

DRAFT

Code of Practice for

**Environmentally Responsible
Wood Heater Use**

FOR

PUBLIC CONSULTATION

June 2005



Public Consultation

The EPA seeks your views regarding the *Draft Code of Practice for Environmentally Responsible Wood Heater Use* and would appreciate your comments by Friday 12 August 2005.

All submissions received by the EPA will be acknowledged and treated as public documents unless provided in confidence, subject to the requirements of the *Freedom of Information Act 1991*, and may be quoted in EPA reports.

You may provide your comments on line at the EPA Consultation web site—www.epacomment.sa.gov.au—or you can forward them by mail, fax or e-mail to:

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SUMMARY

The *Code of practice for environmentally responsible wood heater use* (the Code) has been developed to address the issue of wood smoke, its odour, and its impact on the community and the environment. This Code prohibits the supply and sale of wood heaters that do not comply with current Australian and New Zealand emission standards. It also promotes responsible and efficient wood heater use and provides a process for neighbours and administering agencies (such as councils) to deal with heaters that are causing smoke or odour nuisance.

INTRODUCTION

Wood heaters can be a major source of pollution and during winter they can produce as many particle emissions as cars. Wood smoke is an environmental nuisance that can affect people's health and the enjoyment of their residence. Burning wood produces particles, particularly those smaller than 10 micrograms (called PM₁₀), which can affect people with respiratory (breathing) and cardiovascular (heart) illnesses. Wood smoke also contributes to the pollution haze that is sometimes evident particularly after a still, winter night.

Wood heaters that are correctly operated, and are manufactured and installed in accordance with Australian Standards, use less wood and produce fewer emissions than non-compliant ones.

History

Since 1992, Australian Standards have been in place to improve the performance of wood heaters. The first standard for testing wood heater emissions was introduced in 1992. Wood heaters made to the standard emitted no more than 5.5 grams of particles per kilogram (g/kg) of fuel burnt. In 1999, the standard was revised and published as the joint Australian and New Zealand Standard AS/NZS 4013:1999 *Domestic solid fuel burning appliances—Method for determination of flue gas emission*, and the emission factor for wood heaters was reduced to 4 g/kg. It applies to wood heaters (including those fitted with water heating devices) with a heat output of 25 kilowatts (kW) or less. It does not apply to masonry fireplaces, cooking stoves, central heating appliances, or appliances for water heating only.

The Northern Territory and South Australia are the only Australian jurisdictions without wood heater legislation. Currently in South Australia, importers or manufacturers could sell non-compliant wood heaters that don't meet the current standards. This Code includes provisions to prevent such sales.

Just banning the sale of non-compliant wood heaters is no guarantee of reduced pollution. Wood heaters must also be operated correctly in the home to maximise efficiency and minimise emissions.

To encourage correct wood heater use in the home, the Environment Protection Authority (EPA) conducts the 'Smoke is no Joke' community awareness program during winter. As part of the first campaign, wood heater users were given a free information pack that contained an instructional video or DVD, brochure and chimney checker magnet. The information packs have also been distributed to all local libraries in the state and to most South Australian councils.

A survey conducted after the first campaign found that it was effective in making users more aware of issues associated with using their wood heater in the home. Of all South Australian wood heater users, 93% believed they were efficient operators but 69% did not check outside for smoke levels. The survey also found that more than half of all South Australian wood heater owners had never been exposed to information on how to use their wood heater efficiently.

WHAT IS AN EPA CODE OF PRACTICE?

An EPA code of practice is a document designed to regulate and provide advice on an activity or issue that has the potential to cause environmental harm. Therefore, a code describes what your responsibilities are for minimising the risk of your actions causing harm to the environment. Meeting the requirements of a code will also help you comply with your obligations under the *Environment Protection Act 1993* (the Act) and other environmental legislation such as Environment Protection Policies (EPPs). The EPA consults extensively with stakeholders and the community when developing or altering a code of practice. Codes are not necessarily restricted to one particular environmental issue and may deal with a range of environmental topics.

