Fact Sheet

Australian Home Heating Association Inc

AUSTRALIAN HOME HEATING ASSOCIATION INC.

The Australian Home Heating Association Inc (AHHA) is the peak industry body representing the manufacturing, retailing, installation, maintenance and firewood sectors of the wood heating industry nationwide.

Made up of 250 members, representing large companies, individuals and small businesses, the Association is dedicated to an ecologically sustainable industry serving the best interests of the Australian community and the members of the AHHA. The AHHA is committed to improving air quality through continued reduction in the emissions of wood smoke. This can be achieved through improved technology and informing users of correct operation of their wood heater.

Australia has some of the toughest emission standards in the world for wood heating.

The AHHA is also committed to an ecologically sound supply of firewood through the support of Landcare programs, firewood plantations, and better integration of conventional logging operations. The AHHA supports the removal of polluting older style wood heaters and open brick fireplaces, but encourages the continuation of wood heating as a viable and environmentally friendly home heating option, through the use of clean-burn wood heaters.

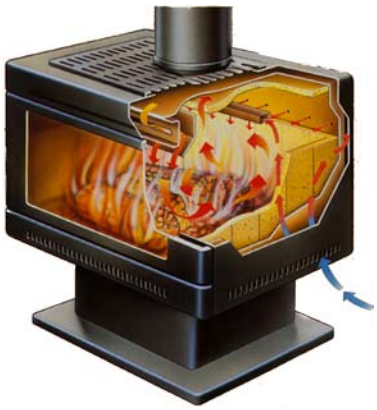
Q: HOW ENVIRONMENTALLY FRIENDLY ARE WOOD HEATERS?

A: Modern controlled combustion (clean burning) wood heaters are up to 80 per cent more efficient than older wood heaters and open brick fires. There are 240 controlled combustion (clean burning) models in Australia. These wood heaters are of great economic benefit to families because they can heat an entire house.

WHAT DOES CLEAN BURNING MEAN?

Clean burning wood heaters slow down the exit of smoke through a secondary combustion process. This process generates more heat from each log and reduces the amount of smoke and particles going up the flue and into the environment. New wood heaters with clean burn systems greatly reduce CO_2 emissions and require less fuel, gaining more energy out of the wood. While old open fireplaces lose as much as 80% of their heat via the chimney, clean burn systems lose around 15%.

Image showing clean burn combustion process



BE RESPONSIBLE

To achieve clean and efficient wood heating, correct operation is just as important as installing a wood heater that meets the Australian Standard for wood heater emissions. The AHHA recommends the following tips for proper use of your wood heater:

The Fire:

- Use kindling wood, paper and firelighters to get the fire started. Add larger pieces of wood only after a bed of red-hot coals has been established.
- Build small fires regularly and provide plenty of air rather than one large, smouldering fire with the air controls turned down.
- Don't close air supply totally overnight – a little air avoids a lot of smoke.
- Allow full air for 15-20 minutes after each reload.
- Don't pack your fire and leave it on a low setting when you go out.
- Most heaters burn better with three or four smaller logs rather than one or two large ones.

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WOOD BURNING TIPS

- Burn only dry, well-seasoned wood
- Store wood in a criss-cross fashion, under cover.
- Never use petrol, kerosene or oil to start the fire.
- Buy wood from a reputable supplier.
- Purchase early, so wood can air dry.
- Store wood for up to six months.

THE FLUE:

- Check your flue for smoke – there will be some smoke when you start and reload your fire but this should last no longer than 10-20 minutes.
- Make sure your flue complies with the minimum requirements – at least one metre higher than any other structure within three metres.

GENERAL TIPS:

- Insulate your home, closing doors and curtains to conserve heat but allowing enough fresh air for efficient combustion.
- Make sure the heater is the right size for its purpose and is properly installed by a person qualified to do so.
- Have your wood heater serviced each year in spring or early summer.

CHOOSING A WOOD HEATER

Ensure your choice of wood heater has been manufactured to all the rigorous Australian Standards applicable to wood heaters. All wood heaters manufactured since 1992 must adhere to AS/NZS 4013 – the Australian Standard for emissions – ensuring they are clean burning and environmentally responsible.

Q: WHERE CAN I GET HELP?

A: Your nearest AHHA retail member will know your local conditions and, in most cases, can visit your home and give on-the-spot advice on the best size and type of heater for your home and budget. Call (08) 8351 9288 to find your nearest AHHA member.

