

The Wood Burning Stove Guide

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Why buy a
Wood-Burning Stove?

The wood-burning stove market has grown rapidly in recent years and shows no signs of slowing down just yet. In 2010, sales of stoves increased by between 300 and 500% compared to the previous year, according to some estimates. Since then, their popularity has gone from strength to strength, with stoves becoming a mainstay of lifestyle magazines and TV property shows.

Given the technological advancements that have been made in the last 100 years, you might, quite legitimately, wonder why we are choosing, in our droves, to heat our homes with a form of heating that was widely available in the 19th century and had been in use since the 17th century.

There is probably no single factor responsible for the resurgence of the wood burner. Instead, there has been a steady progression of things that have encouraged people to ditch oil, gas and electricity and return to what, on the surface at least, is a more primitive form of heating. Here are some of the main reasons for the incredible popularity of the wood-burning stove.

Money

Perhaps the biggest single factor in the increasing popularity of wood-burning stoves was the financial crash of 2008, along with the subsequent credit crunch and global economic crisis. Firstly, it encouraged many people to look for ways of saving money. That led to lots of households choosing to install a stove in order to take control of their heating bills.

Secondly, as the crisis continued, it became apparent that while interest rates and salary increases were frozen, energy bills were going to continue to rise regardless. Swathes of people decided to install a stove to provide a form of heating that didn't come with a bill and would protect them from future energy price rises. It is a trend that continues to this day.

Environmental friendliness

There has been a general shift in public attitudes towards the environment in recent years. While some scientists argue that we are not doing enough to tackle climate change, most of us have started to give some consideration as to the impact we have on our surroundings, even if that has only been piqued by local authority bin collection policy.

Wood-burning stoves can help any household do their bit to reduce their carbon footprint and become more environmentally friendly. Used properly, a stove is a carbon-neutral form of heating for your home. That is because the amount of carbon released when you burn wood is only equal to what it had absorbed when it was a living tree. If you make sure to source logs from sustainable forests, the situation can continue indefinitely with no impact on the environment and no more carbon entering the atmosphere than is being absorbed by other trees.

On top of that, the latest regulations on the eco-friendliness of new build homes mean that gas fires are no longer a viable option for many homebuilders. Wood-burning stoves provide an alternative that complies with the regulations and increases the desirability of the properties when they go on the market.

Desirability

The jokes about a wood-burning stove being a middle class status symbol are well worn. Indeed, The Guardian newspaper has noted that its readers are now described in some quarters as being ‘wood-burning stove owners’, replacing the traditional stereotype that they were ‘sandal wearers’ or ‘muesli eaters’.

Of course, not all wood-burning stove owners are middle class any more than all Guardian readers own one. The kernel of truth at the heart of the stereotype is that wood-burning stoves have certainly become desirable and aspirational. The economic and

environmental factors we have already mentioned are helped by the fact that a lit stove can brighten up any living room and, yes, maybe even attract a few admiring glances from visitors.

Improved safety

Wood-burning stoves are now safer than ever before. As well as generating less soot and lower emissions, stoves are now required to be CE approved.

Since July 2013, all appliances must feature a CE plate to verify that they have been checked and confirm that they meet the appropriate European safety and efficiency standard, which is EN13240 for freestanding stoves and EN13229 for inset stoves.

Improvements to wood-burning stoves

While the process of burning fuel inside a cast iron box has been established for hundreds of years, the technological advances that have been made in recent years have undoubtedly made stoves a more enticing option for many households. A lot of these developments enhance some of the factors we have already discussed. For instance, the addition of effective baffle systems. This is a plate that sits across the top of the firebox to make it harder for gases to escape before they have been burned.

Another example is the inclusion of secondary and, in some cases, tertiary air supplies (LFQ). This involves pre-heated air being blown back into the firebox. The secondary air supply is usually at the top of the firebox, raising the temperature in that part of the stove and encouraging unspent gases to burn.

The new clean-burn technology in use in modern stoves makes them 30% more efficient than older stoves (LFQ). That means almost a one-third reduction in the number of times you need to buy or chop wood, making them cheaper and easier to run.

It also reduces the amount of soot created when the stove is in use, which results in less creosote building up in the flue and lowers the risk of chimney fires.

In the past, a stove would have had a negative impact on the air quality in your living room, let alone outside. That's no longer the case. There is also a 90% reduction in air pollution from a modern stove in comparison to a conventional stove.

The emergence of airwash technology means modern stoves also keep their own glass clean, which makes them more aesthetically pleasing and not such hard work to maintain.

The benefits of buying a stove

We've established some of the reasons behind the popularity of wood-burning stove, but what impact would installing one have on your home? Here are some of the main perks of becoming a wood-burning stove owner.

Lower energy bills

One of the key benefits of buying a wood-burning stove is the opportunity to reduce your energy bills. By how much? That depends on who you ask. The Energy Saving Trust says a normal sized stove will save 10% on the average household heating bills. They estimate this rises to about 20% if you've got a larger stove and a back boiler to provide hot water. The savings are considerably greater if you're currently using electricity to heat your home.

There is plenty of anecdotal evidence about much higher savings being achieved, but there are a host of factors at play. That includes your current energy usage and, significantly, how you operate your stove. We will be exploring how to use your woodburner for maximum efficiency and maximum savings later in the book.

Estimates suggest that a wood-burning stove will have paid for itself within three to five years of it being installed. Beyond that, your investment in the stove will be complete and you will be making real savings every time you need to use your stove. Those figures don't take into account rising prices for other forms of energy in the meantime, so you could find that your investment pays off even sooner.

Free fuel

Depending on your circumstances, or your ability to make friends with your local timber yard or joinery workshop, it is possible that you will be able to heat your home at no cost whatsoever by sourcing free fuel. Ensure not use treated wood as this can cause damage to your stove.



Boost your green credentials

As we previously mentioned, the environmental friendliness of wood-burning stoves is one of the main reasons for their recent rise to prominence. If you take an interest in looking out for the environment, even if it is only a passing interest when the opportunity arises, then owning a woodburner can certainly help your home to become greener.

Installing a stove is better for the environment than burning fossil fuels, such as oil, gas and coal. We've already discussed how burning wood is carbon neutral. Beyond the burning process itself, think of how far your oil, gas or coal has travelled before it arrives at your home. Sustainable wood sources are easy to track down, so you'll be able to cut down on emissions that would otherwise have been created in the transportation of your fuel.

A cosy, attractive living room

Perhaps the decisive factor for many people is the fact that a wood-burning stove helps to create a cosy atmosphere in any home. As well as generating a natural warmth, the stove is also visually impressive. There is something very relaxing about lighting a roaring fire, sitting back and watching the flames dancing around inside.

A heart of the home

With TVs, laptops and tablets scattered throughout our homes, family life can sometimes be surprisingly isolated these days. Yet even the grumpiest of teenagers will struggle to resist the lure of a cosy wood-burning stove on a chilly autumn evening. Yes, the tablet will probably come too, but a woodburner still has the wonderful effect of bringing households together and creating a focal point around which families can gather.



Of course, we don't need much encouragement at all because it is in our DNA. We've been gathering around fires, chatting and laughing for thousands of years, so it comes surprisingly naturally.

A safety net from technology

It is easy to take our modern technology for granted. It is only when the power goes off, the boiler breaks or the weather makes the roads impassable that we realise just how reliant we are upon these things. If you've experienced a power cut, cracked pipes or a dodgy boiler recently you will know that these things can leave you feeling pretty helpless. With a wood-burning stove in your home, you have a form of heat and, to an extent, light. You can boil a pan of water on top of selected stoves which is something you can't do if you have an electric oven and the power is off.

Equally, global events can sometimes have sudden and dramatic effects on fuel prices and supply. A wood-burning gives you energy independence; a form of heating that is in nobody's hands but your own.

You can use them in smoke control areas

Assuming you choose a DEFRA-approved appliance, buying a wood-burning stove allows you to sidestep the laws prohibiting the burning of fuel in smoke control areas. Residents of many of the UK's major towns and cities fall into this category.

