

Information Sheet No 16 VENTILATION FOR GAS APPLIANCES AND EQUIPMENT

INTRODUCTION

Providing ventilation is an essential part of gas installation work, and it is the responsibility of the installer to ensure that the relevant requirements of AS 5601 - Gas Installations, are met. Failure to provide adequate ventilation is not only an offence under the *Gas Act 2000*, but can lead to serious incidents, including carbon monoxide poisoning.

There are two main purposes of ventilation in respect to a gas installation:

- to provide fresh air to enable gas appliances and associated flues to operate safely and correctly; and
- to provide regular air changes in enclosures containing gas meters or gas pressure control equipment.

Factors to be considered

Ventilation is required in every situation where gas appliances or equipment such as meters and pressure control equipment is installed. Factors that need to be considered include:

- Appliance type or equipment installed;
- Method of flueing those appliances;
- Effect of air extraction systems;
- Means of obtaining adequate ventilation;
- Ensuring ventilation will be maintained.

AIR SUPPLY TO APPLIANCES

Natural Ventilation

Ventilation requirements are generally met by the provision of permanent openings in an outside wall of the room or enclosure. AS 5601, Clause 5.4, provides simple formulas to calculate the size of the required openings.

NOTE: AS 5601 provides specific ventilation requirements in:

- section 5.12 for appliances;
- section 6 for caravans; and
- section 7 for marine craft.

Mechanical extraction systems

Gas appliances are often located in rooms containing mechanical air extraction systems, e.g. commercial kitchens.

Installers must ensure that an appliance flue functions properly when the extraction system is operating. In a poorly ventilated room, it is possible for a mechanical extraction system to pull the combustion products from the appliance flue into the room.

Inadequate sized ventilation openings can also result in the door of the premises being difficult to open or close.

(a) Ventilation for flued appliances

If a flued appliance, such as a storage water heater, is installed in a location where there is a mechanical extraction system, then the ventilation openings need to provide combustion air and remove combustion air, be of sufficient size to ensure that the flue is not affected by the extraction system. Refer AS 5601, Clause 5.3.1.

(b) Ventilation for flueless appliances

Ventilation is also required for flueless appliances, to provide combustion air and remove combustion products. It is essential that contaminated air and excess air drawn through an extraction system is replaced through permanent ventilation openings.

Mechanical Ventilation - Appliances

If the air for combustion and room ventilation is provided by mechanical means, such as for type B appliances in industrial or commercial situations where natural ventilation may not be feasible, then a **positive** air pressure is required in the room or enclosure.

Two options are available: see Fig 1(b):

1. Mechanical inlet with mechanical exhaust ventilation; or
2. Mechanical inlet with natural exhaust ventilation.

NOTE: The provision of mechanical exhaust alone is not acceptable. Mechanical ventilation must be interlocked to prevent the appliance from operating if the ventilation system fails or is switched off.

VENTILATION OF EQUIPMENT

The requirements for the ventilation of gas equipment (not appliance) are given in AS 5601, Clause 4.15, for lighter than air gases (such as natural gas) and Clause 4.16 for heavier than air gases (such as LP Gas).

Natural ventilation

Ventilation requirements are generally met by the provision of permanent openings in an outside wall of the room or enclosure. AS 5601, Clause 4.15 provides a formula to calculate the size of the required openings.

Mechanical Ventilation - Equipment

Sometimes, by necessity or by choice, ventilation by mechanical means is required. Two options are available.

- * Mechanical inlet and mechanical exhaust ventilation. See Fig 2(a); or
- * Mechanical exhaust ventilation with natural inlet ventilation. Fig 2(b).

NOTE: The provision of mechanical inlet ventilation alone is not acceptable because a neutral or negative air pressure is required in the enclosure to prevent any escaping gas from being 'pushed' into rooms adjacent to the enclosure

If further information is required, please contact Gas Standards *and* Safety on 1300 366 322