Environment Protection Act 1993

The Act provides for the protection of the environment and defines the EPA's functions and powers. The Act promotes ecologically sustainable development and the use of the precautionary principle to minimise environmental harm. It also requires that polluters bear an appropriate share of the costs and responsibilities of protecting the environment from their activities. The Act makes you responsible for minimising harm to the environment that may result from your actions.

How a code of practice is enforced

Duty of care

The Act requires a general environmental duty of care, specified under section 25, which states:

A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.

Smoke and odour from burning wood is a form of pollution and it may cause environmental harm.

When determining the measures that are reasonable and practicable for a specific situation the Act requires consideration of:

- the nature of the pollution and the sensitivity of the receiving environment
- the financial implications associated with applying a measure
- the state of technical knowledge about appropriate measures and the likelihood of that knowledge being successfully applied.

Assessments of environmental harm include consideration of:

- the degree and scale of impact
- the health and safety of people
- property damage
- unreasonable interference with the amenity of an area.

A code of practice published by the EPA defines the standard of care likely to be required in order to comply with the general environmental duty. EPA codes provide flexibility so this duty may be more readily applied in a range of circumstances.

Regulatory enforcement options

Any person appointed as an authorised officer under the Act may issue an Environment Protection Order (EPO) to achieve compliance with the general environmental duty as required.

A person to whom an EPO is issued must comply with that order. Should they contravene the conditions of the order, the Act provides monetary penalties that can be issued¹.

Administering agencies such as councils can appoint authorised officers and those officers have delegations to issue orders under the Act.

AIM OF THIS CODE

This Code has been developed to:

- ensure that only wood heaters which comply with current emission standards are sold in South Australia
- ensure that new compliant wood heaters are installed in accordance with the current Australian Standard and the Building Code of Australia
- educate wood heater users to correctly use their heaters to maximise efficiency and minimise wood smoke and odour emissions
- give neighbours and administering agencies mechanisms for resolving wood heater disputes.

¹ Refer to the Act to determine the divisional penalties and expiation fees that apply.

RESPONSIBILITIES

The following responsibilities represent the duty of care provisions of the Act. An EPO can be issued for breaches of the following responsibilities.

Responsibilities of wood heater manufacturers and importers

A wood heater manufacturer or importer must ensure that each heater is manufactured and labelled in accordance with the requirements of AS/NZS 4013 and has obtained a certificate of compliance for that heater.

Responsibilities of wood heater retailers

A wood heater retailer must ensure that all wood heaters sold comply with AS/NZS 4013. This applies to new and second-hand wood heaters.

Responsibilities of wood heater installers

All wood heaters must be installed in accordance with the requirements of AS/NZS 2918 and the Building Code of Australia.

Responsibilities of wood heater owners

A person must only buy a wood heater that complies with AS/NZS 4013 and must ensure it is installed in accordance with AS/NZS 2918 and the Building Code of Australia.

A person must not sell a wood heater that does not comply with AS/NZS 4013.

Responsibilities of wood heater operators

Wood heater operators must not burn wet or unseasoned (not fully dried) wood, painted wood, treated timber or any other substance in a wood heater that is not wood unless specified by the wood heater manufacturer.

Wood heater operators must use their heaters in accordance with the home wood heating checklist (see later in this code).

Responsibilities of firewood suppliers

Firewood suppliers must not sell wood that has been painted, soaked in oils or treated with preservatives such as copper chrome arsenate (CCA) or creosote, or any other chemical.

COMPLAINT RESOLUTION PROCEDURE

Methods of dealing with wood heater disputes between neighbours

If a neighbour's wood heater is producing smoke or odour that is unreasonably affecting the enjoyment of your property, you can do something about it. This type of complaint can usually be resolved without the need for intervention by an authorised officer, which can be a lengthy and costly process.