But with the right appliance, or by choosing to burn approved smokeless fuels, you can have a real fire in your home.

You can install them in homes without a chimney

When technology and trends seemed to be leading towards electricity or gas as the future of home heating, many properties were built without a traditional fireplace or chimney. But this doesn't preclude them from installing a wood-burning stove.

Twin wall flue pipes make it possible to add a functioning chimney to even homes that didn't previously have a fireplace of any kind. The prospect of introducing a real fire to these properties is often a very appealing one.

Add value to your property

Anecdotal evidence from estate agents and letting agents indicates that the desirability of a wood-burning stove extends to the property market. Homes that include a stove are more likely to sell and entice tenants.



Choosing your
Wood-Burning Stove

If you have already started looking around for wood-burning stoves and have found the process to be a bit overwhelming, please don't worry, because you're certainly not the only one. The level of variety now available in the wood-burning stove market means it can be difficult to know where to start your search.

Four Stove Styles

To make that task a little easier, it is worthwhile working through this sequence of questions to focus on what you need.

What size of room am I heating?

The first step in picking your wood-burning stove is to measure the room that you want to heat. All wood-burning stoves have a heat output - usually given in kW - to denote the nominal amount of kilowatts of heat that the appliance is capable of generating.

You will need to find an appliance with a heat output that is appropriate to the size of room it will be in. We will explore what that means and discuss heat output in more detail later in this chapter.

How much do I want to spend?

Inevitably, budget plays a big factor when choosing your wood-burning stove. You can buy a very good, cast iron stove for as little as £220. From there, prices go up and you could spend £2,000 or more on the stove of your dreams. The more expensive stoves are usually more powerful, more intricately designed, manufactured by brand name companies or a combination of all three of these things.

Which type of fuel do I want to burn?

If you know for certain that you will only ever want to burn wood in your stove then a normal wood-burning stove is the best option. If you would like the choice of burning smokeless

coals sometimes, then a multi-fuel stove is best for you. We will explore the main differences between a wood-burning stove and a multi-fuel stove later in this chapter.

Do I want to be able to heat my water?

Standard wood-burning stoves are designed to just heat your home. If you choose to install a boiler stove, you can also use the energy generated to provide hot water for your home. There is more information on boiler stoves later in the chapter.

Which style suits my home?

Once you have used those questions to narrow down your search, it is simply about finding the appliance that is right for you and your decor. The choices vary from traditional, classically styled cast iron boxes to complicated modern designs that owe as much to the world of sculpture as they do to traditional wood-burning stoves. Perhaps unsurprisingly, the more extravagant the stove, the higher the price tends to be.

Hopefully that process has helped to narrow down your search and given you a clearer idea of what it is you are looking for. With that in mind, let us explore some of the options at your disposal in a bit more detail.

Multi-fuel stove

The vast majority of wood-burning stoves currently being sold are not wood-burning stoves at all. While wood-burning stove remains a useful catch-all phrase, most modern appliances are actually multi-fuel stoves.

What differentiates a multi-fuel stove from a wood-burning stove?

A multi-fuel stove is designed so that you can burn solid fuels as well as wood. In other words, you can burn either coal or wood. It is worth pointing out a couple of things at this stage.

Firstly, most multi-fuel stove manufacturers will advise against burning regular household coal on their appliances. That is because household coal releases large quantities of thick yellow-grey smoke before it ignites properly. This gas is very volatile and, in the confined environment of a multi-fuel stove, can cause explosive flashes. The explosion might be of sufficient force to crack the glass in your stove or even cause damage to your flue.

And the problems don't stop once the coal is burning. Household coal burns intensely for the initial 30 minutes after igniting. Stoves are not made to cope with that fierce initial burn and the fire is likely to cause damage to the inside of your stove. Tell-tale signs of premature wear caused by the stove operating under these conditions are twisted baffles, misshaped grates, pitted and cracked liners and warped fuel retainers. Instead, most stove manufacturers will recommend that you burn manufactured or smokeless fuels on their appliances. Examples of those fuels include anthracite, as well as a variety of brand name alternatives such as Taybrite and Phurnacite.

Secondly, even a multi-fuel stove is an 'either/or' situation. You can choose to burn wood or choose to burn solid fuel, but you should not burn both at the same time in your appliance. If you do, you will risk causing damage to your flue lining and the stove itself. The sulphuric acid contained in coal and the high moisture levels found in wood will combine to create a nasty solution that will stick to and erode your stove system.



TOP STOVE TIPS

Don't confuse multi-fuel with 'every fuel'. Each appliance will have guidance and recommendations as to what should and should not be burned in it.

Consult your stove manual to ensure that you don't end up burning something unsuitable.



Mazona Olympus 8 kW Multi-fuel Stove

How can you tell the difference between a multi-fuel stove and a wood-burning stove?

The easiest way to spot a multi-fuel stove is by the raised grate that will be inside. Coal needs a good air supply from beneath in order to burn effectively, so all multi-fuel stoves have a raised grate for the fuel to sit upon. Usually this will be a riddling grate,



TOP STOVE TIPS

Unlike wood, coal does not burn well on a bed of ashes. You can use your multi-fuel stove's riddle when reloading with more fuel to empty any ashes that have built up into the ash pan.

This will allow the new fuel to light and burn more efficiently.

which means it includes a mechanism that allows you to move or twist the grate in order to empty the ashes into an ash pan below. In the case of most modern multi-fuel stoves, you are able to operate the riddling grate externally.

In a wood-burning stove, the fuel simply sits at the bottom of the firebox. There is no raised grate and no ash pan.

The key benefits of choosing a multi-fuel stove

- The flexibility to pick different types of fuel to burn.
- It is easier to clean out the ashes due to the raised grate and ash pan.

Wood-burning stove

As we've already established, many multi-fuel stoves are referred to as wood-burning stoves. Strictly speaking, a wood-burning stove does exactly what it says on the tin: it is a stove that burns only wood. Given that you are reading this book and already have a level of interest in wood-burning stoves, you are probably most familiar with this particular option and it is perhaps the one that you are currently considering pursuing. As such, this chapter will probably be of more use in helping you to explore other options.

It is, however, worth reiterating a few points in relation to wood-burning stoves. Firstly, a wood-burning stove will ordinarily have a fixed grate with a flat base. That differs from a multi-fuel stove



TOP STOVE TIPS

The ashes from your stove have several uses if you would rather not just throw them away.

For example, once they have cooled, put them on an oil spill on your driveway and it will help to remove the stain.



Villager C Flat Solo 5 kW Wood Burning Stove

with its raised grate. The reason for this is that wood burns best on a shallow bed of ashes, which helps the combustion process. Wood is reliant on air supply from above to help it burn - whereas coal needs air from below - so the raised grate is not needed.

TOP STOVE TIPS

Do you have a good supply of wood nearby? If you have access to lots of free logs or can strike up a friendship with an industrial woodworker (such as a sawmill or joiner), a wood-burning stove suddenly becomes a much better financial and environmental option than a multi-fuel stove. Ensure to use untreated wood for your stove as treated wood can cause unwanted damage.



This also means that wood-burning stoves don't have an ash pan due to the lack of a raised grate. Instead the ashes gather at the bottom of the firebox. Ashes have to be cleared by scooping them out with a shovel. Alternatively, vacuum cleaner attachments, which collect ashes in a pot outside the cleaner itself, are available.

A wood-burning stove is greener than a multi-fuel stove because burning wood is better for the environment than other solid fuels. Indeed, burning seasoned wood while operating a stove correctly will result in a carbon neutral burn.

If you have a good local supply of free wood, a wood-burning stove is likely to be significantly cheaper to run than a multi-fuel stove for which you are regularly buying coal. But in terms of performance, heat output and efficiency, there is little or nothing to choose between wood-burning stoves and multi-fuel stoves.

The key benefits of choosing a wood-burning stove

- The most environmentally friendly option.
- Cheaper to operate if you are able to source free or bulk purchase wood.



