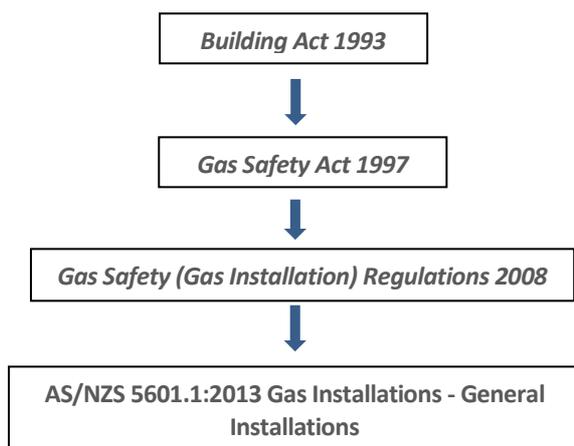


AS/NZS 5601.1:2013 Gas Installations – General Installations AMENDMENT NO. 2

What is the scope of this Standard?

AS/NZS 5601.1:2013 contains the requirements and methods of compliance for the “design, installation and commissioning of gas installations that are associated with the use or intended use of fuel gases such as natural gas, LP gas or biogas.”

Victoria’s Plumbing Regulatory Framework



Where is AS/NZS 5601.1:2013 called up?

The *Gas Safety Act 1997* forms part of the “plumbing laws” as defined by Section 221B of the *Building Act 1993*. Section 72 of the *Gas Safety Act 1997* requires:

- 1) A person carrying out gasfitting work must ensure that that work complies with—
 - a) the prescribed standards and requirements in relation to that work.

Version No. 041
Gas Safety Act 1997
No. 99 of 1997

Regulation 15 of the *Gas Safety (Gas Installation) Regulations 2008* states that:

- 1) For the purposes of section 72 (1) of the *Gas Safety Act*—

- a) the prescribed standard in relation to gasfitting work to which **AS/NZS 5601.1** applies is that standard

Australian/New Zealand Standard™

Gas installations

Part 1: General installations

AS/NZS 5601.1 (including any amendments, modification or replacement Standard) is therefore the prescribed Standard for all relevant gasfitting work in Victoria.

Amendment - changes and impact

In May 2016 Standards Australia published Amendment No. 2 to **AS/NZS 5601.1:2013**. The purpose of this Amendment is to ensure that all performance based and essential safety requirements in section 2 of each standard has a matching deemed to satisfy solution and vice versa. In addition, it also addresses several issues that were raised during the review of **AS/NZS 5601.1:2010**. Major changes include, but are not limited to, the following:

- Indoor BBQs designed for residential premises must be certified as a domestic cooking appliance.
- Domestic cooking appliances in a combined living/sleeping area must be installed with a rangehood ducted to the outside.
- Commercial catering equipment may only be installed in residential premises if permitted in the manufacturer’s installation instructions.
- Domestic cooking appliances installed in commercial kitchens must be installed to the requirements for commercial catering equipment.
- It is now mandatory for fixed installations of BBQs and radiant heaters designed for outdoor use to be installed outdoors.

Detailed descriptions of the amendments are included in this Note. The amendment is available free of charge

from the SAI Global website (<http://infostore.saiglobal.com/store/>) but must be read in conjunction with **AS/NZS 5601.1:2013**.

Publication Date of Amendment

- 11 May 2016

Class of plumbing work affected

- Gasfitting

NOTE: New Clauses have been marked with (NEW)

Section 1 Scope and General

Clause 1.3 Exclusions (d) (NEW)

This Clause has been rewritten to clarify that although **AS/NZS 5601.1:2013** does not apply to “caravans and boats”, it does apply if practitioners are installing “commercial catering equipment”.

Clause 1.8 Definitions

Several new definitions have been added:

1.8.11A Chimney liner (NEW)

“A continuous duct made of a material which complies with Table 4.2, (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.”

1.8.40.3.A Flue connection (NEW)

“A device incorporated in an appliance for the connection of a flue or draught diverter, barometric device, fan or similar part.”

