

A wet bain marie may be either:

**1.3.9.1.1** *Open well type* 

Food containers are placed on a perforated metal plate. The water level in the bain marie just covers the metal plate and the appliance is operated entirely without covers.

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#### **1.3.9.1.2** *Fitted container type*

Fitted food containers with lids are recessed in the top surface of the appliance. The containers are heated by water or air that is saturated with water vapour.

**1.3.9.2** Dry bain marie

A dry bain marie may be either:

**1.3.9.2.1** *Hotpress type* 

The food containers are placed in a heated cupboard or on a heated top.

**1.3.9.2.2** *Fitted container type* 

Fitted food containers with lids are recessed in the top surface of the appliance. The containers are heated by dry air.

#### 1.3.10 Burner port

The opening in a burner through which gas or an air-gas mixture issues to be ignited or burned.

#### 1.3.11 Bypass

An integral part of a gas control that enables a preset volume of gas to bypass the control.

#### 1.3.12 Calibration

The determination of the relationship between the measured or indicated value of a parameter and its true value.

#### 1.3.13 Caravan

A structure that is or was designed or adapted to be moved from one place to another, whether towed or transported, which is intended for human habitation or use as a workplace, and includes a self-propelled recreational vehicle or mobile home. Included is any associated annex and the like, whether permanently or temporarily attached to, or adjoining, the main portion of the structure.

NOTE: A large structure assembled in a factory and transported to a permanent location is not considered a caravan, e.g., portable school classrooms or transportable homes.

#### 1.3.14 Certified/Certification

Assessed by a Certifying Body and having a certificate number to demonstrate compliance with a Standard.

#### 1.3.15 Certifying Body

A body acceptable to the Technical Regulator that provides assurance of compliance of appliances and components with nominated Standards or other accepted safety criteria.

The ratio by volume of carbon monoxide to that of carbon dioxide in the combustion products.

#### **1.3.17** Combustible materials

Materials made of or surfaced with wood, compressed paper, plant fibres or other materials that will ignite and burn.

#### **1.3.18** Combustion products

Constituents resulting from the combustion of a fuel with oxygen, including the inerts associated with the fuel and the oxygen but excluding any other diluent or contaminant.

#### **1.3.19** Compression fitting

Compression fittings and components as defined in AS/NZS 3500.0.

#### **1.3.19.1** Type 1 (non-manipulative) compression fitting

A fitting for a compression joint that does not require any working of the tube other than cutting square. The joint is made tight by means of a loose compression ring that grips the outside wall of the tube when the coupling nut is tightened.

#### **1.3.19.2** *Type 2 (manipulative) compression fitting*

A fitting in which the joint is made by flaring, croxing, capping or beading the end of the tube which is then compressed by the coupling nut against the shaped end of the corresponding section in the fitting.

#### 1.3.20 Continuous cleaning surface

An oven interior finish which, in the course of ordinary use, does not accumulate stains or deposits.

#### 1.3.21 Determined gas consumption

Gas consumption rate measured in megajoules per hour (MJ/h), using reference gas at specified test pressures and with ambient conditions corrected to standard temperature and pressure.

### **1.3.22** Direct ignition device

A device which provides ignition of a burner without the use of another flame.

#### 1.3.23 Draught diverter

A device, without moving parts, fitted in the flue of an appliance for isolating the combustion system from the effects of pressure changes in the secondary flue.

#### **1.3.24** Electronic flame safeguard

A flame safeguard utilising electronic components to perform its function.

#### 1.3.25 Enclosed burner

A burner that is not readily visible to the operator during normal operation of the appliance.

#### 1.3.26 Excess air

Air in excess of that required for complete combustion which is mixed unchanged with the combustion products in the combustion chamber.

#### **1.3.27** Flame abnormality

A flame condition which results in appreciable yellow tipping and carbon deposition (except in the case of appliances specifically designed for a luminous effect), lifting, floating, lighting back or objectionable odour.