Neighbours should resolve the issue between themselves or with the help of mediation services if possible. These services can be found in the Yellow Pages under 'Mediators'.

Tell your neighbour what the problem is

You may find that your neighbour is unaware that their wood heater is affecting your property.

Give them a copy of the *free* helpful tools available from the EPA or Australian Home Heating Association (AHHA) (see Appendix 1).

Case study 1

Bob believes the smoke from his neighbour Charlie's wood heater is entering his property and preventing him using his backyard. At times, odour from the wood heater is also noticeable inside the house.

Solution

Bob contacts the EPA and receives the helpful tools package including the *Hot tips* brochure, *Chimney checker* and the DVD *Clear skies: Getting the most out of your wood heater*. Bob then visits Charlie and explains the situation and gives Charlie the helpful tools. Charlie follows the complaint resolution procedure and determines that the wood he is using is not seasoned (dried) properly. He contacts the AHHA which recommends a reputable firewood supplier² in his area and he purchases properly seasoned wood for his heater.

Don't get angry

Anger, frustration and fear can affect how we react to annoyance.

By confronting the issue immediately you can avoid the risk of adding to stress and even ill health. Less stress places you in a better frame of mind to constructively discuss your concerns with your neighbour. Most people are responsible and willing to help if asked.

Approaching your neighbour

Be calm, not angry; focus your discussion on the issue not the person. Help your neighbour to resolve the issue.

² A reputable firewood supplier is defined in the glossary.

If approached by a neighbour

Don't be defensive or offended. Remember—they are not there for a personal attack, it is 'the issue' that they are concerned about. Be friendly and work with your neighbour to find a solution.

Read through the helpful tools, watch the *Clear skies* DVD/VHS, go through the checklist and determine whether you can resolve the problem easily. Be prepared to seek professional technical advice from a body such as the Australian Home Heating Association and a reputable wood heater retailer.

Case study 2

Helen believes the smoke from her neighbour Peter's wood heater is entering her property and preventing her using her backyard. At times, odour from the wood heater is also noticeable inside the house.

Solution

Helen contacts the EPA and receives the helpful tools package including the *Hot tips* brochure, *Chimney checker* and the DVD *Clear skies: Getting the most out of your wood heater*. Helen then visits Peter, explains the situation and gives Peter the helpful tools package.

Peter follows the complaint resolution procedure and determines that, despite his meeting the requirements of STEPS 1-9 of the checklist, Helen still observes smoke from the heater entering her property. Peter contacts the AHHA for further advice.

The AHHA recommends a wood heater retailer in the local area who inspects the wood heater and heater operating practices in Peter's home. The retailer finds that the chimney is below the recommended height and has a restrictive cap on top of the flue. She recommends that the flue be extended by half a metre and a vertical discharge flue installed to allow the upward discharge of smoke and gases.

Mediation services

Sometimes both parties choose to seek assistance in resolving a dispute through free mediation that includes an interpreter service (look in the Yellow Pages under 'Mediators').

If you are still unable to resolve this issue with your neighbours, you may choose to refer the matter to your council or take civil action under the Act.

Council intervention

In some instances a council, as an administering agency, may investigate and resolve a wood heater complaint within its jurisdiction after neighbours have demonstrated that they have been unable to resolve the issue between themselves or with the help of mediation services.

Case study 3

Michael recently built a house and finds that smoke from his neighbour's open fireplace is entering the house through windows that are almost in line with the top of the chimney. Smoke and odour is also quite noticeable inside the house.

Solution

Michael contacts the AHHA and receives the helpful tools package. He then visits his neighbour Jane, explains the situation and hands over the helpful tools package.

Michael and Jane follow the complaint resolution procedure and determine that, despite Jane being a good heater operator, odour from the fireplace is still noticeable in Michael's house. Jane suggests that Michael should have considered the relative positions of the houses and the existing chimney when he designed and built his house.

