Warm up wisely

Getting the best out of your wood burner

This guide offers key information on how to enjoy your wood burner safely, get the best heat out of your firewood and decrease the amount of smoke being released into the air.

Many people burn wood as a source of heat and enjoyment. It's economical, renewable and can heat your home well, when used effectively.

The efficiency of wood burners varies. However, they are preferable to open fires, which actually draw heat from your home.

A wood burner or open fire that is not being used efficiently can produce excessive smoke, which wastes energy and your money, builds up dangerous creosote and creates air pollution. Poorly maintained wood burners and open fires can also be fire hazards.

As the owner of a wood burner it is your responsibility to make sure you manage it effectively so that it does not produce offensive or objectionable smoke or odour.

Each winter Environment Southland's pollution prevention team receives complaints about smoky chimneys.

The Pollution Response Hotline phone number is 0800 76 88 45.

Smoky air is a major health risk

Smoky fires affect everyone in the community. The air pollution they create is a major risk to people's health, especially:

- Babies and very young children
- Those suffering from cardiac or respiratory conditions, such as asthma
- Those with vascular complications from diabetes
- Frail, elderly people.

On top of that, excessive smoke from fires is unpleasant and detracts from people's wellbeing and the quality of their environment.

Air Pollution

Air pollution is a problem in both Invercargill and Gore during winter. At times it reaches alert levels, which means the level of small particles (PM_{10}) exceeds the national standards designed to protect human health. More than 90 percent of human-caused PM_{10} is a result of burning wood and coal in domestic burners.

The Government has set target deadlines for meeting the national standards for PM_{10} – for Gore, 1 September 2016 and Invercargill, 1 September 2020.

As a community we need to find ways to reduce our levels of PM_{10} to meet these targets. It is impractical to ban all wood burners, but we can change how we use them.

By operating our burners in ways that minimise smoke – which contains the harmful PM_{10} – we can all contribute to reducing air pollution and improving our air quality.

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Burn it right – burn it bright

Lighting your fire

- Open the air control.
- Put screwed up newspaper at the base.
- Criss-cross the newspaper with plenty of kindling.
- Add a few smaller pieces of wood.
- Light the newspaper in several places, starting from the back.
- Load wood loosely so air can circulate.
- Always use dry wood.

Once alight

- Keep the fire burning brightly.
- Keep the air control open for at least 30 minutes.
- Burn several smaller logs, rather than a single, large log.
- When adding more logs, fully open up the air control for 20–30 minutes.
- Ensure the air supply doesn't become blocked at the base by a badly positioned log.
- Don't bank your fire.
- Don't burn any rubbish.

Collecting and storing firewood

The quality of your firewood is a major factor in how well your wood burner operates, so the way you store it is vital. The moisture content of wood should be less than 25 percent.

- Think ahead and get your wood supply in summer.
- Allow freshly cut wood 8–12 months to dry out before use.
- Store firewood in a dry place with the top covered.
- Stack wood loosely off the ground ideally in a criss-cross pattern to allow air to circulate.
- Split big logs before stacking to help them dry out quicker.

Burn smarter

Here are some tips on keeping your fire burning efficiently so you get the best value from your firewood and really cut down the smoke.

- Burn only dry wood that has been split properly. Green wood is a major contributor of smoke and the creosote that clogs chimneys.
- If wood is damp or gets rained on, take small amounts inside to dry out before putting it on the fire.
- Burn fires bright and hot. A smouldering fire creates more smoke and less heat. If the glass front on your wood burner is coated with 'gunk', it means you are not burning your fire hot enough.
- After starting the fire, and whenever you add more wood, leave the air controls open for at least 30 minutes. This helps build up a good high temperature, which makes the wood burn well. Extended periods of smoky emissions occur if you turn down the air supply.
- Regularly remove the ashes from your burner or fireplace. Ashes are a fire hazard so be sure to store them appropriately – outside in a covered metal container placed in a safe area, away from the side of the house.
- If your wood burner is smoking excessively, get it checked. Make sure you know about your model of burner and how it operates. Ask a wood burner supplier if you are not sure.
- Allow your fire to burn out overnight. Banking fires causes excessive smoke and air pollution over long periods. Keep a supply of kindling handy to re-start your burner the next day.
- When there are only a few glowing embers left, build up your fire gradually. Putting too much wood on too soon will create a smouldering, smoky fire.
- Burn only wood. Coal, domestic rubbish, glossy paper, magazines and wrappers, plastic, disposable nappies, electrical cables, treated timber and fibreboard, rubber products and waste oils can produce harmful chemicals, creosote, offensive or objectionable smoke, and air pollution. They may also damage your wood burner.

For more great tips on reducing the smoke your fire produces, visit the Breathe Easy Southland website.

Handy chimney checker

A well maintained wood burner that is operated effectively will have bright swirling flames and glowing embers with little or no smoke coming from the chimney. Within 10 minutes of lighting or putting wood on your fire, any visible chimney smoke should, ideally, reduce to a heat haze or faint smoke.

It may take some practice to get the cleanest burn from your wood burner. When you have your fire going, brave the cold and go outside to check out the smoke coming from your flue.

- If your smoke looks like the picture at the top – congratulations! You're operating your wood burner effectively.
- If your smoke resembles that in the other pictures, your wood burner is contributing to air pollution and putting people's health and wellbeing at risk – you need to do something about it.

Know your wood burner

Wood burner size and installation

Most wood burners perform best at or close to their maximum output. If you often run your burner at low settings, your burner may be oversized.

If you are buying a new wood burner, or replacing one, it is important to ensure it meets emission standards and is the right size for the rooms that are being heated. It also needs to be installed correctly. The flue is an important component of the wood burner installation and needs to be long enough to draw sufficient air for proper combustion of the fuel.

Check with your local council or a wood burner retailer if you think your burner may not be correctly installed. A wood burner will perform better when located towards the centre of the home and not against an outside wall. Do your best to ensure your flue is not positioned where a neighbour will be affected by your smoke.

Wood burner maintenance

Keep your wood burner well maintained and serviced.

- Make sure the chimney or flue is cleaned every year. This helps your fire burn more efficiently. If your wood burner becomes difficult to start or puffs out smoke when you open the door, the flue is probably clogged with creosote and needs to be swept.
- Replace any broken fire bricks and keep your burner in good repair. DIY repairs are not recommended as they may cause fire safety problems and could affect your insurance cover.
- If your wood burner is more than 10 years old, it may need replacing. Consider cleaner heating options such as a heat pump, flued gas fire or pellet fire.

For a full list of approved low emission burners, visit the Ministry for the Environment website: www.mfe.govt.nz (search 'wood burners').

Insulation and other options

Without insulation you will lose about 42 percent of your heat through the ceiling, 24 percent through the walls and 10 percent through the floor. Remember that the floor is the coldest part of a room and children are the closest to it. Under-floor insulation also helps to stop moisture moving up into the house.

If you get your home correctly insulated you won't need as much heating. When building or renovating, consider the options for passive solar design and solar water heating – these can be very energy efficient.

Weekly Winter Air Quality Results

Environment Southland monitors air quality in Southland and reports the results for Gore and Invercargill each week during the winter months.

Want to know more?

To find out more about air quality please visit the Breathe Easy Southland website.