TOP STOVE TIPS

Do you have a good supply of wood nearby? If you have access to lots of free logs or can strike up a friendship with an industrial woodworker (such as a sawmill or joiner), a wood-burning stove suddenly becomes a much better financial and environmental option than a multi-fuel stove. Ensure to use untreated wood for your stove as treated wood can cause unwanted damage.

Inset stoves



An inset stove is an appliance that is designed to slot into a recess within a wall in order to minimise the amount of floor space that is occupied by the stove. The most common use of inset stoves is within an existing fireplace opening, although it is possible to fit an inset stove in any recess that allows the correct levels of ventilation.



TOP STOVE TIPS

If you're installing an inset or cassette stove, remember you will need to plaster around the appliance with a heat resistant plaster.

Regular plaster is likely to crack and peel as a result of the heat from the stove's metal surround.

Most inset stoves are designed to slot into standard fireplace openings. This allows for an easy installation process. Since these appliances are built to function correctly and ventilate adequately when fitted into a recess, they require less space than a freestanding wood-burning stove. A freestanding appliance must meet building regulations relating to the distances that need to be left around the stove. If you've got a small room, a small fireplace or you don't want the additional building work that might be entailed in opening up an existing fireplace to fit a freestanding stove, an inset stove might be the best option for your home.

Inset stoves come in a range of styles, so you will have no problem finding an appliance that is suitable, regardless of whether you're looking for something traditional or modern. They are just as efficient as regular stoves. You might find that an inset stove is slightly more expensive than an equivalent freestanding model. However, the difference in price is usually compensated by a cheaper installation.

The key benefits of choosing an inset stove

- Easy and often a cheaper, installation process.
- Take up less space in your home.

Boiler stoves



Stratford 12HE Eco Boiler Multi-fuel Boiler Stove

If you want to cut your heating bills even more than you would with a regular wood-burning stove, you might opt for a boiler stove. This is an appliance fitted with a back boiler, which can be plumbed into your central heating system and used to heat your water tank or radiators.



A boiler stove is plumbed into your central heating system

The stove itself functions in the same way as any other woodburner does inasmuch as the lighting, loading and burning process is exactly the same. A key consideration is that you will need a greater heat output than you would for a regular stove if some of the energy generated is being diverted away from heating your room to heat a boiler.

In some cases, a back boiler can be bought to be fitted with a normal wood-burning or multi-fuel stove, but this is usually only possible when the manufacturer has specifically planned for this eventuality and made the required parts.

Another consideration is that a boiler stove installation will generally cost more than a standard installation. That is because of the work to connect the stove to your central heating system. It is worth getting a professional heating engineer to do this for you because it can be a tricky job.

Ensuring hot water gets to radiators in various parts of your home is a balancing act that involves gravity and circulating pumps. It is something that it is better to get right at the outset if possible to ensure that all your radiators get an equal amount of heat and heat to similar levels.



TOP STOVE TIPS

Heat outputs for boiler stoves are sometimes given in BTU rather than kW.

This is a unit of energy based on the amount of energy needed to heat one pound of water by one degree Fahrenheit. To convert BTU to kW, simply multiply by 0.000293.

Once that is achieved, you have the opportunity to become genuinely self-sufficient with regard to your energy supply. Some householders who are particularly serious about becoming self-sufficient - often for the reasons mentioned in the previous chapter - combine a boiler stove with solar panels to ensure they can generate their own hot water, plus electricity in that case, regardless of the weather.

The main downside of relying solely on a boiler stove to provide heat to your water tank and radiators is that you cannot set it to come on at a particular time and can only generate heat once you have lit the stove. Of course, this is not a problem when it is being used in conjunction with solar or your existing central heating boiler.

The key benefits of choosing a boiler stove

- More savings on your energy bills.
- The option of heating your radiators and water with the energy from your stove.
- Greener energy to your central heating system.

Contemporary stoves



Invicta Ove 10 kW Wood Burning Stove

When we discuss contemporary stoves, we are really talking about the aesthetics of the appliance. Virtually all modern wood-burning stoves come equipped with up-to-date technology that ensures a cleaner, more efficient and more effective burn than would have been the case in yesteryear.

With that in mind, a contemporary stove is usually one that boasts an unusual or non-traditional design, or that is particularly suited to a home with modern decor.

Generally, it is design that sets contemporary stoves apart from other appliances. They are ideal if you want your stove to become an eye-catching feature within a room. And they are particularly effective in large or open plan living rooms because they can dominate the space when a traditional stove might not be able to do so quite as effectively.

Often they will be made from steel rather than the traditional cast iron, since steel is easier to manipulate into intricate designs during the manufacturing process.

The key benefits of choosing a contemporary stove

- A woodburner that suits your decor and taste.
- More intricate designs that differ from traditional stoves.

Double-fronted stoves

As the name suggests, a double-fronted stove is one with two fronts. In other words, it has two front panels with a window in each. Apart from that, a double-fronted stove functions in exactly the same way as any other wood-burning stove.



Firebelly FB2 Double Fronted Black 12 kW Woodburner

So, why would you opt for a double-fronted stove?

They are often the best option for large and open plan spaces because you can take advantage of the view from two different angles. For example, you might have a large room with a lounge area and a dining area. In that case, a double-fronted stove gives you the opportunity to admire your stove regardless of which part of the room you're using.

But double-fronted stoves really excel when you want to heat two adjoining rooms. For instance, if you have a chimney breast between two rooms, you might choose to install one double-sided stove to heat both rooms. In this instance, it is important to take the whole space into consideration when deciding what size of appliance is needed to do the job.

You might recall seeing a double-fronted stove in a pub, restaurant or hotel at some point. They are a popular choice in those settings because it gives the owners the opportunity to create warmth and ambience for people on both sides of dividing walls.

The key benefits of choosing a double-fronted stove

- Potential to heat two rooms at once.
- A more attractive view in larger or adjoining rooms.

DEFRA-approved stoves

If you are buying a stove for environmental reasons, then appliances that come with a seal of approval from the government department with responsibility for the environment is probably a good starting point.

DEFRA-approved is the popular title given to these stoves, but the correct name for them is DEFRA exempt. This is because

they have been granted exemption by the Department for Environment, Food and Rural Affairs from the regulations banning the use of wood-burning stoves in smoke control zones. You can read more about this in chapter 4.

By virtue of the fact that they have been tested and deemed suitable for use in smoke control zones by DEFRA, it is a safe assumption that these stoves are clean-burning and do not have a negative effect on air quality. That is good news for the environment, and also for your neighbours if they are prone to complain about that sort of thing.

The cleaner burn means that less soot is produced and, as a result, the stove operates more efficiently, which also saves money.

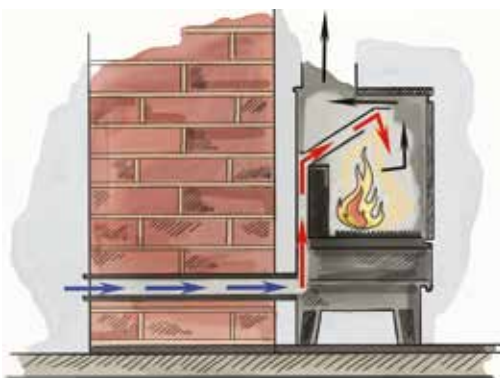
The key benefits of choosing a DEFRA-approved stove

- Suitable for use in smoke control zones.
- Clean-burning and don't impact air quality.
- High efficiency.

External air stoves

Also known as room-sealed stoves, external air stoves are stoves that effectively self-ventilate via their own air supply.

All stoves need ventilation in order to create the draw that supplies air to the fire and encourages gases to travel up the flue. While



How an external air stove works



the amount of air needed is not anywhere near as great as would be the case with an open fire, draughts and air movement can still be created with a stove.

That's not the case with an external air stove, which will usually come with a spigot to connect to a dedicated air duct leading directly outside. The spigot tends to be fitted behind or underneath the stove to maintain its aesthetics.

