

# Gas Information Sheet 58

## Type A appliance service – the quality and adequacy of air supply



### Overview

Ensuring the quality and adequacy of air supply to a gas appliance is a fundamental responsibility for all gasfitters that are licensed to perform gas servicing work on Type A appliances. As a result, understanding the required scope of this work is critical for gasfitters to be able to complete it successfully and meet their responsibilities under the Gas Safety Act 1997 and subordinate regulations.

This information sheet:

- is only intended to provide a guide to the requirements for Type A servicing and inspection work (for more detailed information, please refer to AS 4575 Gas Appliances – Servicing of Type A appliances)
- should be read in conjunction with:
  - Gas Information Sheet 57 - Your Obligations Under The Gas Safety Act
  - Gas Information Sheet 59 - Inspecting and Servicing Type A Appliances

### The quality and adequacy of air supply

There are three points to be considered in relation to the supply and movement of air when installing or maintaining a gas appliance.

1. Air supply quality (AS/NZS 5601.1 clause 6.4.2)
2. Air supply adequacy (AS/NZS 5601.1 clause 6.4.1)
3. The adverse effect of air movement systems (AS/NZS 5601.1 clause 6.3.1).

In a residential building, the quality of the air supply is normally acceptable, but it is worth keeping this in mind if the appliance is being installed in a laundry or a cluttered area, where there may be potential for contamination of the air supply.

**Note:** A comprehensive gas appliance safety check should always be carried out when installing or maintaining a gas appliance.

#### 1. Air supply quality

Clause 6.4.2 Quality of Air Supply explains the air supply for a gas appliance should not be contaminated with combustion products, or contains chemicals, dust and fibres, or flammable vapour that can affect combustion or the gas appliance's safe operation.

Contamination is an important consideration, but ensuring gas appliances are installed in rooms with adequate ventilation is another important requirement. Providing adequate ventilation is more complicated, as you need to take into account the date the building was approved for construction before or after the adoption of AS/NZS 5601.1 on 31 March 2014.

#### Buildings approved before 31 March 2014

Buildings approved for construction before 31 March 2014 must comply with clause 6.4.5. This clause provides a formula to evaluate ventilation requirements, which simply means that for every 3 MJ/h you will require 1 cubic metre (room volume).

**For example** – a 30MJ/h appliance needs to be installed in a room with a volume no smaller than 10 cubic metres. If the room is smaller than 10 cubic metres, it will require additional permanent ventilation.

## Buildings approved on or after 31 March 2014

Buildings approved for construction on or after 31 March 2014 must comply with clause 6.4.6, which requires 3MJ/h or 0.4 MJ/h per cubic metre of room volume, depending on whether the appliance is flueless (except for flueless space heaters) where 3MJ/h/m<sup>3</sup> applies or open flued where 0.4MJ/h/m<sup>3</sup> applies.

**For example** – a 30MJ/h cooktop needs to be installed in a room with a volume no smaller than 75 cubic metres. If the room is smaller than 75 cubic metres it will require additional permanent ventilation.

## 2. Air supply adequacy

Clause 6.4.1 Adequacy of Air Supply, explains appliances should be installed in locations with adequate ventilation to enable (under normal operating conditions) complete gas combustion, proper operation of the flue and the immediate surroundings to remain at a safe temperature.

The adequacy of ventilation is another important consideration, but it does not specifically consider whether extraction fans are present. As a result, the next step is to check whether any extraction fans are creating negative pressure.

The easiest way to determine whether an on open-flue gas appliance will be affected by air movement caused by extraction fans is to perform the following test:

1. Shut all the external doors and windows, and then open or close internal doors to create the maximum possible negative pressure potential.
2. Turn on all the extraction fans.
3. Carry out a smoke test at the downdraught diverter or combustion air intake.

If smoke is being drawn away from the diverter opening or combustion air intake and into the room then the fans are drawing air from the flue (to equalise the room's pressure). This is referred to as 'negative pressure'. If negative pressure is present, then the installation does not meet the requirement of clause 6.3.1 and is non-compliant. Additional ventilation needs to be installed.