CONSIDER YOUR HEATING NEEDS

Output of heat is rated in kilowatts (kW). The amount of kilowatts you need will depend on where you are in Australia, the size of your home, how many windows there are, and if you have home insulation. For example, an 18 square metre house that is well insulated will require a lower output than the same sized home with no insulation. Heaters should be sized to accommodate average, rather than extreme, temperatures.

HEAT OUTPUT

Wood heaters are available in a wide range of models that vary in output from small units intended to heat a single room, to very large units with the capacity to heat relatively large houses. The final selection will depend upon a number of factors: e.g. house design, insulation levels and the length of time the heater is to be operated. Larger heaters are best suited to homes with an open plan design where heat can be readily and effectively circulated to other areas of the home. Most new wood heaters for sale in Australia are tested to determine their output, energy efficiency and particle emissions levels under Australian/New Zealand Standards AS/NZS4012 and AS/NZS4013.

ENSURE YOUR WOOD HEATER HAS BEEN TESTED AND CERTIFIED TO THE APPROVED STANDARDS AS/NZS 4013 BEFORE YOU BUY

DESIGN

Wood heaters provide heat in one or a combination of the following ways:

(A) RADIATION
(B) CONVECTION
(C) FAN FORCED AIR DISTRIBUTION

There are no clear performance differences between cast iron or plate steel construction, a painted or enamelled finish, however, there are important differences in heat delivery. The main ways are by direct radiation, convection or a combination of both.

FREESTANDING RADIANT WOOD HEATERS

Radiant wood heaters transfer about two-thirds of their heat output by radiation and about one-third by convection. They have very hot surface temperatures and heat by sending their heat out in all directions. The surface of objects such as walls, floors, ceilings, furniture and people that face the wood heater, are warmed directly by the radiated heat. Radiant wood heaters warm quickly so if you sit close to them you can feel the heat even if the whole room hasn't yet warmed up. However, they have uneven heat distribution i.e. it is warmer closer to the heater and cooler further away.

■ Suitable fire guards should always be used with radiant wood heaters.

FREESTANDING CONVECTION HEATERS

Convection wood heaters have a ventilated casing around the firebox which is either tiled or fabricated from metal. Heat is distributed by convective

currents, with cooler air being drawn in to rise between the firebox and the outer casing, keeping the outside of the unit relatively cool. Convection heaters transfer about two-thirds of their heat output by convection and about one third by radiation. Sometimes electric fans may be built in to increase the convective air flow. Because warm air rises, these heaters tend to heat the room from the ceiling down, and as a result it takes longer for the warmth to be felt. Reversible ceiling fans can help overcome this. Convection wood heaters generally provide a fairly even heat throughout a room and because their exterior surfaces are lower in temperature than radiant models, they are less likely to cause burns from direct contact. A fireguard is still recommended.

Convection wood heaters generally provide even heat throughout a room.

FIREPLACE INSERTS

A fireplace insert is a wood heater specifically designed for installation within a masonry fireplace. Inserts are commonly used to convert open brick fireplaces, which are usually unable to produce sufficient heat. This type of conversion ensures that most of the heat is delivered to the room instead of being trapped in the masonry structure, or wasted via the chimney. Older installations allowed the emissions to exit directly into the chimney cavity. AS/NZS 2918 now requires a stainless steel flue be installed from the flue collar of the appliance to the top of the chimney greatly improving performance. The evolution of fireplace insert designs together with improved installation has enhanced performance to the extent that today's fireplace inserts are almost as efficient as freestanding wood heaters.

When considering the installation of a fireplace insert into an existing masonry chimney the following safety checks should be carried out:

- Check the general condition of the existing chimney. Just because it has been there for decades does not mean it is safe to install a wood heater.
- A full inspection of the chimney should be carried out prior to installing a heater. This inspection should:
    i. Ensure the existing fireplace surround is correctly sealed, with no gaps to the firebox.
    ii. Include an examination of the chimney both inside and out (outside where accessible) for cracks and defects. Any defects found should be repaired prior to installing a heater.
    iii. Ensure all timber near the chimney is at least 50 mm clear of the chimney. Any failings must be rectified prior to installing a heater. It is also advisable to have the chimney swept before installation.

HEAT CIRCULATING FIREPLACES

Another type of insert commonly known as a heat circulating fireplace can also be installed into an open masonry chimney and will provide a greatly improved performance and efficiency when compared to an open fireplace. They do not however, provide the same combustion efficiency as freestanding and fireplace inserts. This type of heater cannot provide an 'overnight burn' as it has an open (unsealed) front.