Aside from eliminating draughts, external air stoves are particularly useful if you have a low energy house or an airtight home. The air supply from the external duct can either be partial or total. If you are aiming for airtight, total will be the way to go - and you may still need additional sealing on your appliance to ensure it passes air pressure tests.

A room-sealed stove is ideal for rooms that are well insulated. It is also a great option for rooms that already include an extractor fan or another form of mechanical extraction, so that the draw of the stove doesn't have to compete with a huge mechanical draw elsewhere in the room. This scenario risks filling the room with smoke.

Equally, an external air supply means that your woodburner is constantly drawing in air from outside your home, rather than consuming the warm air it has just generated. That means all the heat created goes towards heating your room rather than instantly being drawn back into the stove.

The key benefits of choosing an external air stove

- Suitable for use in low energy, airtight and well insulated homes.
- Reduces draughts.
- More efficient - doesn't use the warm air it has generated.

Pellet stoves



Aarrow DEFRA Ecoburn Flexifuel Stove

Pellet stoves act as a nice halfway house between a regular wood-burning stove and central heating. Rather than burning logs, these stoves are designed to burn small pellets. The pellets are usually stored alongside the appliance in a hopper

and automatically delivered to the stove when required via a fuel feed system.

Pellet stoves usually include a self-ignition function, so heat is available at the click of button, which is not the case with other wood-burning stoves. You also have the option of setting a pellet stove to come on at a certain time and also have more control over the the temperature at which it operates. They also tend to offer a cleaner burn that produces fewer ashes than other stove types.

Pellet stoves do need an electricity supply to operate some of those functions and to power their fans, which means they generate more noise than a regular wood-burning stove. But any additional noise is offset by the impressive 85-90% efficiency that you can expect to achieve with a pellet stove.

The key benefits of choosing a pellet stove

- Self-ignition, automatic fuel feed and ease of use.
- Greater control over the temperature.
- Efficiency of 85-90%.



TOP STOVE TIPS

If the room in which the stove is being installed is adjoined to another via an arch or a doorway that you have opened up, treat the space as one room.

If you don't, the hot air generated will simply escape to the adjoining section and your stove will not heat the space effectively.

Heat output

As we touched upon earlier in this chapter, the heat output of a wood-burning stove is a very important factor in determining which appliance is right for you. Getting the right size of stove - the one with the most appropriate heat output - is absolutely essential in getting the most from your wood burner.

Buy a stove that is too small and you might find that it does not heat the room sufficiently. The last thing you want after installing a new stove is to be reaching for the central heating switch because you are still a bit chilly. Generally, stoves with a lower heat output are less expensive to buy, which can make them more tempting. But in order to make the maximum savings on your heating bills, it makes more sense to invest in a stove that pumps out enough heat to do the job you need it to do. You will soon cover the price difference between the appliances in reduced bills, whereas a shortfall in the amount of heat you need is harder to bridge.

At the other end of the scale, keep in mind that there is no 'off' switch on your stove. If you've got an appliance that is too big for your room then you risk making it uncomfortably warm once the stove is lit.

Having a stove that is too big also hits you in the pocket. If running the appliance at full capacity - the most efficient way to operate a stove - creates too much heat, it is inevitable that



TOP STOVE TIPS

Most stoves are given a maximum heat output and a nominal heat output. The maximum heat output is the highest the appliance is capable of achieving, while the nominal is the amount it was tested at, with the manufacturer having proven that it is possible to operate at that heat output. When judging the correct heat output for your room, work from the maximum output.

you will try to have smaller fires and run the stove below its optimum level to try to stop your room from overheating. This leads to a smouldering fire that does not burn efficiently. Gases will escape up your chimney without being burned. This leads to unnecessary air pollution and also wastes your fuel.

Calculating the right heat output

To work out the best heat output for your room, you need to measure the width, length and height of the room and multiply them together to give the volume of the room. You should then divide that figure by 15 to give the right heat output.

For a room that is very well insulated, you can divide by 25, while dividing by 10 is more appropriate for a room that is particularly draughty, poorly insulated or has thin walls. Alternatively, you can search online for heat output calculators that will do the maths for you.

Measuring heat output

Unfortunately, there is no uniform method of measuring heat output between different stove manufacturers. Although a specific measuring process has to be followed to meet BS and European EN standards, there are so many variables allowed that it can be difficult to compare between different manufacturers.

Calculating a stove's heat output involves measuring the average heat generated over the course of a refuelling period. The manufacturer can choose how long this period should be, as long as it is more than 45 minutes. They can also specify the size of the fuel being used and declare the nominal heat output they believe the appliance is capable of achieving.

The test essentially assesses whether or not the nominal heat output specified by the manufacturer is accurate. It goes without saying that manufacturers pick the most favourable variables to

deliver the average kilowatts per hour output they want. In other words, the refueling period and test heat output can be adjusted to ensure the results show the highest possible efficiency or the maximum possible heat output. However some manufacturers state the operational range of the wood-burning stove.

Although the testing process is neither impartial nor entirely accurate, it remains a good rule of thumb. If manufacturers were making outrageous claims about their appliances, this would be picked up by the test and by consumers. As a result, the vast majority are committed to accuracy when declaring the heat output of their stoves.

But the fact remains that the nominal heat output given by manufacturer might differ greatly from what the stove achieves when installed in your home and the maximum heat output could be very different from the nominal heat output given.

Equally, it is almost impossible to compare the nominal heat outputs of different manufacturers given that the tests could have been conducted under very different conditions.

Efficiency

There are two aspects to wood-burning stove efficiency. The first relates to the design and technology used by the manufacturer, while the second depends on how you operate the stove once it's installed. It is very similar to the fuel economy of your car. The



TOP STOVE TIPS

Maximise the benefit of your wood-burning stove by also improving the insulation and draught-proofing of your home.

It is pointless creating lots of extra heat, only to let it leak outside. Just make sure that you maintain sufficient ventilation to provide a decent draw.

size of the engine, the aerodynamics of the design and the type of fuel will all have a big impact on fuel economy, but ultimately putting your foot down on the motorway is likely to be a major factor, too.

In this section, we will look at the role of efficiency when choosing your stove. There is more information on running your stove efficiently in chapter 5.

Finding an efficient stove

How do you go about finding an efficient wood-burning stove? The obvious starting point is the manufacturers, who will usually declare the efficiency of their appliance in the promotional material accompanying it. This will be in the form of a percentage and is aimed at informing you how much of the fuel you burn on that particular appliance will be used to heat your home, and how much will be lost during the burning process.

If you see an appliance that boasts 80% efficiency that means 20% of the potential energy in the fuel you are burning will be lost. Most commonly this will be because the gases are escaping up the chimney before they have ignited. Losing a chunk of your fuel in that way might not sound very appealing but, by way of comparison, an open coal fire has an efficiency rate of around 25%, which means that 75% of the energy is lost.

Most wood-burning stoves have efficiency of between 70 and 80%. Some appliances can achieve up to 87% efficiency, while pellet stoves can be further efficient still.

The efficiency testing process

Unfortunately, many of the problems we encountered in the heat output testing process discussed in the previous section are equally applicable when it comes to testing stove efficiency. Manufacturers are given a lot of leeway when it comes to choosing the circumstances and variables around the test.

The testing process is usually carried out by independent energy consultancies, which work towards criteria set out by British and European standards bodies. Nonetheless, the regulations relating to the testing process leave plenty of room for maneuver.

Here are some of the variables that a stove manufacturer can dictate before their appliance is tested:

- the heat output at which the stove will be tested
- the size of the fuel being burnt during the test
- how often the stove is refueled, as long as it's no more frequently than every 45 minutes

The findings - and the efficiency percentage declared at the end of the test - are based upon measurements taken from the flue gases. The tester knows the weight of fuel that is being burned during the test. They can then measure the temperature and carbon content of the flue gases to establish how much of the fuel loaded into the stove has been wasted.

