Issue No. 33
November 2004

gas focus

Ventilation requirements for gas bayonet fittings and unflued gas space heaters

The Housing Industry Association and the Master Builders Association have recently expressed concerns regarding the size of vents to be provided when an unflued gas space heater or gas bayonet fitting is installed in a building.

Their concerns arose from an article published in Gas Focus No 32 (July 2004) which they claim is creating some confusion in the housing industry in that the size specified is difficult from an industry compliance perspective.

It seems that quite some years ago, a non-complying vent size of 18,000 mm^2 (180 cm^2) free area was 'accepted' by the former State Energy Commission's gas inspectors and became the local 'industry standard'. That size vent is still being used.

However, the ventilation requirements notified in the recent Gas Focus article are those defined in the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999,* that is, 25,000 mm^2 free area. In the light of recent reports on the potential health risks due to emissions from flue-less gas space heaters, there is no intention of reducing the vent size requirement.

However, as there is a need to allow industry sufficient time to make changes to its practices and to source the required vent (25,000 mm^2 free area), the installation of vents with 18,000 mm^2 free area will be accepted until the end of 2004.

From 1 January 2005, every installation for which the Notice of Completion is submitted to the gas supplier must fully comply with the ventilation requirements of 25,000 mm^2 free area for each vent opening.

Installation of non-complying vents after 1 January 2005 will result in Orders being issued to correct the work and may also result in prosecution action by Energy Safety.

Gas fitters and builders should only use those vents where the manufacturer stipulates the free open area of the vent (see diagram below).

Marking may be on the packaging and/or [preferably] on the vent.

In this issue...

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Clearances from flues

Some confusion exists about how to determine the allowable clearances from windows and doors for gas appliance flue terminals.

Figure 5.3 “Minimum clearances required for balanced flue terminals, fan-assisted terminals, room-sealed appliances terminals or the terminals of outdoor appliances” in Australian Standard AS 5601/AG 601 – 2002 “Gas installations”, provides guidance on this matter.

The following figures are provided to help gas fitters to determine these clearance distances correctly. The lightly shaded areas represent a prohibited area. The prohibited area is determined by measuring the required clearance from the window, door or gas meter box in horizontal and vertical directions. The prohibited area is **not** determined by measuring in a diagonal direction (that is, the shortest distance). The lettering used in the examples is taken from Figure 5.3 of AS 5601 2002.

The flue terminal must not be in this prohibited area.

Figures 1 to 2 show examples of how prohibited areas **should** be measured.

Figure 3 shows how prohibited areas **should not** be measured.

Figure 1 depicts an openable window near a gas appliance installation. Note that the flue terminal must be outside the prohibited area surrounding the window, as shown.

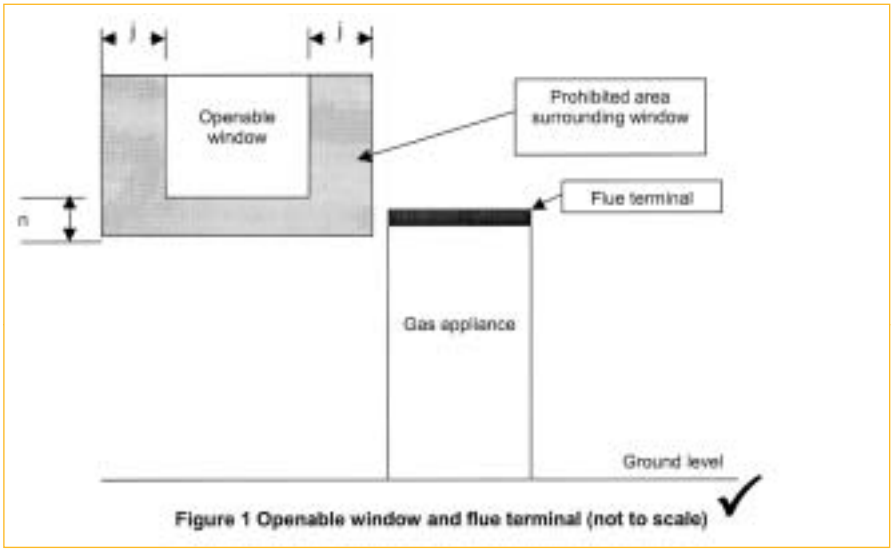

Figure 1 Openable window and flue terminal (not to scale)

Figure 2 represents a gas meter installation in a wall. Note that a flue terminal must be outside the prohibited area surrounding the gas meter, as shown.