They agree to meet with a mediator. Both come to accept their contributions to the problem. Jane is not able to improve the situation by changing the chimney height and her open fire will always have the potential to cause an environmental nuisance to Michael. She agrees to use another form of heating and Michael agrees to contribute to the initial costs of the changeover.

Civil action

If the parties have been unable to resolve the issue informally through negotiation or mediation, either party can take civil action (under section 104 of the Act) through the Environment, Resources and Development Court.

Case 4

Steve believes smoke from his neighbour's wood heater is entering his property and notices that the heater seems to be billowing dark, smelly smoke a lot of the time.

Solution

Steve contacts the AHHA and receives the helpful tools package. He then visits his neighbour, explains the situation and gives him the helpful tools package. His neighbour takes the information but refuses to discuss the matter with him, despite Steve contacting him on a number of occasions in a polite and friendly manner.

Steve seeks help from mediation services but his neighbour will not attend the scheduled meetings. He then contacts his council and explains the issue and details his attempts to rectify the situation. The council agrees to investigate the complaint.

A council officer authorised under the Act determines that the neighbour is operating the wood heater in a manner that is causing an environmental nuisance. The situation is dealt with according to the process. The neighbour is ultimately served with a permanent order that prevents him from operating the wood heater until such time as he is able to prove that the heater is no longer causing environmental nuisance.

HOME WOOD HEATING CHECKLIST—PART ONE

Before you buy

Buy the right sized heater. A model that is too large for the room will have to be turned down too often, reducing the efficiency of the heater, creating smoke, and promoting the build-up of creosote in the flue.

Buying a model that is too small will not effectively heat your home. It can also shorten the life of your heater by operating it at full fire all the time.

When installing the wood heater ensure that the chimney is high enough for the smoke not to impact on neighbours.

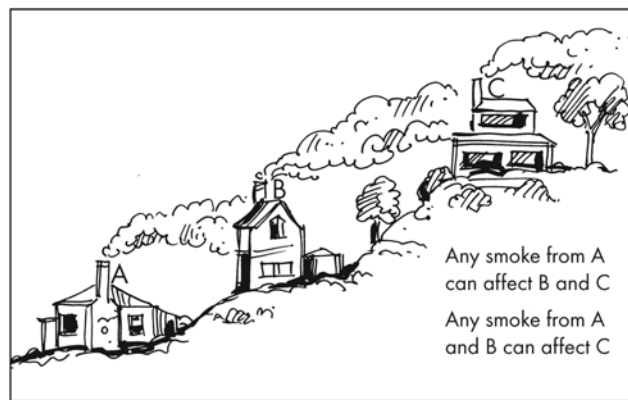


Figure 1. Smoke from house A could affect houses B and C.

If another building, or a solid mass such as the side of a hill, is closer than 15 metres, ensure the chimney is at least 1 metre higher than the building or hillside. In some areas, it may not be practical to install and use a wood heater because the chimney would need to be very high to achieve this minimum clearance.

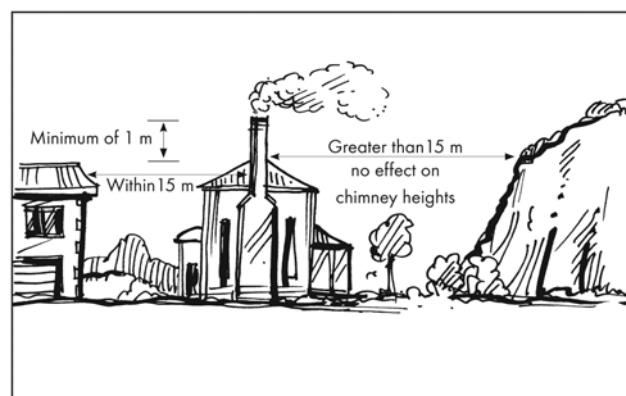


Figure 2. The flue should be 1 metre taller than all structures and solid masses within 15 metres.