Unreliability of stove efficiency figures

As we've already established, stove manufacturers are free to choose many of the conditions relating to the test of their appliances. Opting for a low heat output, a long refueling period and limiting the air supply by closing the vents can help a manufacturer create an environment in which to achieve the efficiency figures they want.

Given that two manufacturers might choose to configure the test in completely different ways, it becomes very difficult to get a like-for-like comparison between two different stove brands. It is just as hard to gauge which appliance will perform most efficiently in the environment in which you plan to use it.

However, there is a somewhat level playing field with regard to the test. After all, if all manufacturers are given free-rein to conduct the test as they see fit, at least you know that they have all had the same opportunity to create optimum conditions for their stove, so perhaps it is possible to create some sort of pecking order on the basis of the efficiency figures.

Judging efficiency for yourself

If you would rather not depend on the slightly unreliable stove efficiency percentages, there are some rules of thumb that you can use for yourself. The first, and arguably the most effective, is to seek out reviews for an appliance that you are considering buying. People who have already bought the stove often freely volunteer information on whether they feel they have been getting value for money, how often they have been adding fuel and whether an acceptable amount of heat is being produced.

Another option is to look for stoves that are DEFRA-approved. As we discussed earlier in the book, appliances that have been granted approval for use in smoke control zones must have demonstrated that their emissions do not affect air quality. Low emissions mean an efficient burn.

With that in mind, you might also choose to find a stove that includes clean-burning technology, which also indicates that the manufacturer has given consideration to keeping emissions to a minimum. In this case, take care to ensure that the stove does include the technology you think it does - it can be easy to get bamboozled by branding and product names that sounds like they probably are clean-burning. Double-check before you buy.

Stove brands

The continuing rise in the popularity of wood-burning stoves inevitably means that manufacturing them is becoming an increasingly popular business. That means there is now incredible choice when it comes to selecting and buying the right stove.

The brands available range from companies that have been making stoves for decades (and centuries in some instances), to relatively new manufacturers doing very exciting things.

In this section, we will run through some popular brands of wood-burning and multi-fuel stoves, with a very brief introduction to the sort of appliances they make. You won't be able to choose your stove based on the information here, but perhaps it will pique your interest enough to find out a bit more about a particular brand and to see its stoves for yourself.

Aduro



Aduro Asgard 2 DEFRA Wood Burning Stove

Aduro is a Danish stove manufacturer and brings a distinctly Scandinavian design aesthetic to every stove in its range. They focus on environmentally friendly, modern stoves at attractive prices. They estimate that there are currently more than 100,000 Aduro stoves installed across Europe.

Arada



**Aarrow Ecoburn Plus 7 kW Flexifuel Multi-fuel
Wood Burning Stove**

Arada specialises in a sleek, contemporary stoves that are made from steel. Its stoves are released under three different brand names. Aarrow is Arada's flagship collection, which includes a number of appliances that are instantly recognisable by their modern lines and minimalist detailing.

Their Stratford range boasts similar aesthetics to the Aarrow stoves, but comprises boiler stoves rather than multi-fuel appliances. The Villager range is slightly more traditional in appearance, but still maintains the unfussy, simplistic look.

Arizona



Arizona Montana Matt Black 659 8 kW Multi-fuel DRY Stove

This brand takes its names from an American state and all the appliances in its range are also place names in the USA. Arizona specialises in multi-fuel stoves. In terms of design, you could say they are no-nonsense. If someone asked you to draw a picture of a wood-burning stove, it would probably look like an Arizona stove. They do throw in the occasional curveball, such as brown and cream enamel finishes on some models but, for the most part, they are classically styled stoves.

Carron



Carron Dante 5 kW Red Enamel DEFRA Multifuel Stove

Carron are a very interesting brand. Few stove manufacturers can boast their heritage, which dates back to 1760. In those days the company was based in Stirlingshire, but they now operate from Lincolnshire. They are cast iron specialists rather than just stove specialists, and also make fireplaces and radiators.

Carron stoves are easily identifiable by the array of colours on offer. As well as the traditional black, you can also buy Carron stoves in blue, red, green, grey, cream, white and a host of other colours. Despite the variations in finish, Carron currently offers a very select range, featuring just three models.

Dimplex



Dimplex Westcott 8 Multi Fuel Wood Burning Stove

Dimplex is a well-known name within the heating industry, operating across electric fires, gas fires, fireplaces and stoves. Within the stove market, they focus on doing a small number of appliances well. Within the limited range they cater for a variety of different styles and tastes, from classic stoves to eye-catching modern designs. All Dimplex stoves feature a quality cast iron construction.

Evergreen



Evergreen ST0406GS Poplar 8 kW Multi-Fuel Stove

Evergreen stoves offer traditionally-styled wood-burning stoves at a very reasonable price. The classic look is enhanced by some of the ornate detailing that is included within the cast iron body. This decoration is a common theme throughout the Evergreen range.

The prices compare favourably to most other stove brands, with Evergreen appliances offering an impressive amount of heat output in relation to their cost. All of which makes Evergreen a great option for a timeless wood-burning stove that won't break the bank.

Firebelly



Firebelly FB1 Black 6 kW Wood Burning Stove

Firebelly stoves are among the most distinctive appliances currently on the market. Each stove in the range features a large, almost full door-size glass panel. That, coupled with full length rounded legs, ensure that Firebelly appliances stand out from the crowd and gives the range a very modern feel.

GBS



GBS Mariner 7 kW Multi-fuel Stove

GBS, or Great British Stoves, offers minimalist, modern stoves at an affordable price. The centrepiece of the GBS range is the Mariner, which is available in a few different sizes and versions. As its name suggests, it was originally aimed at boat and barge owners, but it has since moved beyond that to become a popular appliance on dry land, too.

GBS stoves are made using top quality steel, which enhances the modern design features.

Hunter



Hunter Hawk 4 Wood burning / Multi-fuel stove

Hunter stoves are both traditional and high-end. Hunter has been making appliances in Devon for more than 40 years. The heritage of the design goes beyond even that, with the brand priding itself on combining the best of stove design over the past 100 years with the very latest wood-burning technology.

Invicta



Invicta Chamane 14 kW Wood Burning Stove

French-brand Invicta specialises in modern stoves that push the boundaries of woodburner design. Some look vaguely like stoves, but many of their appliances look more like sculptures or installation art. This range is all about eye-catching designs, with a focus - though not an exclusive one - on freestanding appliances.

Invicta is building its brand in its homeland. If you ever watch French sport - football or rugby - look out for their logo because they sponsor a number of teams.

Mazona



Mazona Rocky 6 kW Multi-fuel Stove

Mazona stoves are perhaps the best value stoves on the market. Certainly they offer some of the cheapest stoves you are likely to find and, given that some of them offer impressive levels of heat output, that adds up to a good value appliance.

Stoves in the Mazona range tend to be fairly traditional in appearance. They are all constructed from cast iron and feature classic detailing. But they also incorporate the latest clean-burning technology.

Stovax



Stovax Brunel 3CB Matt Black Multi-fuel Stove

Stovax have been designing and making stoves in Exeter since 1981. In that time, they have become established as one of the best known stove brands on the market. Although the range features both traditional and contemporary designs, Stovax are arguably better known for their classic appliances.

