



Gas appliances — Servicing of Type A appliances



AS 4575:2019

This Australian Standard® was prepared by AG-006, Gas Installation. It was approved on behalf of the Council of Standards Australia on 23 July 2019.

This Standard was published on 9 August 2019.

The following are represented on Committee AG-006:

- Access Canberra
- Association of Accredited Certification Bodies
- Caravan Industry Association of Australia
- Department of Natural Resources, Mines and Energy, QLD
- Energy Networks Australia
- Energy Safe Victoria
- Gas Appliance Manufacturers Association of Australia
- Gas Energy Australia
- Gas Technical Regulators Committee
- Master Plumbers and Mechanical Services Association of Australia, Vic.
- Australian Gas Association
- Victorian Building Authority

Additional Interests

- Independent Hydraulic Expert

This Standard was issued in draft form for comment as DR AS 4575:2019.

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ISBN 978 1 76072 542 6



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Originated as AS 4575—2005.
Second edition 2019.

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Preface

This Standard was prepared by the Standards Australia Committee AG-006, Gas Installations, to supersede AS 4575—2005, *Gas appliances—Quality of servicing*.

The objective of this Standard is to specify essential requirements and basic standards for the delivery of Type A gas appliance servicing, repair, testing and conversion from one gas type to another.

Guidance on quality management systems of Type A gas appliance servicing, repair, testing and conversion from one gas type to another is provided in [Appendix G](#).

The AS/NZS 5601 series specifies requirements for gas installations applying at the time of installation.

This Standard is not to be regarded as 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.

The servicing, repair and conversion of Type A gas appliances described in this Standard may require authorization under legislation.

Users of this Standard should be aware of and adhere to the safe working practices to be employed when working on gas installations or appliances, as covered by any relevant workplace health and safety legislation. Users of this Standard should take precautions to mitigate any hazards present in the gas installation and vicinity of the appliance being serviced.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

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NOTES

Australian Standard®

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Section 1 Scope and definitions

1.1 Scope

This Standard specifies the minimum requirements for Type A appliance servicing, repair, conversion from one gas type to another, testing for safe and correct operation, and related aspects of gas installations; and the associated quality management systems.

Where the term “installation” is used it is deemed to include the pipework, appliances, components, flues, air ducts, ventilation and other ancillary items.

1.2 Application

The user of this Standard is expected to be familiar with the properties and characteristics of fuel gases and the principles of combustion, ventilation, flueing and electricity applicable to the safe and correct installation and operation of Type A appliances.

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS/NZS 3760, *In-service safety inspection and testing of electrical equipment*

AS/NZS 5601.1, *Gas installations, Part 1: General installations*

AS/NZS 5601.2, *Gas installations, Part 2: LP gas installations in caravans and boats for non-propulsive purposes*

1.4 Definitions

For the purpose of this document, the definitions given in AS/NZS 5601 series and those below apply.

1.4.1

chimney liner

continuous duct made of a suitable material, (other than bricks and mortar), that is installed inside a chimney and designed to carry flue products from the appliance flue connection to the flue terminal

1.4.2

competent person

person or body who through training, qualification or practical experience or a combination of these and understanding of the appliance and processes is able to verify they are in accordance with this Standard

Note 1 to entry: Jurisdictions may have specific licensing, registration or authorization requirements for gas appliance service work.

1.4.3

conversion

adjusting or altering a Type A appliance to operate on a different gas from —

- (a) the gas that the appliance was originally manufactured to use; or
- (b) the gas that the appliance had previously been converted to use

1.4.4**flame abnormality**

flame condition that results in spitting, sputtering, lifting or floating flames, lighting back, extinction, yellow tipping, carbon deposition, objectionable odour and undue noise

Note 1 to entry: If the length of the yellow tipping is less than 20 % of the total length of the flame on visual inspection, it is not considered to be “appreciable” yellow tipping.

Note 2 to entry: In appliances designed specifically for a luminous effect, yellow tipping and limited lifting or floating flames or limited carbon deposition within the appliance are not considered to be abnormal.