1.8.103A Single residential premise (NEW)

“A single residential premise is considered to be:

- a) In Australia, a single dwelling, Class 1a, as defined in the National Construction Code Series, Volumes 1 and 2.
- b) In New Zealand, a detached dwelling, as defined in the New Zealand Building Code.”

Table 4.1 Consumer Piping Materials – Piping materials operating at 70 kPa (NEW)

The option has been broadened. **AS/NZS 5601.1** now allows PE-X piping of ‘a’ and ‘c’ types as well as PE-Xb. The Technical Committee concluded that PE-Xa and PE-Xc meet similar criteria to PE-Xb in conformance with the product standard AS/NZS2492.

The option to install piping above ground provided it has “mechanical protection” has been deleted. PE-X pipes conforming with AS/NZS2492 are no longer allowed to be installed above ground.

Section 5 Means of Compliance – Installing Consumer Piping

Clause 5.2.8 Means of Disconnection

This clause has been deleted as these requirements are already adequately covered in *Clauses 6.6.3 Means of Isolation* and *6.6.4 Means of disconnection*.

Clause 5.2.10 Building isolation (a)

This clause has been clarified. Practitioners are required to install a manual shut off valve to the consumer piping at every point of entry of piping to the building, not just the first attachment or main run.

Clause 5.4.6 Marker tape

This clause has been rewritten to clarify that the clause applies to multilayered piping as well:

“Marker tape complying with the requirements of **AS/NZS 2648.1** shall be laid above plastic and multilayer consumer piping when installed in open-cut trench”.

Clause 5.9.1 Hose assembly requirements (a)

This clause has been clarified. It is now specifically prohibited to “join” two or more hose assemblies. They must also be of “a continuous length”.

Section 6 Means of Compliance – Installing Gas Appliances

Clause 6.2.3 Restriction on flueless gas appliances

This clause has been broadened. Flueless gas appliances shall not be installed in a bedroom unless it is a “domestic gas cooking appliance installed in a combined sleeping/living area in accordance with Clause 6.10.1.14”.

Clause 6.4.4.2 Air supply to gas appliances – General Requirements

This clause has been modified to require that any appliance installed in a plant room or residential garage must have ventilation “irrespective of the gas consumption of the appliances or the volume of the room.”

Both *plant room* and *residential garage* are defined under *Section 1.8 Definitions*.

Clause 6.4.4.4 Natural ventilation via adjacent room

This Clause has been expanded to clarify that the adjacent room must include ventilation irrespective of the gas consumption of the appliances or the volume of the room:

“For a plant room, the adjacent room shall be a non-habitable room and the adjacent room shall be ventilated directly to outside irrespective of the gas consumption of the appliances or the volume of the room. Ventilation via an adjacent room is not permitted for a residential garage.”

Table 6.1 Ventilation (NEW)

A new reference to installations in residential garages has been added to Table 6.1. All gas appliances must source their ventilation “directly to outside” while the ‘F’ factor required to calculate the minimum size of the ventilation openings is “300”.

Clause 6.6.5 Fitting of an appliance gas pressure regulator (NEW)

This clause has been added to provide additional clarity about when a gas pressure regulator is required to be fitted to a Type A gas appliance. They are required to be fitted except where:

- a. “an LP Gas appliance is certified without a regulator;
- b. the regulator is an integral part of the appliance; or
- c. the appliance is an open burner such as a gas ring, laboratory Bunsen, or blow pipe, where the gas pressure cannot exceed 1.5 kPa for natural gas or 3 kPa for LP Gas. However, a regulator on an appliance with this type of burner is not to be removed.”

When installing regulators that have been supplied as a separate component they must be close to the appliance and accessible.

Clause 6.8.6 Chimneys (NEW)

A new requirement has been added to this clause:

“Where the integrity of a chimney is unsatisfactory a chimney liner shall be installed”.

Clause 6.9.4 Terminating a flue under a covered area or in a recess

This Clause has been clarified to reinforce the obligation of practitioners to ensure that combustion products are readily dispersed.