Thorma



Thorma Falun 8kw Wood Burning Stove

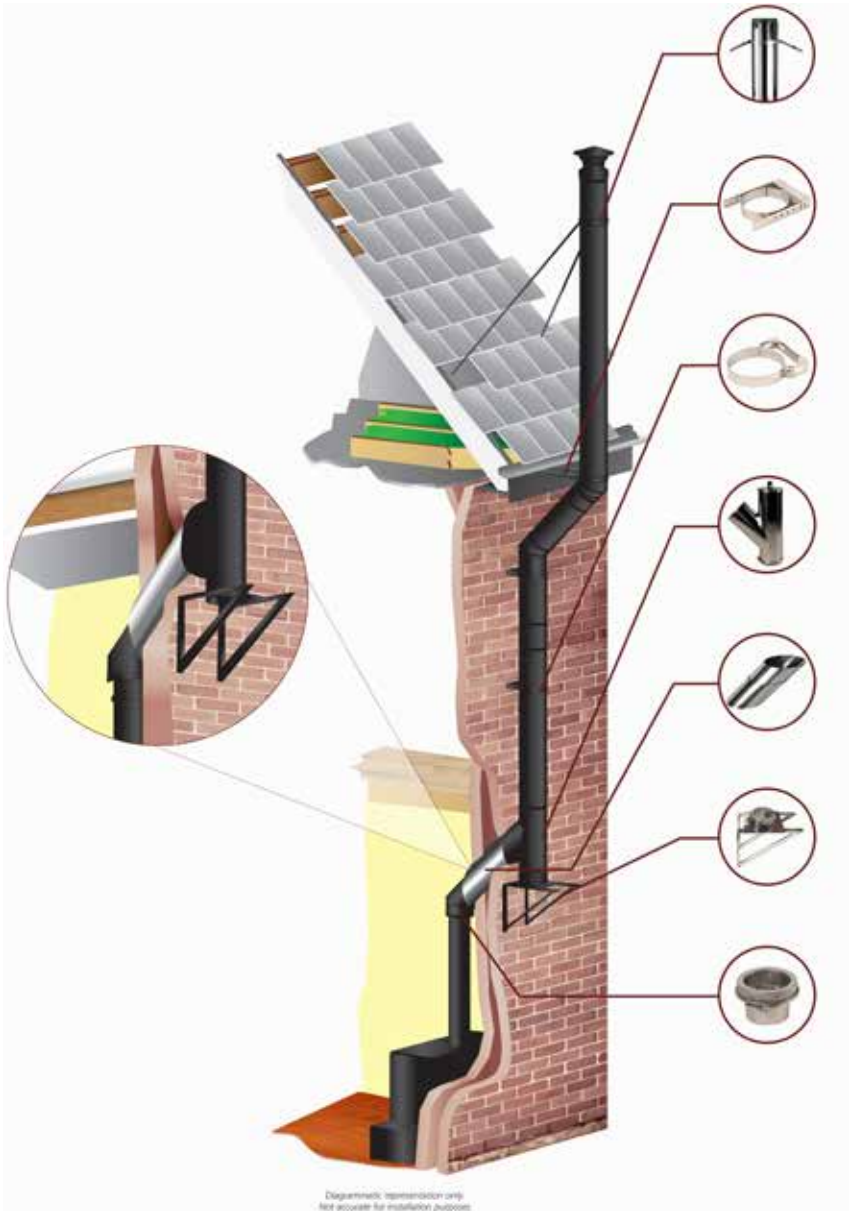
Thorma is a Slovakian stove manufacturer established in 1998. Their designs offer something quite distinct from most other appliances available in the UK. Thorma stoves offer high efficiency and low entry cost in relation to the care that has gone into the unusual and modern designs.

Yeoman



Yeoman CL5 Multi-fuel 4.9 kW Stove

Yeoman was an independent stove manufacturer set up on a farm near Dartmoor before being bought by Stovax in 2006. It continues to operate as a separate brand, with its own designs and collections, but has since established itself as one of the UK's top stove brands.



Buying a Flue for your Stove

The last chapter may have helped you to select your stove, but there is still the issue of a flue to address. Often people find matters relating to flues and chimneys equally confusing as the stove itself, if not more so. There is a lot of uncertainty about what is and isn't required. If you have got lots of questions about the part a flue might or might not play in your stove installation, we will attempt to answer them in this chapter.

What is a flue liner?

A flue is a pipe that connects your stove to the outside world in order to evacuate fumes and gases through your chimney. Flues are not unique to wood-burning stoves – they are also used with gas fires and other appliances. However, the specific grade of flue used with wood-burning and multi-fuel stoves is specialist. The type most commonly used in stove installations is made from 316 grade stainless steel, which is suitable for wood-burning stoves or multi-fuel stoves that will be burning coal occasionally.

Another common type of flue is 904 grade stainless steel, which is higher grade and often comes with a longer guarantee. It is most commonly used with boiler stoves because it is thicker and can stand up to more punishment from the stove being used inefficiently, which is the case when an appliance is being slumbered and 'kept in' overnight. This is also a good option for any multi-fuel stoves that will be predominantly used to burn coals. Burning solid fuels other than wood creates more acidic by-products that could potentially cause corrosion to the flue system. The higher grade 904 is better suited to withstand this.



TOP STOVE TIPS

A double-skinned flue liner should be used with both wood-burning and multi-fuel stoves. These are manufactured from overlapping strips of high grade stainless steel.

Single-skin liners should only be used in conjunction with gas appliances.

Do I need a flue?

Most stove installations are carried out in an existing fireplace, which leaves some people wondering whether or not they need to run a flue the full height of their property when they have a perfectly good chimney.

This is ultimately a decision that you will have to make on the basis of the safety and efficiency of your appliance. Installing a flue liner (sometimes called a chimney liner) inside an existing chimney does have some key benefits:

1. Protection from gas leaks

If you opt to run a small length of pipe from the appliance through a register plate (a plate that seals the bottom of your chimney other than a hole through which the flue pipe passes) and then rely on the existing chimney to act as a flue you are placing a lot of trust in the quality of the brickwork.

If there are gaps or holes in the brickwork, or problems with the pointing, there is a danger of gases, including deadly carbon monoxide, leaking into rooms adjoining the chimney or the loft of your property.

Of course, a fireplace that has been functioning perfectly well as an open fire is unlikely to cause any additional problems once a stove fitted. Most properties built from the mid-1960s onwards had a concrete or clay liner placed inside the chimney and are less susceptible to leaks than older properties.

TOP STOVE TIPS

A good chimney draw is created by the difference in air pressure between the appliance and the top of the chimney, the difference in temperature between the flue gases and the air outside, the quality of insulation along the length of the chimney and the route of the chimney (straight and vertical is best).



Nonetheless, it is worthwhile conducting a smoke test to check for any problems. To do this, the chimney must first be swept to ensure the test complies with building regulations. During the test, it is important that all doors and windows are closed. Pellets can then be lit in the fireplace or the stove, if it is already in situ. Once smoke can be seen leaving the flue properly, the top of the flue should be sealed. The stove door should also be closed or the fireplace opening blocked.

With no other exit available, the smoke held in the flue should escape through faults in the chimney, if there are any. Obviously, if smoke escapes into adjacent rooms then a flue liner is definitely required.

