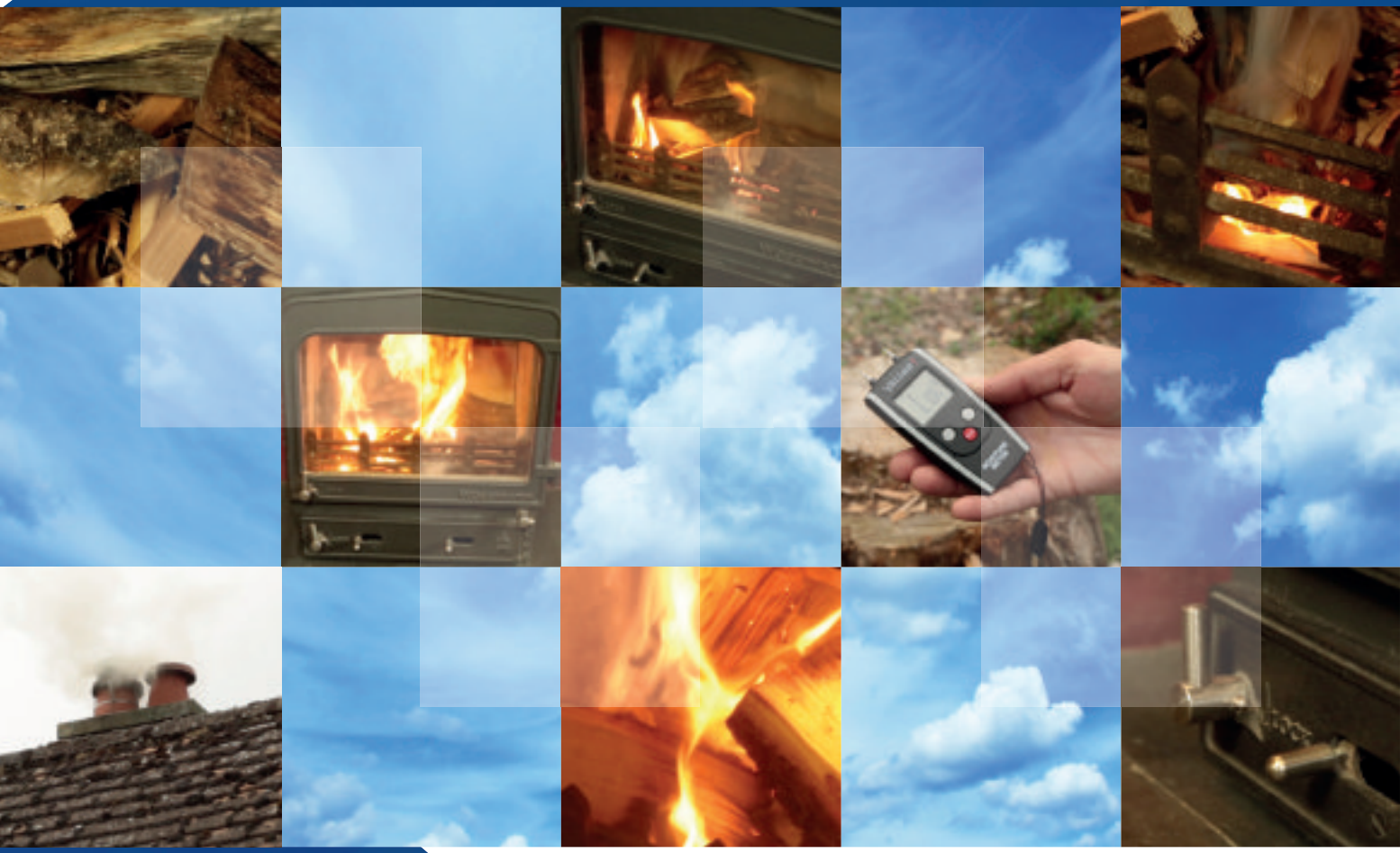
We all breathe the same air



Contents:

We all breathe the same air

Do you use a Woodburning stove or Open fire?

There is a health problem in the UK which affects us all. Air pollution can come from a number of sources such as vehicle engines, construction, agriculture and roads (dust from passing traffic). Less well known is the pollution that comes from heating appliances including **woodburning stoves** and **open fires**.

Air quality is a national problem and affects rural communities as well as towns and cities.