Clause 6.9.4 (b) has been extensively rewritten to state:

“In the case of a fan-assisted appliance only, when one side is open, the flue terminal shall be within 500 mm of the opening, and discharging in the direction of the opening [see Figure 6.2(a)]. There shall be no other flue terminals, gas meter, electricity meter, fuse box or openings into the building along the wall within the 500 mm distance. The flue terminal shall be located to ensure that a free flow of air across it is achieved.”

Figure 6.2 (a) and (b) Location of flue terminals of balanced flue, room-sealed, fan-assisted or outdoor appliances (NEW)

A new Figure has been added to assist practitioners in understanding and complying with the revised wording contained in *Clause 6.9.4 (b)*.

Clause 6.9.5 Terminating a flue in a roof space

The terminology in this clause has been clarified. In addition, a new prohibition has been added:

“A flue terminal shall not be located within a roof space that is utilized for heat recovery ventilation.”

Clause 6.10.1.7 Indoor barbecues in residential premises

This clause has been tightened. All barbecues installed in residential premises must meet either **AS/NZS 5263.1.1 Gas Appliances - Domestic Gas Cooking Appliances** or **AS 4551 Domestic Gas Cooking Appliances**.

This includes barbecues that might have been originally designed for commercial use unless the installation complies with the new clause 6.10.1.15. To be compliant they must meet the requirements of the domestic gas cooking appliance Standard.

Clause 6.10.1.14 Domestic gas cooking appliances in combined living/sleeping areas (NEW)

This new Clause has been inserted to provide clarity around the requirements for the installation of gas cooking appliances:

“In a combined living/sleeping area, a domestic cooking appliance shall only be installed under a rangehood or exhaust fan which is ducted to outside.”

This clause applies to buildings approved for construction after the adoption of this Amendment by Energy Safe Victoria (ESV). This occurred on 11 May 2016.

Clause 6.10.1.15 Commercial catering equipment in residential premises (NEW)

This new clause has been inserted to help clarify the requirements for commercial catering equipment in residential premises:

“Commercial catering equipment shall only be installed in residential premises if permitted in the manufacturer’s installation instructions.”

The gas installation must comply with *Clause 6.10. Commercial catering equipment* and include an exhaust system complying with **AS 1668.1-Fire and smoke control in buildings** and **AS 1668.2-Mechanical ventilation in buildings** that is interlocked to the appliance gas supply.

Clause 6.10.2.5 Domestic gas cooking appliances in commercial installations

This clause has been added to clarify the requirements when an appliance designed for a domestic use has been installed in a commercial setting:

“Domestic cooking appliances installed in commercial kitchens shall comply with the requirements of *Clauses 6.10.2.1 - 6.10.2.4.*”

Clause 6.10.6.1 (b) Space Heaters – Limitation on Installation

This clause has been modified as follows:

“A flued heater fitted with a flame safeguard system and with permanent ventilation provided in

accordance with *Clause 6.4.4 Air requirements for gas appliances*, irrespective of the heater rating.”

Clause 6.10.19 Gas barbecues and radiant gas heaters for outdoor use (NEW)

This mandatory new Clause replaces the informative clause 12 for outdoor appliances from *Appendix 1 Appliances in outdoor areas* to *Section 6*. It is designed to clarify the requirements for installing gas barbecues and radiant gas heaters in outdoor settings. Within **AS/NZS 5601.1** “outdoors” is defined as:

“An above-ground open-air situation with natural ventilation, without stagnant areas, and where gas leakage and products of combustion are rapidly dispersed by wind and natural convection.”

The Clause specifies that these appliances can only be installed in enclosures that have:

- a. “An enclosure with walls on all sides, but at least one permanent opening at ground level and no overhead cover.
- b. Within a partial enclosure that includes an overhead cover and no more than two walls.
- c. Within a partial enclosure that includes an overhead cover and more than two walls, the following shall apply—
 - i. at least 25% of the total wall area is completely open; and
 - ii. at least 30% of the remaining wall area is open and unrestricted.