2. Reduced chance of creosote build-up

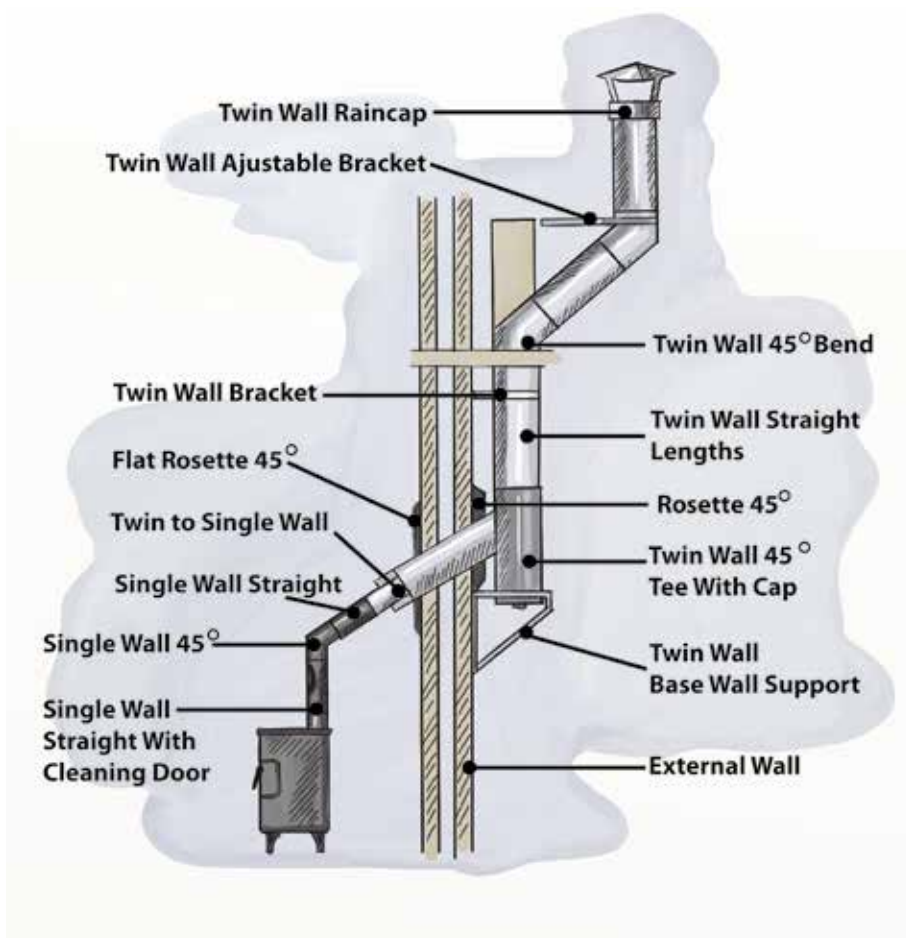
Most open fireplaces were designed with coal-burning in mind. Wood burns at a lower temperature than coal, which means the gases released during the burning process cool and condense more quickly than those released when coal burns. Once the gases condense, they are likely to settle inside the chimney and create a build-up of creosote.

Creosote can not only spread through the chimney breast and cause unsightly stains on the inside of your rooms, it also increases the risk of chimney fires. Flue liners are designed to evacuate the gases as quickly as possible. They also have a smooth surface on the inside to make it harder for tar and soot to settle and turn into creosote.

3. More efficient burn

Although not quite as alarming as carbon monoxide leaks or chimney fires, efficiency savings are another potential reason for lining an existing chimney. As we mentioned, flue liners are designed to evacuate gases more quickly than open chimneys.

This is because the width of a flue liner is less than an open chimney, so the air is 'pulled' more strongly towards the outside. This creates a better draw for your stove, which means it is likely to light more easily and burn more effectively, while also being easier for you to control with the air vents. This efficient burn also reduces the amount of ashes created when the stove is in use.



Example of a twin wall flue installation

What if I don't have a chimney?

If your property doesn't have a chimney, or if you're choosing to install it away from an existing fireplace and chimney breast, you will need a twin wall flue rather than a flue liner.

A twin wall flue, also known as an insulated steel flue, would essentially become your chimney. A twin wall flue is made of two stainless steel fluepipes. This is where the 'twin walls' in its name come from. There will be at least an inch of insulation between the two layers. There are two main reasons for this layer of insulation.

Firstly, it ensures that the outer layer of the flue remains cool. Since a twin wall flue is replacing a chimney, it will either have to run through your house to the roof or through an external wall and up the side of your house. In either case, it would be dangerous to have a hot flue pipe exposed. The insulation ensures the outer wall of the flue does not reach high temperatures.

Secondly, the insulation helps to keep warmth inside the inner flue and maintain its temperature. This helps to avoid flue gases cooling, condensing and leaving behind deposits of tar or creosote, which would be a real danger with a standard flue pipe running outside the property on a cool winter's evening. Instead, the thick layer of insulation ensures that the flue gases stay at a high temperature and don't condense until they are outside the pipe.

TOP STOVE TIPS

Pumice stone is a very popular material from which to construct new chimneys.

It is lightweight, a natural insulator and does not expand or contract with temperature changes, which makes it an ideal candidate to operate alongside a wood-burning stove.



If a twin wall flue isn't for you, another option is to have a chimney built. Clearly, this is not a job that you want to undertake lightly. It will push up your installation costs considerably but you might consider that to be worthwhile to achieve the look you want or to add value to the property.

From an aesthetic point of view, you might consider building a chimney to be preferable to running a twin wall flue up the outside of your property.

What size flue liner do I need?

When you are choosing a flue, the first thing to remember is that the width of the flue should never be less than the flue outlet size of the appliance. You can get an adaptor to connect from a smaller outlet to a larger flue if necessary, but it is against the building regulations to have a flue liner that is smaller than the outlet. Reducing the flue size in this way prevents the chimney from being able to draw effectively. This might result in your stove overheating or pumping carbon monoxide and other gases into your home.

Most stove fitters recommend a 5 or 6 inch flue pipe, but this will ultimately be dictated by your choice of appliance. The recommended internal size of a flue liner is 185mm sq or 200mm round.



TOP STOVE TIPS

Pumice stone is a very popular material from which to construct new chimneys.

It is lightweight, a natural insulator and does not expand or contract with temperature changes, which makes it an ideal candidate to operate alongside a wood-burning stove.

What type of flue do I need?

Hopefully the information above has already answered this question for you but, in short, if you have an existing chimney you need a stainless steel flue liner. If you do not have a chimney or intend not to use the chimney in your stove installation, you will need a twin wall flue.

Remember, the installation of your flue is bound up by the building regulations that govern every aspect of wood-burning stove installation, so it is important that your flue is fitted in accordance with the law. We will explore this in more depth in the next chapter.

4. Installation

Once you have chosen and bought your stove, it is time to get it up and running in your home. That means installing it. You can think of stove installation as similar to marriage - it is much easier and cheaper for everyone concerned if you manage to get it right at the first time of asking.

For that reason - and it differs from marriage here - it is perhaps a good idea to get the professionals involved. We will explore the role of HETAS - approved stove installers later in this chapter, but they are ideally placed to perform a safe, legal and efficient installation, which is essentially what you want when you are getting a woodburner.

If you end up with an installation that is unsafe, illegal or inefficient - either through DIY or by using a cowboy installer - the costs will always end up being greater in the long run and the consequences could be fatal.

So, let's look at the legal requirements of your installation.

Regulations

Wood-burning stove installations are covered by the Building Regulations 2010. In particular, they fall within the remit of something called Document J which, as you can imagine, is a piece of government literature that makes for pretty dry reading. Although it is not particularly interesting, it is important to ensure that your household stays safe and on the right side of the law by following it to the letter. We will run through some of the main regulations relating to stove installation found in Document J. It is worth bearing in mind that a HETAS-qualified installer will already be well versed in these matters and that the guidance here does not cover every regulation and eventuality covered within Document J.

gr8fires
.co.uk
IMPORTANT SAFETY NOTICE
This data plate must not be removed or covered

1. Property at	
2. The chimney/flue/hearth located in the	
3. The chimney is	
4. and has been relined with	
5. Chimney designation	Flue size:
6. The chimney is suitable for	
7. Is the flue suitable for condensing appliances	
8. Hearth suitable for	
9. New appliance installed is a	
10. Date of installation	Ref:
11. By	
12. Other information	

Get the heating appliance & chimney checked annually by a competent contractor.
If burning solid fuel it is essential the flue is swept regularly.

Notice plates

The building regulations state that a notice plate must be fitted as part of a stove installation. Indeed, one should be displayed permanently whenever a hearth or flue has been fitted in a building.

A notice plate is a sign that must show:

- the address of the property
- where in the property the hearth or flue is installed
- the type of installation
- the installation date
- the type, size and manufacturer of the flue
- the type of appliances that can be safely accommodated by the flue
- the type of appliances that can be safely used on the hearth

It is important that the notice plate is robust, which means they are usually made from metal. It is also compulsory that they are indelibly marked and fixed.

Recommended locations for permanent placement of the notice are:

- Next to the electricity consumer unit/meter
- Next to the chimney or hearth described
- Next to the water supply stop-cock

Carbon monoxide alarm

The building regulations make it a legal requirement to fit a carbon monoxide alarm with any new wood-burning stove installation. This will be discussed in more depth later in this chapter.