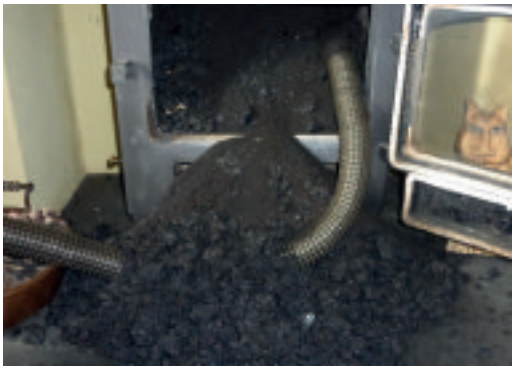
These sources of pollution create tiny particles in the air. Some are so small that they can pass easily in to our homes and workplaces. They enter our lungs and can cause health problems.

If you use a woodburning stove or open fire there are some simple steps you can take to make a big difference, but only if you understand the problems and what to do about them.

Please help to share the following information with anyone who has a fire or stove.

Getting it right

- Is easy!
- Will save you money
- Will reduce the risk of chimney fire
- Will help to reduce air pollution



This stove is capable of burning very cleanly, the logs used were dry and the chimney was lined and insulated.
But the owner got in to bad burning habits, closing the air controls off for long periods. The solid black "tar" or "creosote" nearly blocked this chimney. If there had been a chimney fire the liner would have been destroyed or worse. A lot of unnecessary air pollution was produced to create this much deposit in the chimney

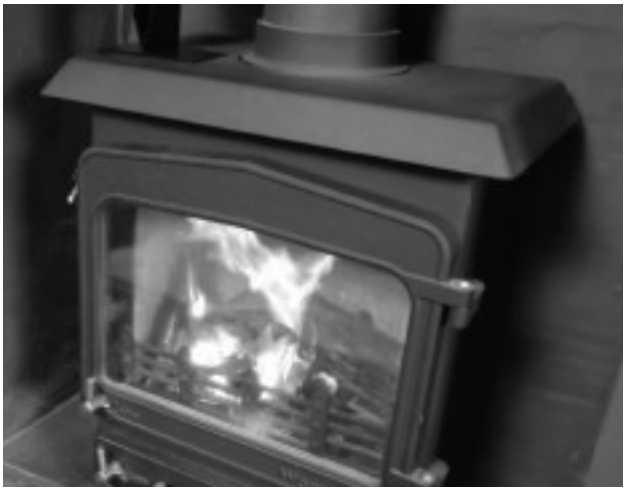
What is the problem?

Many of us enjoy the appeal and comfort of a woodburning stove or open fire and for some people it has once again become an important part of home heating.

In the UK there is a problem with air pollution which can cause health issues for us all. Even if you live in a rural area there can be times of poor air quality.

Woodburning stoves and open fires are responsible for a part of this problem and if we understand why, we can make a big difference to local air quality. For example, with correct use the impact of a wood-burning stove can be reduced by a whopping 80%! At the same time we can also save fuel (money) and reduce the risk of a chimney fire.

Your local professional chimney sweep can really help you get it right. They know your fire and chimney and understand your fuel. They can answer your questions about how to operate your fire or stove and how often to use it. They can look at what comes down your chimney and tell you if there is a problem and, most importantly, they can show you how to get it right.



Woodburning stoves

The main thing we can do to reduce air pollution is is by burning our wood at a high enough temperature.

If the temperature inside the stove is not high enough then the wood cannot burn efficiently. If the wood is not burning hot and efficiently then more of the damaging particles will pass up the chimney and out into the air we breathe.

The burning temperature (efficiency) of your stove is affected by four main factors.

- **The design of your stove**
- **The design and construction of your chimney**
- **The moisture content of the wood (needs to be 20% or less)**
- **The way you control the stove**

The single most important factor affecting the burn temperature is the way you use and control the stove. If the air controls are shut down too much, the burning temperature drops and lots of pollution is produced. You may be completely unaware of this. You can have a good stove attached to a good chimney and use nice dry wood but if you close the air controls too much, then lots of damaging pollution is produced. This process also wastes your fuel and soots up the chimney.

Never try to "slumber" your stove for long periods / overnight with the air controls closed off too much. Loading up the average stove to slumber for a long period can easily produce more than a kilo of tiny damaging particles which then pass out the top of your chimney and in to the air we all breathe.

Using dry wood is very important. It should contain 20% moisture or less. But, even if your wood is very dry, you will still create a real problem if the air controls to your stove are closed too much. See section on "useful tools" for information on using a moisture meter.

