

Wood burning techniques

Winter air pollution

Burning wood and coal for home heating is the main source of winter air pollution in many Canterbury towns. Under the National Environmental Standards for Air Quality we must work together to reduce the number of high pollution occurrences to one per year by 2013. To do this, many woodburners and open fires will need to be replaced by cleaner burning appliances such as heat pumps, flued gas fires, pellet fires and low-emission woodburners. But cleaner burning techniques can also play a part.

Using a woodburner wisely

Using good burning techniques reduces air pollution from your chimney and saves you firewood.

Build your fire with plenty of newspaper and small dry kindling. Place another sheet of crumpled paper on top of the kindling. This will burn quickly and raises the temperature of your fire.

Light your fire at the front and close the door but leave unlatched. Once the kindling is burning brightly, add a few pieces of medium sized wood and latch the door closed. Ensure the air controller is fully open.

Take the 20-minute test

Is there still visible smoke coming from your chimney 20 minutes after lighting? If there is, your fire is not burning efficiently. Remember smoke is pollution and wasted fuel.

Once your fire is burning well, add just enough wood to get to a desired warmth. Adding too much wood will create too much smoke and can smother the fire. If your fire gets too hot, slide the air controller down to $\frac{2}{3}$; this will reduce the heat without creating too much smoke.

Try to keep your fire near the front of your fireplace. This will increase the efficiency of your fire. When you leave your fire to go to bed, stoke your fire but leave the air controller on full. Your home should hold the warmth of a burnt out fire overnight. But if it doesn't, it is still cheaper to use a small electric heater in the morning to restore warmth, or rebuild the fire.

Moisture content of firewood

Ideally the moisture content of firewood is around 15% (10-20%). Firewood with a high moisture content will cause a lot of pollution, will not burn very well and will not give you a lot of heat. Part of the heat generated by burning wet wood will be used to dry the wood first before it can burn. Properly dried wood can provide up to 40% more heat.

Firewood that is too dry will burn very quickly and is not economical.

You can get the moisture content of your firewood tested for free at the following locations:

- Environment Canterbury, Christchurch, phone 353 9007 or 0800 324 636 for an appointment
- Environment Canterbury, Timaru, phone 684 0500 or 0800 324 636 for an appointment
- Ashburton District Council, 5 Baring Sq West
- Waimakariri District Council, 215 High St, Rangiora (winter only)
- Kaiapoi Service Centre (in the public library), 125 Raven Quay, Kaiapoi (winter only)

If you want to avoid having to use wet wood, buy your wood early, preferably in spring. The wood will have the whole summer to dry properly.

Painted wood, treated wood (e.g., decking timber) and driftwood are not suitable to burn. Hazardous chemicals will be released when these types of wood are burned. Driftwood can also damage your wood burner due to the high salt content.

Wet wood (firewood with a moisture content over 25%) painted wood and treated wood are not allowed to be used as firewood in Canterbury and you may get a \$300 fine if you use them.

Please turn over

Buying and storing firewood

It is best to buy firewood in spring. Firewood merchants usually have an abundant supply at that time and you are less likely to get caught out with wet wood. Any wet wood will have the chance to dry out over summer if stored right.

When storing firewood, make sure the wood is covered and is stored in an aerated place (so not in an enclosed garage).

Inefficiency of open fires

Open fires are only 15% efficient meaning 85% of the wood and coal you use on an open fire goes up the chimney and only 15% is used to heat your home. They are also one of the most polluting forms of home heating. If you still use an open fire to keep warm, it may be time to look for more efficient and cleaner heating.

Insulation

The key to keeping warm is ceiling and underfloor insulation. Trying to heat a home with little or no insulation is like trying to heat a home with the windows open. Many older homes have little or no insulation, or the insulation may have deteriorated. Even newer homes will benefit from an extra layer of insulation.

Pollution hotline

For any complaints about smoky chimneys, call Environment Canterbury's pollution hotline 24/7 on 366 4663 in Christchurch or 0800 76 55 88 outside of Christchurch.

More information

For more information please contact Environment Canterbury on 03 353 9007 or 0800 324 636 or visit our website on www.ecan.govt.nz