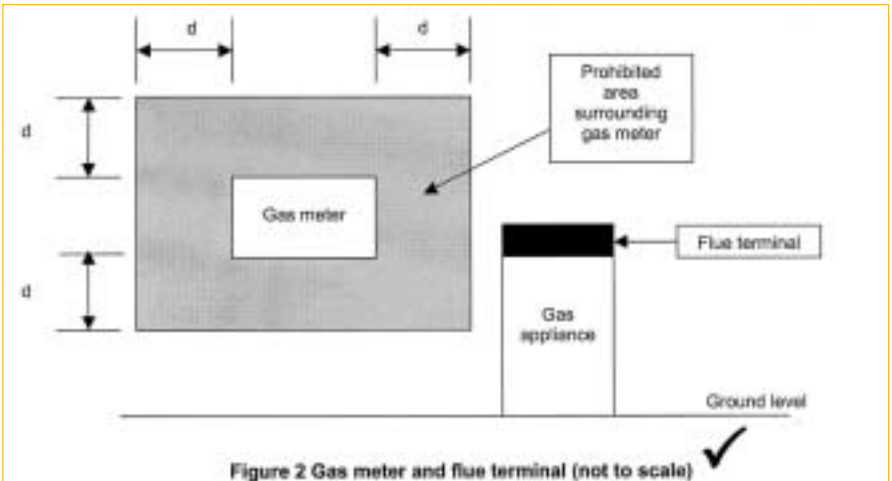

Figure 2 Gas meter and flue terminal (not to scale)

Figure 3 shows an openable window and a gas appliance installation. Note however that the flue terminal clearance distance has been **incorrectly** determined by measuring in a diagonal direction, that is, the shortest distance from the flue to the openable window.

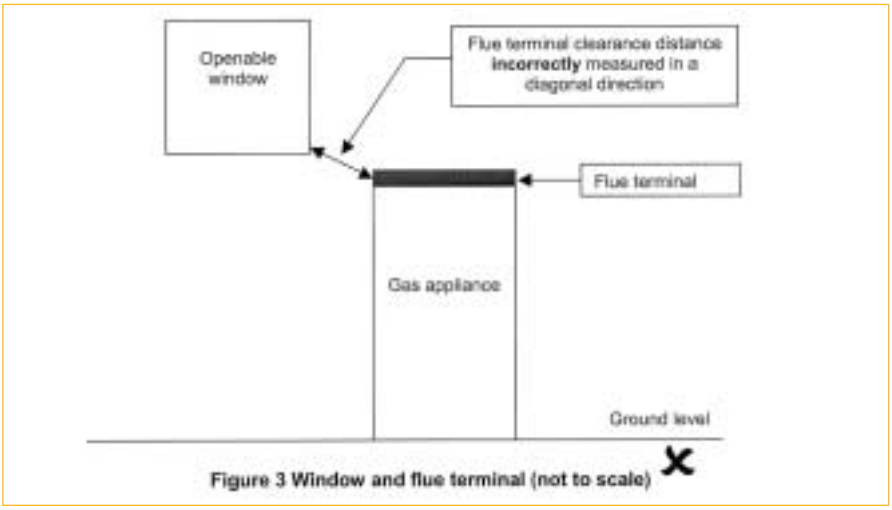

Figure 3 Window and flue terminal (not to scale)

Installing and repairing used second-hand Type A gas appliances

The *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* require that a gas fitter check used/second-hand appliances for safe operation before installing them in a consumer's gas installation.

For domestic appliances, the gas fitter must:

- look for the approval badge and data plate that identifies the appliance as being approved/certified;
- check the appliance for safe operation before returning it to permanent connection; and
- **not** install the appliance if it is unsafe or non-compliant (not approved/certified).

If the used/second-hand appliance proves satisfactory to install, the gas fitter must provide advice in Section 8 of the Notice of Completion to the effect " the second-hand gas appliance installed is operating safely". Failure to provide this endorsement is a contravention of the Regulations.

Repairing gas appliances with parts that are not approved for use by the manufacturer is not permitted. Appliances have been found to be unsafe to use after being repaired with non-approved manufacturers' parts. Modification of a gas appliance can also make the appliance unsafe and is therefore not permitted without the approval of a gas inspector.