Logs should not be too large – 5 inches wide (125mm) will give the best result. Using large logs to make the fire last longer will usually result in a lower burning temperature, more wasted fuel and more pollution.

Look out for the 'Ready to Burn' logo for reassurance that the logs you are purchasing are dry enough to be ready to burn and carry the scheme's stamp of approval.

How will I know if there is a problem?

Often you won't even know there is a problem until the sweep comes and finds large amounts of unburned soot or tar in your chimney. Most stove users are not shown the best way to use their stove and so they do not know to get it right. Even if they are shown, it's easy to slip into poor burning habits and just do what seems to work.

Symptoms of very poor burning habits which cause lots of pollution include:

- **Blackened glass**
- **Constant smoke from the chimney – the chimney will smoke when first lit and perhaps when refuelling but otherwise there should be no smoke - smoke is simply unburned fuel, loaded with damaging particles**
- **Unburned wood or charcoal left after the stove goes out**
- **Your chimney sweep may say there's a lot of "tar / creosote" in your chimney. Please follow their advice on how to address this**

Use plenty of small kindling / sticks or suitable firelighter so that the fire is quickly established. Slightly larger logs should go on top. Use wood with a moisture content of 20% or less. Look for the Ready to Burn logo when purchasing bags of fuel.

Set all air controls to fully open, light the fire and close the door.

Allow a reasonable burn for 10 to 15 minutes (basically, flames should fill the box without being sucked up the chimney). It will take at least this long to bring the stove up to a good operating temperature.

Re-fuel now with slightly larger logs and allow a few minutes to establish. It is only when these small logs are burning that full size logs should be added. Things will be getting quite hot now. If your stove has more than one air control then this is the time to close the one which allows air directly in from the room. This is often called the primary control. See the manufacturer's instructions.

Better still ask a professional chimney sweep to show you how it works and have them explain why it is so important.

Once the "primary" air control has been closed the temperature will continue to rise. Using a "flue pipe thermometer" will help you know when you have reached the best temperature. If you are using a thermometer then aim for the middle of the "best operation" range. Again, ask your chimney sweep to show you and explain.

Once you reach optimum temperature you may now be able to reduce the amount of air using a "secondary" control. Reducing this air will slow the rate of burn **but it is vital not to close it off too much.** There should always be a reasonable amount of flame in the box and glass should stay clear.

Once the stove has been running at optimum temperature for 15 minutes or so, you can check to see if you have set the controls correctly by simply looking at the top of your chimney. If you see smoke, then there is not enough air getting in to the stove. Open the control up a bit, allow the fire to build for a few minutes and have another look. Once there is no smoke, you've got it right!

Every stove is different and you need to know what is best for you.

Ask your local sweep to take you through the process for your stove and have them explain everything. All professional sweeps are very interested in helping you get it right as it makes cleaning the chimney easier next time. Following their advice will save you fuel (money), it will mean your chimney is cleaner (safer) and you will have created less harmful pollution in your local area.

Please help us all by sharing this information with everyone who uses a fire or stove, after all, "We all breathe the same air."

Open fires

Open fires burn fuel at a much lower temperature than a well operated stove. They therefore create more air pollution. Again, most of this pollution you will not even see.

If burning wood, open fire users will get the best results from using dry logs which are not too large and burning them on a properly fitted open fire (not just a recess in the wall).

There is a specific problem with the types of fuels burned on open fires in **Smoke Control Areas** – (smokeless zones). This means that wood or normal "house coal" must not be burned on an open fire. They may only be burned on a stove that has been exempted for use in a Smoke Control Area. Please see the section on Smoke Control Areas if you live in a town or city.

Getting it right

Getting it right is easy once you know how and it really is important. You can have a great fire and chimney with lovely dry fuel, but if it's not burning hot enough, you will create unnecessary pollution with every burn. Bringing your fire up to correct operating temperature quickly and keeping it there will give the best result. Pollution will be minimised, you'll save money and your chimney will be cleaner and safer.

Lighting and operating

You should check the manufacturer's information for specific details on the operation of your stove. The majority of stoves in the UK are "multi fuel" although the most common fuel is wood logs. Most stoves are not suitable for burning normal "house coal". Many manufacturers will specify "smokeless coals" only if using a coal based fuel so you should check the instructions.