1.4.5**flued appliance**

indoor appliance designed to be connected to a flue system

1.4.6**nominal test point pressure**

gas pressure specified by the manufacturer, at which the appliance is designed to operate, and measured at a test point

1.4.7**open-flued appliance**

indoor appliance designed to be connected to a flue system, its combustion air being drawn from the room or space in which it is installed

1.4.8**quality management system**

documented system to monitor, control and record activities relating to servicing, repair, testing and conversion of Type A appliances

1.4.9**repair**

activities conducted to revert a damaged, faulty or worn Type A appliance back to correct and safe working order

1.4.10**service provider**

organization or entity that delivers the servicing, repair or conversion of Type A appliances

1.4.11**servicing**

activities relating to the inspection, cleaning, maintenance and testing of Type A appliances for the purpose of keeping them in good and safe working order

1.4.12**Type A appliance**

assembly, other than a vehicle refuelling appliance, part of which uses gas to produce flame, heat, light, power or special atmosphere and for which a certification scheme exists

Section 2 Technical servicing and repair requirements

2.1 Competency

Servicing and repair of an appliance in accordance with this Section shall only be undertaken by a competent person.

NOTE 1 Jurisdictions may have specific licensing, registration or authorization requirements for gas appliance service work.

NOTE 2 A competent person should undergo training related to new appliances and technologies. Such training is offered by manufacturers, registered training organizations and industry organizations.

2.2 Prepare to work

2.2.1 General

Steps taken and information gained in the performance of the following clauses should be recorded.

2.2.2 Site familiarization

Knowledge of the gas system within the premises shall be established, before servicing or repair work commences. This includes, but is not limited to, the location of appliances, gas types, gas pressures, and supply infrastructure (including location of isolation for gas, electricity and water, as applicable).

2.2.3 OHS risk assessment

The work to be undertaken shall be clearly identified.

Hazards and risks to safety of persons and property shall be assessed prior to commencing work. This includes consideration of appliance location and accessibility.

As far as reasonably practicable, measures to eliminate or control identified risks shall be implemented. Refer to the notes below.

NOTE 1 Hazard and risk assessments should cover adverse conditions resulting from the following:

- (a) Normal operating conditions.
- (b) Abnormal operating conditions, including shut-down and start-up conditions, inclement weather and evidence of misuse.
- (c) Incidents and potential emergency situations.
- (d) Past activities, current activities and planned activities.
- (e) Presence of asbestos.

NOTE 2 Refer to local OHS authority for the replacement of an appliance connected to an existing asbestos flue, or the maintenance or repair of an existing asbestos flue.

NOTE 3 Safe work on appliances may be achieved by way of a risk assessment to identify and devise the necessary control measures which may then be implemented via a Safe Work Method statement. The Safe Work Method Statement should —

- (a) address appliance isolations (gas, electricity and water);
- (b) appliance inspection; and
- (c) verification testing to be carried out prior to any service/repair work and before any live diagnostic testing while the appliance is energized.

2.3 Electrical safety

NOTE Jurisdictions may have specific licensing, registration or authorization requirements for electrical work.

2.3.1 Preliminary checking

For appliances that connect to a general purpose socket-outlet (GPO), the supply cord, plug and socket-outlet shall be inspected visually for signs of damage and deterioration.

For appliances installed with direct wiring to the electrical supply, the following shall be identified:

- (a) Whether a Residual Current Device (RCD) is fitted to the circuit to which the appliance is connected.
- (b) Means of isolation.

NOTE Guidance on isolation and testing is provided in [Appendix B](#).

2.3.2 Isolation from electrical supply

The appliance shall be isolated from the electrical supply in both active and neutral conductors prior to the commencement of servicing.

With the appliance isolated from the electrical supply, measure the resistance between the earth connection and any exposed metal on the appliance. The resistance shall not exceed 0.5 Ω .

In some jurisdictions, insulation resistance testing is required. If insulation testing is conducted, the measured insulation resistance between current-carrying conductors and any exposed metal shall not be less than 1 M Ω in accordance with AS/NZS 3760.

2.3.3 Safety around electrically energized gas appliances

Tasks performed on electrically energized gas appliances shall be limited to observation, taking measurements and making adjustments that do not expose the service provider to live electrical parts or conductors.

Retrieval of stored electronic data shall only be performed in accordance with local jurisdictional requirements.

NOTE Some jurisdictions have additional authorization requirements with regards to work on energized appliances.

