

Technical Solution Sheet 7.01

7: Mechanical Services (Including Duct Fixing)

Solid Fuel Heaters

AIM

The aim of this technical solution is to inform practitioners on the safe installation requirements for Solid Fuel Heaters (SFHs) and to provide guidance and advice on SFH maintenance and the role of Local Government and the Environment Protection Authority (EPA) in relation to wood smoke.

PLUMBING REGULATIONS 2008

The *Plumbing Regulations 2008* states that the construction, installation, replacement, repair, alteration, maintenance, testing or commissioning of a solid fuel heater is Mechanical Services Work. This work must comply with *AS/NZS 2918 Domestic solid fuel burning appliances - Installation*.

The installation of a SFH is classed as Mechanical Services work because it involves the heating of a building.

Only persons registered and / or licensed in mechanical services are permitted to install a SFH.

There is also a restricted class of mechanical services - "Mechanical Services - Restricted to Solid Fuel Heaters" This includes the installation, alteration or repair of any solid fuel heater, and its components where they are involved in the heating of a building.

It includes roof penetrations and flashings associated with solid fuel heater installations.

INSTALLATION REQUIREMENTS

AS/NZS 2918 along with specific manufacturers installation instructions contain important information relating to SFH clearances, flue terminals, flue clearances from combustible surfaces and ventilation requirements that allow the safe passage of convected heat from SFH installations and from flues in ceiling spaces or where solid fuel heater flues traverse new or existing chimneys.

Chimneys discharging combustion products shall be inspected for soundness and thoroughly cleaned of any flammable materials such as grass, small twigs and other debris that may be the result of birds nesting in the chimney cavity before a flue pipe is installed.

SFH flues must terminate external to the building in which the appliance is installed and outside any other enclosed space or confined space so that:

- The termination of the flue system does not constitute a risk of fire to any heat-sensitive materials.
- An air gap of not less than 10,000 mm² is provided at the top of the chimney between the flue pipe and the chimney with means to prevent significant ingress of water and debris.
- There is no ingress of flue gases through nearby windows or other openings, fresh air inlets, mechanical ventilation inlets, exhausts or the like (see Figure 1).

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Where a flue terminates in a region of high pressure relative to the combustion air inlet of the appliance, products of combustion may enter the building instead of being exhausted outside. This is known as a downdraught. The products of combustion may contain carbon monoxide, carbon dioxide, unburnt hydrocarbons and water vapour.

A downdraught condition must always be corrected as these products of combustion may otherwise build up to concentrations which may be hazardous to health. Typical methods for correcting downdraught conditions include:

- i. Ensuring that the flue system is sized correctly for the appliance
- ii. Extending the flue into a region of undisturbed airflow. This is the most important and successful corrective measure
- iii. Providing an outside source of combustion air to the appliance
- iv. Ensuring the flue is not being overcooled
- v. Removing any causes of negative pressure within the building
- vi. Fitting a suitable cowling.

Only a SFH certified to *AS/NZS 4013: Domestic solid fuel burning appliances - Method for determination of flue gas emission* can be legally manufactured or supplied in Victoria. This includes the supply of second hand heaters. A SFH should be clearly labelled with a permanent marking such as a metal plate on the back of the SFH indicating the maker of the SFH and, 'TESTED TO *AS/NZS 4013*.

TIPS FOR THE INSTALLATION OF A SFH

- Ensure the installation complies with *AS/NZS 2918*
- Ensure the SFH bears a permanent marking such as a metal plate on the back of the SFH indicating the maker of the SFH and, 'TESTED TO *AS/NZS 4013*
- A SFH and flue system should be installed to manufacturer's instructions. A SFH cannot be modified unless approved by a National Association of Testing accredited authority.
- Cracked and broken components on a SFH may render the installation unsafe.
- Mixing of appliance or flue system components from different sources or modifying the dimensional specification of the components may result in hazardous conditions. The manufacturer should always be consulted in relation to any modifications.