Don't fit a rain protector cap to the top of your chimney as it restricts the upward flow of the gas and smoke. Install a vertical discharge flue instead.

Seek professional technical advice from a body such as the AHHA to ensure you get the right wood heater for your home.

HOME WOOD HEATING CHECKLIST—PART TWO

This checklist is designed to help you identify reasons why your wood heater may be causing an environmental nuisance in your neighbourhood. By going through this checklist, you might be able to resolve your wood heater dispute and save money on running costs.

STEP 1: Go outside and check your chimney. If you can still see smoke coming from your chimney 20 minutes after you started the fire, there is a good chance that you are not operating it correctly and your wood heater is not operating at its full potential.

Be prepared to follow the rest of the steps in this checklist if your wood heater produces smoke and odour continuously for than two minutes, or for more than three minutes in any five-minute period, excluding the first 20 minutes immediately after the fuel in the heater was lit.

STEP 2: Have you read through the helpful tools package and watched the *Clear skies* DVD/VHS?

YES	GO TO 3
NO	Do it—it will help you identify the causes of excessive smoke and odour emissions and enable you resolve your wood heater complaint

STEP 3 Do you start and operate your heater in accordance with the *Clear skies* DVD/VHS?

YES	GO TO 4
NO	By watching the <i>Clear skies</i> DVD/VHS and reading the information in the helpful tools package, you will reduce the amount of smoke and odour your wood heater produces and save money on running costs.

STEP 5: Is your firewood stored under cover and stacked loosely to allow air circulation?

YES	GO TO 6
NO	Move your firewood to under-cover storage and make sure it is well ventilated to maximise drying.

STEP 6: Are you burning dry firewood? When two pieces are banged together do they produce a 'clacking' sound?

YES	GO TO 7
NO	If your firewood produces a 'clunking' rather than a 'clacking' sound, it is not dry enough to be used as firewood. More curing is required. At least 18 months curing is appropriate for freshly cut wood. For the present you will need to purchase some dry firewood.

STEP 7: Has the flue been cleaned of residual creosote and other deposits within the previous 12 months?

YES	GO TO 8
NO	The flue may require cleaning by a licensed chimney sweeper. Contact the AHHA for a list of chimney sweeps in your area or look in the Yellow Pages under 'Chimney sweeps'.

STEP 8: Was the wood heater installed by a licensed tradesperson in accordance with the Building Code of Australia and the work inspected by the council?

YES	GO TO 9
NO	The wood heater may require inspection to ensure it complies with installation and safety standards. Contact the AHHA for further advice.

STEP 9: Have you gone outside and checked your chimney again? Does your wood heater still produce smoke 20 minutes after you started the fire?

YES	GO TO 10
NO	GO TO 14

STEP 10: If you followed STEPS 1 to 9 and, 20 minutes after the fuel in the heater was lit, your wood heater is still smoking and producing noticeable odour for more than two minutes, or for more than three minutes in any five minute period, it could be causing an environmental nuisance. You will need to seek advice from the AHHA and go to STEP 11.

STEP 11: Does the flue have a restrictive cap that can impede the upward flow of smoke?

YES	The flue cap may need to be replaced with a vertical discharge or 'H' type cowl to allow the upward discharge of smoke and gases. Seek advice from the AHHA or a wood heater retailer in your area.
NO	GO TO 12

STEP 12: Is the flue height outlet at least 1 metre above the apex of the premises and any other structure within 15 metres?

YES	GO TO 13
NO	The flue height may need to be raised. Seek advice from the AHHA or a wood heater retailer in your area.

STEP 13: Is the wood heater compliant with Australian Standard 4013? All AS 4013 wood heaters carry a compliance plate.

YES	GO TO 14
NO	The wood heater may need to be replaced with an AS 4013-compliant model and the installation to be undertaken in accordance with the requirements of the Building Code of Australia.