When installed on balconies or verandahs, “at least 20% of the total of the side, back and front wall areas shall remain open and unrestricted.”

Clause 6.11 Commissioning

The commissioning requirements for the installation of gas appliances have been revised to clarify the existing requirements, and expanded.

Practitioners are reminded that:

“Commissioning requirements apply to both new and existing gas installations. Commissioning of existing gas installations is required after making modifications.”

The commissioning procedures have also been expanded to include:

- “Checking for flame abnormality in accordance with manufacturer’s instructions.
- Operating the appliance at the maximum gas consumption to bring to normal operating temperature.
- After Step (e) where appropriate, testing for spillage of combustion products. For a flued appliance, testing shall be performed in accordance with *Appendix R*.”

Appendix F - Sizing Consumer Piping

The worked examples in *Appendix F* have been modified to include copper rather than steel, and Tables added to give distinct values for Australia and New Zealand.

In addition to the existing *Table F13 Natural Gas – Flow through – Copper pipe*, a new *Table F13A* has been added detailing natural gas flow through steel pipe.

Appendix R – Spillage Tests for Flued Appliances

The Appendix has been restructured to clarify and expand the required procedures. These are now organised as follows:

- *Section R2 - Testing the effect of mechanical extraction ventilation and determination of additional ventilation area with appliances not operating*
- *Section R3 – Testing Appliance and Flue operation*
- *Section R4 – Location and installation for additional and permanent ventilation openings*

AS/NZS 5601.1 now requires practitioners to test the potential for mechanical extraction device to products of combustion back down the gas appliance flue. This may require the practitioner to install additional ventilation within the space.

Clause R2.1 Test Conditions

This Clause is part of the new structure of *Appendix R* that first details the conditions in which a test should be carried out, before describing how it should be carried out.

The conditions in which the test shall be carried out include:

- “The effect of mechanical extract ventilation is tested on all flued appliances in a space”;
- All spaces are tested individually;
- All flued appliances in the test space are not in operation;
- The “suction effect on the flue system(s) or chimney(s) of flued appliance in the space being tested due to operation of extraction fans is the greatest”.

Clause R2.2 Test Procedure (NEW)

This new clause lays out specific steps for testing mechanical extraction and additional ventilation. New requirements include:

Use a smoke producing device placed next to the draught diverter or the openings of each appliance to test whether the smoke is “being drawn away from the appliance towards the source of suction.”

A new flowchart - *Figure R1* - has also been added to assist practitioners by visually mapping the test procedures.

Clause R3.1 Testing Appliance and flue operation - Test Conditions

To simplify the commissioning process the Standard details clear and concise testing conditions. New requirements include:

- Appliances must be tested individually;
- All windows that were open during the commissioning procedure covered in *Clause R2.2* must remain open.

Clause R3.2 Test procedure

The testing procedure has been deliberately simplified into a five step process that maintains many of the existing requirements.

However, there has been a substantial amendment in changing the length of time appliances must be turned on during the commissioning process. Now, only “Type 1 decorative gas flame effect fires” are required to be tested for 10 minutes. All other appliances only require 5 minutes.

Clause R4 Location and installation for additional and permanent ventilation

This clause has been clarified to state that the size of any additional permanent ventilation openings must

be calculated using the processes described in *Clause R2* and *Clause R3*. Similarly, testing the effectiveness of the new ventilation openings must follow the procedures in *Clause R2*.

This Note on the recent Amendments is not exhaustive. Compliance with Victoria’s plumbing laws requires gasfitters to refer to and apply the complete Standard, *AS/NZS 5601.1:2013 Gas installations Part 1: General installations*. The full text of the standard can be found at the SAI Global website: <http://infostore.saiglobal.com/>.

AS/NZS 5601.1:2013/Amdt 2:2016 is © Standards Australia Limited, and has been reproduced by the VBA with the permission of Standards Australia under Licence 1609-c020.