

Wood burners and open fires

Good practice guide for operating wood burners and open fires

Many homes now burn wood as a source of heat and enjoyment. It's economical, renewable and can heat your home well, if used properly. A wood burner or open fire that isn't being used properly can produce excessive smoke, which wastes energy, and creates air pollution. Inefficient wood burners and open fires can also be fire hazards. While the efficiency of wood burners will vary, open fires will actually draw heat from your home and are very inefficient.

This guide offers plenty of information on how to safely enjoy your wood burner, get the best heat out of your firewood and decrease the smoke. By changing the way you use your fire you can make major pollution reductions and potentially prevent complaints from neighbours.

Why keep the air clear?

Smoke pollution affects everyone. It is harmful to the health of wood burner users and the health of others in the community. People who are more at risk are babies and very young children; those suffering from existing cardiac or respiratory conditions (such as asthma); those with vascular complications from diabetes, and frail, elderly people.

Excessive smoke from fires is unpleasant and detracts from people's well-being and happiness. Wood burners must be operated without causing smoke or odour nuisance to your neighbours.

Basic steps to remember when lighting a fire, make sure you:

- Use enough kindling
- Don't put too much firewood in at first
- Stack wood loosely in the firebox to allow air to circulate
- Never use wet or green wood
- Never burn anything other than dry untreated wood - no plastics, treated or coated wood should be used

Once the fire is alight, make sure you:

- Keep the fire burning brightly
- Keep the air control open for at least 30 minutes
- Burn two or three smaller logs rather than one single, large log
- If you add more logs, open the air control to ensure a continual burn of the logs
- Be careful not to block the air supply to the base of the fire by a badly positioned log
- Don't damp the fire down
- Let the fire burn out overnight
- Never burn rubbish on the fire

How smoky is your chimney?

In a well-maintained wood burner that is being operated correctly, visible smoke from the chimney will reduce to a heat haze or faint smoke within about 10 minutes of lighting or putting wood on the fire.

An efficient fire will have bright swirling flames and red glowing embers with little or no smoke coming from the chimney. It may take some practice to get the cleanest burn from your chimney.

The chimney/flue is an important component of the wood burner installation. It needs to be long enough to draw sufficient air for proper combustion of the fuel and high enough to let smoke and gases disperse.

Collecting and storing firewood

Good quality firewood is the key factor for a clean burning fire. The wood needs to be dry and well seasoned. Think ahead and get your wood supply in the summer. Freshly cut wood needs to be stored for 8-12 months to allow it to season properly for good burning. Stack it loosely off the ground in a criss-cross pattern to let dry air circulate around it. For best results store seasoned wood in a dry place with the top covered. Logs dry faster when split, so split wood into pieces 110mm thick before you store it away. Dry wood has large cracks in the end of the log while wet wood is heavy and makes a dull thud when two pieces are hit together.

How to burn smarter

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

- Only burn dry, well-seasoned wood that has been split properly. Green wood is a major culprit in the creation of smoke. It pollutes the air and generates soot that clogs your chimney.
- Don't use wood that has been rained on or is damp. If it got wet in the rain, take small amounts inside to dry out before putting it on the fire.
- Get your wood from a wood supplier who sells wood that was cut 12 months ago and is cut into 110mm logs.
- Only start the fire with paper, dry kindling or an approved commercially available fire lighter. Never use petrol, kerosene, charcoal or a propane torch. These can be extremely dangerous. A fire can get out of hand quickly if it is started with fuels other than wood.
- Burn fires bright and hot. A smouldering fire creates more smoke and less heat.
- Regularly remove ashes from the burner or fireplace. Store them outside in a covered metal container, in a safe area away from the side of the house to avoid creating a fire hazard.
- If the glass front on your wood burner is coated with soot, it means you are not burning your fire hot enough.

- If your wood burner is smoking excessively, get it checked. Make sure you know about your own model of burner and how it operates. Ask a HETAS member if you are not sure.
- After starting the fire leave the air controls open for at least 30 minutes. This helps build up a high temperature, which makes the wood burn well. Do this again when you add more wood. Extended periods of smoky emissions occur if you turn down the air supply and reduce the amount of air getting into the firebox.
- Don't bank up the fire overnight. Keep a supply of kindling handy to re-start the wood burner in the morning. Overnight burning does not add significant warmth to a well insulated home, but greatly increases polluting emissions. It is cheaper to use an electric heater in the morning than to keep a fire going all night.
- Don't put a full load of wood into a wood burner when there are only a few glowing embers as it causes excessive smoke for long periods. Build the fire up again first.
- Don't burn plastic, disposable nappies, electrical cables, painted or treated timber and particleboard, rubber products and waste oils. This is prohibited because they contain very harmful, polluting chemicals.
- Don't burn domestic rubbish, glossy paper or magazines and wrappers in your wood burner. They produce harmful chemicals and cause offensive or objectionable smoke.

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 (damped down), your burner may be oversized for your room. If you are buying a new wood burner, or replacing one, it is important to ensure it is the right size for the rooms that are being heated and that it meets emission standards.

The wood burner also needs to be installed correctly. Check with your local council or a HETA member 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.

There are only two routes to legally install a domestic solid fuel, wood or biomass-burning appliance. You can either:

- Use a registered HETAS installer who can self certify that the work he does complies with the relevant Building Regulations; or
- The consumer applies to their local authority building control department for a building notice, and pays the appropriate fee.

It is generally much simpler and cheaper to use a HETAS registered installer who will leave you with a Certificate of Compliance as a record of the job and that it complies with Building Regulations. A copy of the certificate is forwarded to HETAS who notify the local authority on your behalf.

Failure to notify the work through the registration scheme (in this case HETAS) or directly to the local authority can lead to enforcement. It can also cause problems for future house sales if there is no official record of a compliant installation.

Look after your wood burner, keep the burner well maintained and serviced. Make sure the chimney/flue is cleaned every year. Replace broken firebricks and keep the burner in good repair. Make sure the flue is insulated.

DIY repairs to wood burners are not recommended as this may also result in smoke or safety problems.

If the wood burner is difficult to start or smoke puffs out when the door is opened then the chimney is probably clogged with soot and needs to be swept. If your current burner is more than 10 years old it may need replacing so think about other cleaner forms of heating. Upgrade to an alternative that discharges low, or no, levels of pollutants.