To determine how much extra ventilation is required, open the nearest window in small increments while continuing the smoke test. The negative pressure is eliminated when the smoke stops being drawn away from the appliance.

If you intend to leave the appliance operating, additional ventilation must be installed. It is highly recommended that you also conduct a visual inspection of the appliance and a carbon monoxide (CO) spillage test, as the flue system or appliance may be defective.

## 3. The adverse effect of air movement systems

Clause 6.3.1 Adverse Effect of Air Movement Systems explains gas appliances shall not be installed in an area where a fan, ventilation system, air blower, or air distribution system, under any circumstances prevents the appliance getting the air it needs:

- for combustion
- draught diverter dilution (or otherwise harmfully affect the appliance's operation).

This may be difficult in modern buildings, which are more air tight than older buildings and allow much less ventilation. As a result, it may be necessary to install additional permanent ventilation (other than already required by clauses 6.4.5 or 6.4.6). See Paragraph Q3 within Appendix Q, to determine if additional ventilation is required.

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Check Energy Safe Victoria's website for the current version.

## Summary

When carrying out a new installation or checking the safety of an old one, you must complete the following steps:

1. Ensure the air quality supplying the gas appliance is acceptable.
2. Ensure the room is of sufficient size (if not, additional ventilation needs to be installed).
3. Check that extraction fans are not creating negative pressure at the appliance flue.

Once the installation is assessed and you have established there is adequate ventilation, no negative pressure, and the air quality is acceptable, you can commence an inspection of the appliance and flue.

Once that is complete, you are ready to commence a CO spillage test.

Remember, if the installation passes the CO spillage test but fails the negative pressure test, then additional permanent ventilation needs to be installed if the heater is being left in operation.

## Related information

**Fact Sheet – What is negative pressure:**

[home](#) > [industry guidance](#) > [gas](#) > [gas information sheets](#) > [GIS XX](#)

[https://content.esv.vic.gov.au/sites/default/files/2022-12/Fact\\_sheet-Negative\\_pressure\\_5-12-2022.pdf](https://content.esv.vic.gov.au/sites/default/files/2022-12/Fact_sheet-Negative_pressure_5-12-2022.pdf)

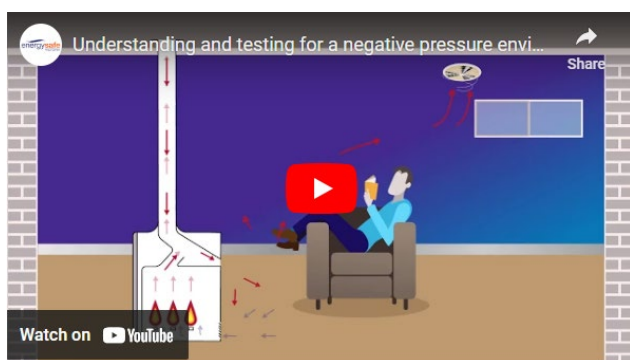
**Gasfitter's toolkit**

[home](#) > [industry guidance](#) > [gas](#) > [gasfitters toolkit](#)

<https://www.energysafe.vic.gov.au/industry-guidance/gas/gasfitters-toolkit>

## Understanding and testing for a negative pressure environment (video)

- Energy Safe has developed a short animation for gas fitters explaining
- what a negative pressure environment is
- it's effect on open flue gas heaters
- how to test for it and how to mitigate it.



<https://www.youtube.com/watch?v=-BMy9lvJM2s>

## Who we are

At Energy Safe Victoria we work to keep Victoria energy safe.

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Check Energy Safe Victoria's website for the current version.

We regulate the energy industry and sector to ensure generation, supply and usage uphold safety standards, and engage with the community to raise awareness of energy safety risks.

In everything we do, we strive to deliver on our purpose to keep Victoria energy safe. Always.

[www.energysafe.vic.gov.au](http://www.energysafe.vic.gov.au)