STEP 14: You have rectified all issues identified using the checklist. Are you able to resolve this issue with your neighbours?

YES	END
NO	Find a local free mediation service in the Yellow Pages under 'Mediators' and start the mediation process.

STEP 15: Has your neighbour joined the mediation process and have you resolved your dispute?

YES	END
NO	Contact your local council.

STEP 16: Has the council been able to resolve the dispute?

YES	END
NO	Consider civil action.

Civil action

If the parties have been unable to resolve the issue informally through negotiation or mediation, either party can take civil action (under section 104 of the Act) through the Environment, Resources and Development Court.

Note: when seeking ways for neighbours to live in harmony, the EPA advises that legal action should only be considered as a last option as it can be a lengthy and costly process.

For further advice on taking civil action, see www.epa.sa.gov.au/pdfs/info_civil_remedies.pdf.

DEALING WITH WOOD HEATER DISPUTES—OFFICERS AUTHORISED UNDER THE ACT

When councils investigate a wood heater complaint, council officers authorised under the Act can quickly and easily validate or dismiss an environmental nuisance complaint using the following criteria. For the purpose of this code, environmental nuisance is deemed to occur if an authorised officer, using their senses, is of the opinion that:

smoke or odour from a wood heater is crossing the property boundary of the place occupied by the complainant:

(i) continuously for a period of more than two minutes; or

(ii) for more than three minutes in any five-minute period

excluding the first 20 minutes immediately after the fuel in the heater was lit.

Section 139(4) of the Environment Protection Act states that:

In any proceedings for an offence against this Act where it is alleged that the defendant caused an environmental nuisance by the emission of noise, smoke, dust, fumes or odour, evidence by an authorised officer that he or she formed the opinion based on his or her own senses—

(a) that noise, smoke, dust, fumes or odour was emitted from a place occupied by the defendant and travelled to a place occupied by another person; and

(b) that the level, nature or extent of the noise, smoke, dust, fumes or odour within the place occupied by the other person was such as to constitute an unreasonable interference with the person's enjoyment of the place,

constitutes proof, in the absence of proof to the contrary, that the defendant caused an environmental nuisance by the emission of the noise, smoke, dust, fumes or odour.

Police officers use the same provisions to assess environmental nuisance associated with domestic noise issues.

Home inspection service offered by the AHHA

The AHHA offers a free wood heater inspection service to councils. An AHHA representative will only conduct the inspection in conjunction with a council officer.

The Consumer/Council Inspection Service form is included at the end of this document.

APPENDIX 1. HELPFUL TOOLS

A number of free tools are available to help you use your wood heater correctly, minimise harmful wood smoke pollution and save money.

Any of these helpful tools can be yours if you order by contacting the EPA on (08) 8204 2004, by e-mail epainfo@epa.sa.gov.au, or ring the Australian Home Heating Association on (08) 8351 9288.

- *Code of practice for environmentally responsible wood heater use*
- *Hot tips*—This brochure is a comprehensive guide to using your wood heater to maximise the heat obtained from your wood, keep your costs down and minimise wood smoke pollution.
www.epa.sa.gov.au/pdfs/hot_tips.pdf
- *Chimney checker*—Compare the smoke coming from your chimney with the photos on this card. Remember—your wood heater should not smoke 20 minutes after start-up.
www.epa.sa.gov.au/pdfs/check_your_chimney.pdf
- *Clear skies: Getting the most out of your wood heater*—DVD or VHS
- EPA web site—www.epa.sa.gov.au/woodsmoke
- EPA information sheet—*Wood-burning heaters and how to use them effectively*
www.epa.sa.gov.au/pdfs/info_wood.pdf
- *Civil action information sheet* www.epa.sa.gov.au/pdfs/info_civil_remedies.pdf.