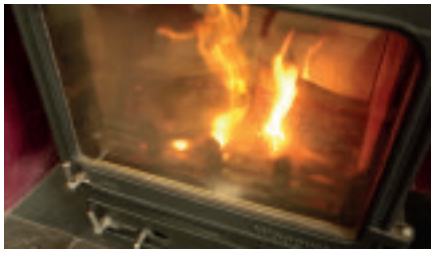
Step 1

Use plenty of small kindling

Step 2

Set all air controls to fully open

Step 3



Allow reasonable burn for 10 to 15 minutes

Basic guide

Use plenty of small kindling / sticks or suitable firelighter so that the fire is quickly established. Slightly larger logs should go on top. Use wood with a moisture content of 20% or less. Look for the Ready to Burn logo when purchasing bags of fuel.

Set all air controls to fully open, light the fire and close the door.

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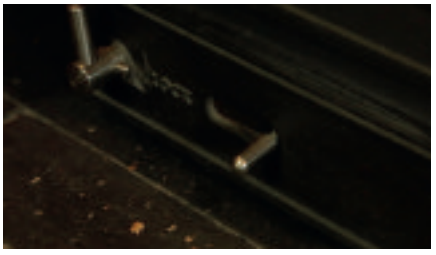
Once the "primary" air control has been closed the temperature will continue to rise. Using a "flue pipe thermometer" will help you know when you have reached the best temperature. If you are using a thermometer then aim for the middle of the "best operation" range. Again, ask your chimney sweep to show you and explain.

Step 4

Re-fuel with slightly larger logs

Step 5



When it's hot enough you *may* be able to close off the air control but **not too much.**

Once you reach optimum temperature you may now be able to reduce the amount of air using a "secondary" control. Reducing this air will slow the rate of burn but it is vital not to close it off too much. There should always be a reasonable amount of flame in the box and glass should stay clear.

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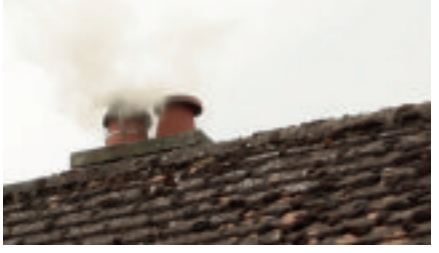
Step 6

Keep it hot, if you are using a flue thermometer, aim for the middle of "best operation"

Step 7

Maintain a good bright flame with medium sized logs

Step 8

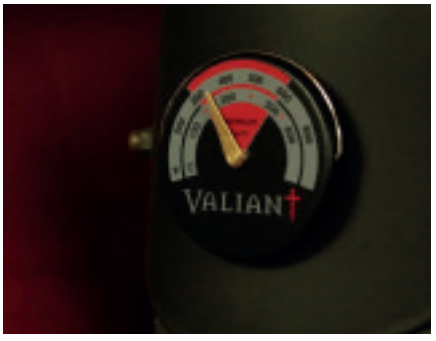


Check the top of the chimney - if you see smoke - adjust the air controls

Useful tools

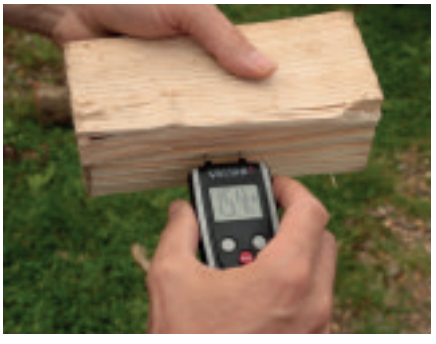
Flue pipe thermometer • Moisture meter • Stove fan

These tools will help you get the very best from your stove and your fuel. They can save you money, help keep the chimney cleaner and reduce unnecessary air pollution. They are relatively cheap and easy to use. All are widely available but your local professional sweep will often supply them or show you where to get them.



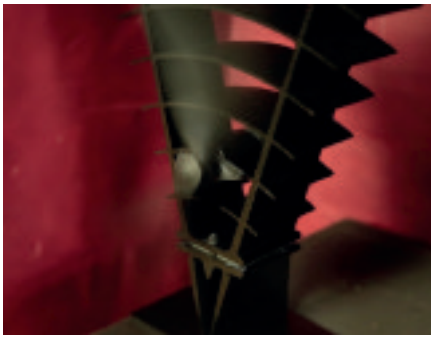
Thermometer

A "flue pipe thermometer" or "stove thermometer" is usually attached to the pipe coming from the top of your stove. It helps you to know when your stove is burning at the best temperature. Try to aim for the middle of the "best temperature" range on the meter. You will soon learn how to reach this temperature quickly and keep it there.