The flue must discharge all products of combustion gases and particulates generated by a SFH to the outside of the building in which the appliance is installed.

TIPS FOR CORRECT USE OF A SFH

- Make sure the user is instructed in the correct operation of the SFH and has a copy of the SFH operating instructions.
- Advise the user of the importance of regular SFH servicing by appropriately registered / licensed plumbing practitioners.
- SFH servicing shall ensure the integrity of the flue system including flues concealed in chimneys, flue and SFH clearances and ventilation.
- Flue systems shall be cleaned of soot or creosote to assist in the prevention of flue fires.
- Always use plenty of paper, good kindling and small logs to establish a hot fire quickly.

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- Never use treated or painted woods in any SFH; painted wood can contain lead; treated woods, such as fence palings, can contain arsenic. When burnt, these substances may be released into the air or be present in the ash and pose a risk to health and/or to the environment.
- Always leave the air control open for 20 minutes after refuelling heater.
- Avoid blocking the front of the firebox with logs.
- Do not overfill heater.
- Do not try to burn logs that are too large.

EPA VICTORIA

The Environment Protection Authority manages sources of air pollution in Victoria under the *Environment Protection Act 1970*. A Waste management policy (Solid Fuel Heating) was introduced under the Act in July 2004.

The policy references Part 12A of the *Building Act 1993* for the installation of a SFH (compliance with the *Plumbing Regulations*). The intent of the policy is to ensure that only a SFH certified to [AS/NZS 4013](#) can be legally installed in Victoria.

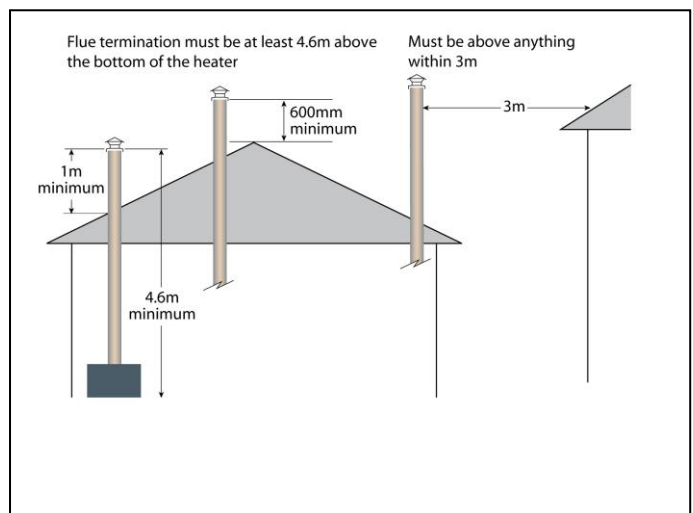
LOCAL GOVERNMENT

The Public Health and Well Being Act 2008 took effect on 1 January 2010.

In accordance with the Act, a Council has a duty to remedy as far as is reasonably possible all nuisances existing in its municipal district. Complaints related to wood smoke are generally referred to an Environmental Health Officer of the relevant local council.

FIGURE 1: FLUE TERMINATIONS

Source: [AS/NZS 2918](#)



Note:

Figure 1 is a guide to flue terminations only. See [AS/NZS 2918](#) for other requirements such as clearances, heat shielding, hearth requirements and flue cowls, etc.

REFERENCES

For more information on:

CORRECTLY OPERATING A SFH

- Visit the EPA Victoria website at: www.epa.vic.gov.au/your-environment/air/wood-burning-and-air-quality

WASTE MANAGEMENT POLICY (SOLID FUEL HEATING)

- Read the following Gazette online: www.gazette.vic.gov.au/gazette/Gazettes2004/GG2004S174.pdf

PUBLIC HEALTH AND WELLBEING ACT 2008

- Visit the Department of Health website: www.health.vic.gov.au/phwa/