GLOSSARY

Australian/New Zealand Standard (AS/NZS) 4013:1999 *Domestic solid fuel burning appliance—Method for determination of flue gas emission*, published by the Standards Association of Australia as amended, specifies a test method for determining the rate of particulate emission from wood heaters and is complemented by the following standards:

- **AS/NZS 4014:1999 *Domestic solid fuel burning appliances—Test fuels*** specifies the test fuel to be used in the performance and emission test standards.
- **AS/NZS 4012:1999 *Domestic solid fuel burning appliances—Method for determination of power output and efficiency*** is used for measuring the heat output rate (power) and efficiency of residential wood heating appliances. It also requires appliance labelling of the average efficiency measured at high, medium and slow burn rates and the average heat output rate for the high burn rate cycle.
- **AS/NZS 2918:2001 *Domestic solid fuel burning appliances—Installation*** does not permit untested, unencased flue systems beyond the ceiling or wall penetration of the room where the appliance is installed. The requirements for flue-system construction and installation have been revised to more strictly control their manufacture and installation. The standard also contains additional requirements for fireplace insert appliances, zero clearance (inbuilt) appliances, cathedral ceiling penetrations and flue exits.

This standard specifies requirements for the installation of domestic wood heaters which can be fully assembled prior to being transported to the installation site.

This code refers to the current version and all forthcoming versions of the above Australian and New Zealand standards without requiring amendment.

Australian Home Heating Association (AHHA) is the industry body which represents the manufacturing, retailing, installation and maintenance, and firewood sectors of the home heating industry. Contact them on (08) 8351 9288 or www.homeheat.com.au.

Authorised officer is a person appointed to be an authorised officer under Division 1 of Part 10 of the *Environment Protection Act 1993*.

Building Code of Australia is produced and maintained by the Australian Building Codes Board on behalf of the Australian Government, and state and territory governments. The Building Code of Australia has been given the status of building regulations by all states and territories. It contains technical provisions for the design and construction of buildings and other structures, covering such matters as structure, fire resistance, access and egress, services and equipment, and certain aspects of health and amenity. For more information see www.abcb.gov.au.

Certificate of compliance means a certificate issued by a body that certifies in relation to a solid fuel heater of a particular make and model that-

- (a) a wood heater of that make and model has been tested at a laboratory registered by the National Association of Testing Authorities in accordance with the test procedure specified in AS/NZS 4013; and

(b) the laboratory is satisfied that the wood heater tested had an applicable particulate emission factor not greater than the maximum allowable particulate emission factor specified in AS/NZS 4013.

Environment Protection Authority of South Australia (EPA) can be contacted on (08) 8204 2004, epainfo@epa.sa.gov.au or www.epa.sa.gov.au.

Reputable firewood supplier is one that operates in accordance with the following principles by:

- not knowingly selling firewood that is taken from an illegal source
- ensuring firewood is sourced in accordance with sustainable management principles to protect biodiversity and ecosystems
- ensuring firewood is not collected from areas where collection may have a significant impact on listed threatened species or listed threatened ecological communities and is collected in a manner that conforms to regional vegetation and catchment management/natural resource management plans and other relevant plans
- ensuring firewood is sourced from harvesting operations in plantations and sustainably managed native forests that are regenerated and regrown, or from residue from manufacturing processes or salvage operations *where practicable*
- only selling seasoned firewood with an internal moisture content of less than 25% (dry weight) *where practicable* (unseasoned wood that is sold should be accompanied by advice on the time at which the wood will be sufficiently dry to burn)
- ensuring firewood is not sold if it has been painted, soaked in oils or treated with preservatives such as copper chrome arsenate (CCA), creosote or any other chemical.

These requirements are based on the principles of the *Voluntary Code of Practice for Firewood Suppliers*³.

Wood heater means a domestic wood heater as defined in AS/NZS 4013.

It does not apply to masonry (open) fireplaces, cooking stoves, central heating appliances or water heating only appliances.

³ Still in draft form at the time of publishing