Checked and found dangerous

Commercial gas appliances are normally subjected to harsher treatment in use. Being of more robust construction, there is normally scope for these appliances to be refurbished and re-certified.

Gas fitters need to observe the following with regards to second-hand appliances:

- The appliance should be checked for approval badge and data plate.
- If the appliance is identified as approved, it may only need a thorough service and clean.
- If there is no identification, seek advice from one of the Type A Gas Appliance Certifiers or Reconditioners listed below.

Doug McKay
Dalefield P/L Fremantle
Ph: (08) 9314 5166

Peter Godden
PSG Gas Consultants Byford
Ph: (08) 9525 0125

Bob Hearn
Hi-Speed Gas P/L Jandakot
Ph: (08) 9417 1601

Peter Mulhern
Peter's Commercial Kitchens
Bayswater
Ph: (08) 9337 3325

Graham Clarkson
My Maintenance Company
Bibra Lakes
Ph: (08) 9331 5255

Darren Strachan
Strachan Plumbing and Gas
Kalgoorlie
Ph: (08) 9091 4160

Paul Jarvis-Vagg
PJV Gas Installations
Ph: 041 894 3254

George Malkiewycz
GM Gas Installations
Ph: 041 891 8704

Testing of consumer piping systems operating above 200 kPa

There are some inconsistencies in the way that industry tests gas piping systems designed to operate above 200 kPa.

Consumers' gas piping operating above 200 kPa must be installed, tested and certified in accordance with Australian Standard AS 4041 "Pressure piping" or AS 2885 "Pipelines – Gas and liquid petroleum – Design and construction". However, this does not necessarily mean the piping system is gas-tight.

The testing process in AS 4041 and AS 2885 Parts 1&2 is mainly concerned with the design construction and strength testing of the pipes, welds and pipe components. It does not consider the complete pipe system which may include pressure control devices, valves, meters etc. Often, to comply with the testing requirement nominated in the standard, components are removed before testing and replaced afterwards. This means the complete system has not been leak tested for gas tightness – regulation 26 of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* requires the piping system to be gas-tight before it is commissioned.

To ensure that the requirements of the regulation are met, Energy Safety, in consultation with industry, has developed and prepared a guideline on the testing of consumers' piping systems operating above 200 kPa. The guideline will provide a framework to ensure a consistent approach is taken to pressure testing of the complete piping system.

A copy of the guideline may be downloaded from Energy Safety's website under "Information / Publications".

Gas meter boxes may compromise pool safety

Drowning is the biggest single cause of accidental death among children under 5 years of age, representing 3 out of 4 fatalities in Australia in this age group. These drownings occur mainly in private swimming pools.

A gas meter box installed on a wall or brick fence may unwittingly provide a means for a child to scale a fence and gain access to a swimming pool. Gas fitters who are required to install a meter box at an existing residence where a pool is installed should be conscious of such situations. It may be necessary to alert the owner to the situation and discuss an alternative [and safer option] position.

Local government regulations require a perimeter fence or structure around a pool to be a minimum of 1200 mm high. It is about 600 mm from the finished ground level to the top of an installed gas meter box. This will contravene local government requirements.

If such a situation is ignored, at the very least the consumer faces a substantial fine when the next pool inspection is carried out, for not complying with the pool regulations. The worst case is that a child can easily use the gas meter box to climb over the wall to gain entry to the pool.

Prosecutions for breaches of the *Gas Standards (Gasfitting and Consumer Gas Installations)* Regulations 1999

1 July 2004 to 30 September 2004

Breach	*Name (and suburb of residence at time of offence*	*Licence No. ($)*	*Fine*	*Court Costs ($)*
Failed to ensure gasfitting work was carried out in a safe manner Regulation 18(1) GSR Did not ensure that the gas installation was made gas-tight Regulation 26(1) GSR	*Russell Lally (Kewdale)*	*GF 003774*	*1,500.00*	*310.45*
Failed to ensure gasfitting work was carried out in a safe manner Regulation 18(1) GSR Failed to ensure that every part of the gas installation on which the work was done or that was effected by the work, complied with the requirements referred to in Regulation 32 Regulations 18(2)(a)(i), 19(a)GSR	*Paul Sawyer (Woodlands)*	*GF 010239*	*1,000.00*	*343.45*