2.4 Appliance inspection

Prior to commencing any servicing, repair, testing or conversion work, the appliance shall be inspected. Inspection shall include the following, as a minimum:

- (a) Identification of the make and model of appliance.
- (b) Evidence of certification or approval.
- (c) Date of manufacture and/or serial number.
- (d) Identification of any evidence of incorrect operation (such as signs of excessive heat on the appliance or environment, carbon deposits or material damage).
- (e) Evidence of tampering or modification.
- (f) Location and condition of the installation (conformance with AS/NZS 5601 series current at the time of installation).
- (g) For open-flued appliances, identification of exhaust fans and other air-movement systems, which may cause a negative pressure in the appliance operating environment.

(h) Evidence of any safety recall, prohibition or notice.

NOTE 1 The Australian Competition and Consumer Commission (ACCC) website includes information on gas appliance recalls and safety alerts.

NOTE 2 See [Appendix A](#) for checklists for performing site and appliance inspection prior to commencing work.

2.5 Unsafe appliances or installations

Immediate steps shall be taken to make safe any unsafe gas appliance(s) or gas installation.

Where any gas appliance or gas installation cannot be made safe, the owner/occupier or landlord shall be notified in writing that the appliance/installation is unsafe and requires correction.

NOTE 1 The Technical Regulator and/or the gas supplier may be required to be informed.

NOTE 2 The Technical Regulator may have a required form of notice. [Appendix C](#) includes an example of a written notification.

NOTE 3 Making an appliance safe may require disconnection from the gas supply.

2.6 Equipment

2.6.1 Tools, equipment and materials

Tools, equipment and materials shall be appropriate to the tasks. These may include:

- (a) Manometer or pressure gauge sufficient to measure appliance inlet and normal test point pressure(s) according to the appliance manufacturer's specification.
- (b) Combustion products detection equipment.
- (c) Leak detection equipment.
- (d) Electrical test equipment appropriate for gas appliance diagnostics, such as:
 - (i) Multimeter.
 - (ii) Continuity and insulation resistance tester.
 - (iii) Portable residual current device (RCD).
 - (iv) Neon tester.
 - (v) Power point tester or polarity tester.
- (e) Thermometer.
- (f) Bonding straps.
- (g) AS/NZS 5601 series.
- (h) Suitable means to check flue operation (e.g. smoke matches).
- (i) Hand tools as required.
- (j) Where available, reference manuals and specifications for the appliance to be serviced.
- (k) Checklists and procedures as appropriate (see [Appendix E](#) for examples).
- (l) A means of recording steps taken and information gained.
- (m) Non-compliant and unsafe appliance labels.

Access to the following is recommended, as applicable:

- (i) Safety Data Sheets (SDS) for all chemicals used while completing gas work.
- (ii) Dry chemical powder BE fire extinguisher (> 1 kg).

2.6.2 Combustion products detection equipment

Equipment for the detection of combustion products shall be suitable for the intended application, including the temperature of the medium being measured and temperature rating of the equipment.

The equipment shall be selected for the range and resolution that enables the detection of combustion products that may be present in the immediate vicinity of the appliance draught diverter and adjacent to the opening for the intake of combustion air.

2.6.3 Calibration of test equipment

Equipment requiring calibration, such as combustion products detection equipment and digital manometers, shall be calibrated against a reference source that is traceable.

NOTE See [Clause G.4](#) for further information on test equipment calibration.

2.7 General servicing

The servicing shall comprise inspection, cleaning, maintenance and testing activities suitable for the type of appliance. Once the cleaning and maintenance has been completed, the appliance and installation shall be tested for correct and safe operation.

NOTE Additional guidance is available in [Appendices D](#) and [E](#).

2.8 Repair

2.8.1 Replacement of components

Replacement of components within a gas appliance shall be in accordance with one of the following:

- (a) Replacement components that are specific to the appliance.
- (b) Where (a) is unavailable, components nominated by the manufacturer or supplier as being suitable alternative replacements.
- (c) When neither (a) nor (b) are available, replacement components used shall maintain the equivalent safety function.

NOTE Jurisdictions may have specific legislative requirements for gas appliances that have been repaired through the utilization of parts which are not “like for like”. The Technical Regulator should be contacted for local jurisdictional requirements.

Where there are no replacement components available that meet these requirements, the appliance shall be rendered inoperable.

2.8.2 Repair of components

Components in certified gas appliances should be replaced rather than repaired or refurbished.

Any repairs or refurbishments to a component shall be —

- (a) carried out according to manufacturer’s instructions, where applicable or permitted;
- (b) maintain the equivalent safety function; and