INSTALLATION STANDARD, AS/NZS2918 REQUIRES A STAINLESS STEEL FLUE BE INSTALLED ON ALL APPLIANCES FROM THE FLUE COLLAR OF THE APPLIANCE TO THE TOP OF THE CHIMNEY. THE RESULT IS BETTER PERFORMANCE AND SAFETY.
NB This standard is not applicable to appliances with flue outlets greater than 100,000mm^2.

BUILT-IN APPLIANCES

A built-in appliance is designed to be in contact with or built into a heat sensitive structure within a building. These types of appliances must be tested in a laboratory in accordance with AS/NZS 2918 to ensure their compliance with safety requirements. There is no such thing as a 'standard' (untested) built-in appliance. As each model or appliance may have markedly different installation clearances, it is extremely important to follow the manufacturer's installation instructions, which are based on laboratory test results.

POSITIONING YOUR HEATER

The location of your heater is down to personal preference. However, for ease of refuelling as well as aesthetic enjoyment, wood heaters should ideally be placed in frequently used areas such as the kitchen or family room. The location should permit the use of an interior flue which will greatly enhance the draught and performance compared with an exterior flue. If your objective is to heat more than one room, centrally located appliances are usually most effective. The impact of doorways, stairwells, and distance to heat sensitive objects also need to be considered before installation.

Additional issues:

- The flue system must run inside the building envelope (inside the heated space) so the air and flue gases stay at least as warm as the air in the house until they are expelled.
- The flue system must be tall enough to clear any obstacles that affect air flow so it can produce stable draught and is not exposed to any adverse pressure caused by wind effects.

- The flue system must be the correct size for the heater and be suitably insulated.
- The flue system must rise vertically from the appliance. Offsets should be avoided as each change in direction creates a resistance to flow.
- The appliance and flue system must be well sealed as leaks make the system more vulnerable to adverse pressures.
- Your heater should comply with AS/NZS 4013 to ensure it produces low smoke emissions, and is less likely to smoulder when compared with older or second hand appliances. Appliances that smoulder are more likely to spill smoke into the home.
- When a wood heater is installed in a house that may be tightly sealed, it must have a balanced ventilation system. Exhaust-only ventilation, cause houses to be constantly depressurised, which is disastrous for any flue vented systems.
- The appliance should be operated by an informed user. Even certified wood heaters can be disabled by improper operation and a lack of maintenance.

COMPLIANCE PLATE

When purchasing a new wood heater you must ensure that it displays a compliance plate relating to the Australian Standard. The information on this compliance plate relates to heat efficiency and output. The best way to ensure the wood heater you buy displays this plate, is to simply ask your retailer to point it out to you.

SAFETY TIPS

- **Remember heaters get HOT so protect family members, pets and heat sensitive objects by avoiding direct contact with flames.**
- **Have your heater and flue installed to Australian Standards by an industry professional.**
- **Always position clothes, newspapers, kindling and other flammable materials a minimum of two metres from any wood heater.**
- **Store matches and lighters away from children.**

HELPING THE ENVIRONMENT

Trees are important, not only as a fuel source and a carbon sink, but also for all the environmental, social and Economic benefits they provide. The Australian Home Heating Association want to ensure that as a nation, we continue to produce sustainable forests. In order to do this we are a financial supporter of Landcare Australia. Through our sponsorship program we have planted over 40,000 trees and continue be involved in farm forestry projects. We contribute funds to Landcare from every wood heater sold by an AHHA member. That's why it's important to look for the AHHA and Landcare logos when buying a wood heater. If these logos are present then you are not only purchasing a great heating appliance that will keep you warm, but you will also be supporting the environment you live in.

Q: HOW DO I KNOW IF MY WOOD HEATER MEETS AUSTRALIAN STANDARDS?

A: All wood heaters manufactured since 1992 must adhere to the Australian Standards for wood heater emissions (AS/NZS 4013) ensuring they are clean burning and environmentally responsible. It is illegal to sell wood heaters that do not comply with AS/NZS 4013. The AHHA encourages consumers to replace wood heaters that were manufactured prior to 1992, and to look for the AHHA logo to ensure your new wood heater complies with current standards with minimal impact on the environment.

REMEMBER: HEAT YOUR HOME SAFELY AND WISELY AND YOU WILL ENJOY THE BENEFITS AND AMBIENCE THAT ONLY A ROARING FIRE CAN OFFER. HAPPY HEATING!

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