Moisture meter

This measures the amount of water in your logs. You should aim for 20% moisture or less. If the moisture is more than this, the wood will not burn so efficiently and you will waste fuel and increase pollution. To test moisture content properly the log must be split in half. Then test the freshly split surface. You may not get a correct reading if you just test the outer surface.



Stove fan

This is a small fan which sits on top of your stove. It is powered by heat from the surface of the stove so there are no batteries or wires. Once the stove reaches a good operating temperature the fan will effectively "mix or stir" the hot air rising from the surface. If you can distribute the heat more evenly you may be more comfortable. You may need less fuel to feel warm enough and once again air pollution can be reduced.

The fans are low powered so you won't notice any draught.

Smoke Control Areas

All larger towns and cities have Smoke Control Areas, often called "Smokeless zones". If you use a woodburner or open fire in a Smoke Control Area it is important to know the rules or you may unknowingly be committing an offence.

You can check if your property is in a Smoke Control Area by contacting environmental services at your local council. Many councils will have this information on their websites.

Our schools, homes, recreational areas and our workplaces are often within a Smoke Control Area. If you use a woodburner or open fire in a Smoke Control Area SCA there are some important rules to keep us all safer.

Open fires in smokeless zones

Any fuel burned on an open fire in a Smoke Control Area must be an "authorised fuel". This is because you are only allowed to burn smokeless coals or anthracite.

You will be committing an offence if you burn wood logs, wood products or normal "house coal". You are however still allowed to start the fire with small wood kindling etc. Not only is it an offence to burn unauthorised fuels, but you'll be introducing a large amount of damaging pollution in to your local neighbourhood. If we ignore these rules, it's bad news for air quality.

Woodburning stoves in smokeless zones

Any stove installed in a Smoke Control Area must legally be an "exempted appliance", often referred to as **Defra EXEMPT**. Exempt appliances apply to Defra jurisdiction in England. Scotland, Wales and Northern Ireland have a similar process but local requirements may vary a little. Details of exempted appliances can be found on Gov.uk at the following link:
https://smokecontrol.defra.gov.uk/appliances.php

Exempted appliances are designed to burn the fuel more efficiently and so reduce potential air pollution. Even so, they do vary a lot from one make to another so it's very important to follow the guidelines here, in the "**How can I get it right**" section.

Exempted appliances require you to use specified fuel(s) and they need to be operated in accordance with the instruction and installation manuals and when any other conditions are met. Exempted multi-fuel stoves can usually burn authorised (smokeless) fuel or wood logs / authorised wood based products with a low moisture content.

Have you have moved to a house in a Smoke Controlled Area?

If there is a woodburning stove you should check the documentation to make sure it is an exempted appliance or seek professional advice.

Dos and Dont's

This brochure covers details of air quality problems and solutions regarding fires and woodburning stoves along with some video explanations. Meantime here are some important do's and don'ts to help with the basics.

Do

- ✓ Bring the stove to operating temperature quickly and try to keep it there
- ✓ Use dry wood – 20% moisture or less (Look out for the "Ready to Burn" logo)
- ✓ Use manufacturer's recommended fuels
- ✓ Sweep your chimney regularly. A professional sweep can give lots of useful extra advice.
- ✓ Store and stack your logs so they are well ventilated
- ✓ Use a thermometer, moisture meter and stove fan to help improve efficiency, save money and reduce pollution
- ✓ Do fit a Carbon Monoxide alarm. This has nothing to do with how the stove burns, it's just common sense
- ✓ If you have an older or inefficient stove or one that's too powerful, consider replacing it with a modern efficient model. You'll instantly begin to save money and burn cleaner

Don't

- X Don't close off the air to "slumber" the fuel for long periods or overnight
- X Don't use large logs - 4 to 6 inch / 100 to 150mm diameter is best
- X Don't burn wood or coal on open fires in Smoke Control Areas
- X Unless you have just lit or just refuelled the fire, don't allow smoke to come from the top of the chimney
- X Don't buy a stove which is too big (too powerful) for the room. You'll get too hot and be likely to shut the air controls too much. The burning temperature will drop, fuel is wasted and pollution increased
- X Don't be tempted to fit or alter any part of a chimney or solid fuel system yourself – it's far too easy to get something wrong
- X Don't mix smokeless fuel and wood, you won't get the best from either and it can create problems
- X Don't burn plastic waste or treated waste wood. It stinks and it's toxic