Installation

To ensure your stove installation complies with the Building regulations you must call upon your local Building Control officer to sign-off on your job and confirm that it meets all the requirements. This usually costs between £120 and £300, but the fee varies between different local authorities. The alternative is to use the services of a HETAS-approved installer, who can self-certify that the installation is in line with the Building regulations. The role of HETAS is explored at great length later in this chapter.

Relining your chimney or building a new chimney (even with a twin wall flue) officially constitutes building work and Building Control must be notified before work begins. This is in addition to any requirements you may have to meet in order to comply with local planning restrictions.

TOP STOVE TIPS

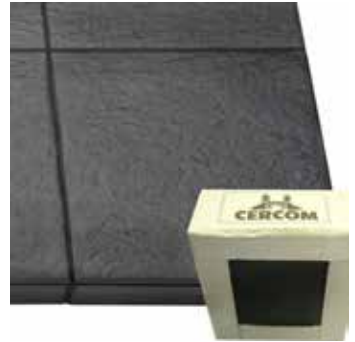
A loose-fill insulation, such as Vermiculite, can be poured into the gap between your flue pipe and chimney brickwork.

This will keep the temperature high inside the flue, which delivers a more efficient burn and reduces the risk of creosote build-up by stopping flue gases from condensing.



Hearth

The building regulations give precise instructions as to the size and thickness of a hearth. A hearth acts as a non-combustible surface on which the stove can sit in order to protect any combustible materials below.

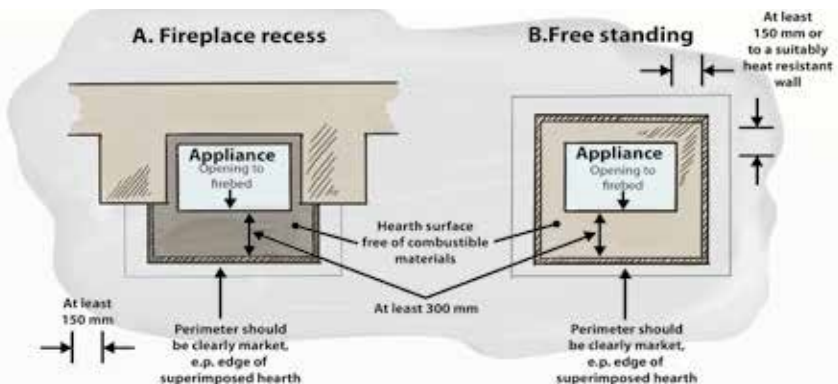


**Riven Graphite Black
Hearth Single Tiles**

The regulations around hearths vary depending on whether your stove is being installed into an existing fireplace recess or as a freestanding appliance.

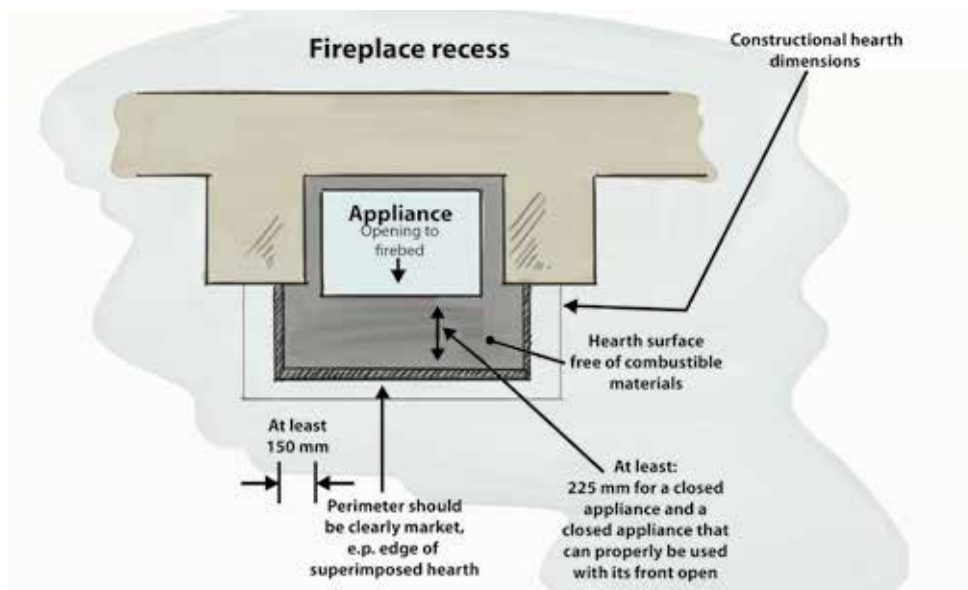
If your stove is freestanding and certified to not heat the hearth underneath to more than 100°C, then no constructional hearth is required. You will just need:

- a minimum 12mm thick non-combustible hearth placed directly onto the floor.
- a minimum hearth size of 840mm x 840mm.
- a minimum gap of 150mm between the stove and the rear and side edges of the hearth
- a minimum gap of 225mm (ideally 300mm) between the stove and the front edge of the hearth



Regulations for hearths if stove is freestanding and certified to not heat the hearth underneath to more than 100°C,

If the stove is freestanding but is not certified to keep the hearth temperature below 100°C then the rules of a stove being inserted



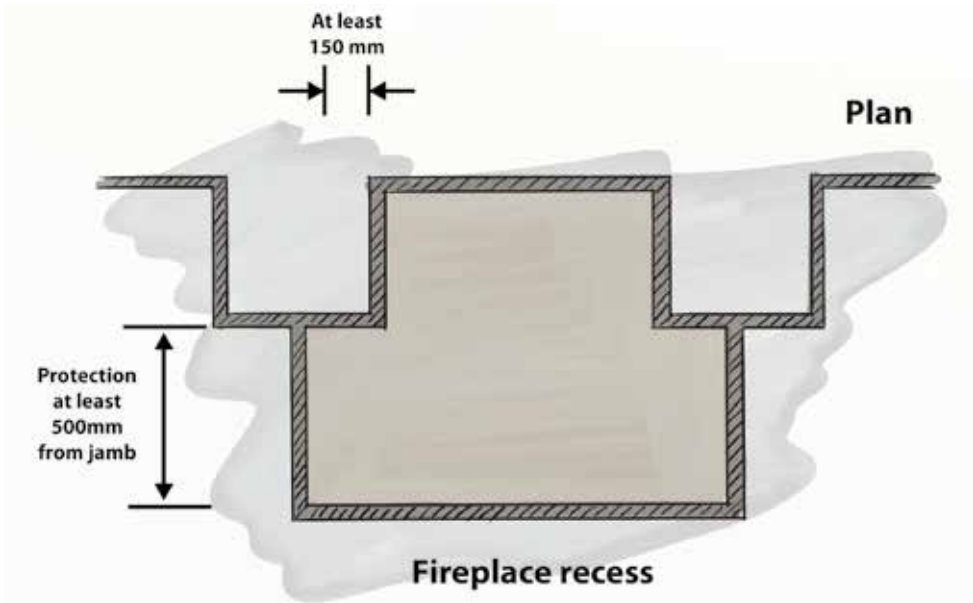
Regulations for hearths if stove is freestanding but not certified to keep the hearth temperature below 100°C

into a fireplace apply, including the need for a constructional hearth (there are more details on these below).

If your stove is being fitted into a fireplace recess, then it will require a constructional hearth unless your appliance has been certified to keep the hearth temperature below 100°C. If it meets that criteria then a 12mm hearth will suffice.

Most installations into fireplaces recesses will require:

- a constructional hearth that projects a minimum of 500mm into the room and is a minimum of 150mm wider than the recess at the point it opens into the room
- that the hearth is a minimum of 250mm thick (or a minimum of 125mm thick if there is then a further 50mm air gap before any combustible materials)



Regulations for a constructional hearth

Some installations require the addition of a constructional hearth. This is a hearth made from a non-combustible material (usually concrete) to protect a combustible floor from the stove. Often it will be sunk to achieve the required thickness at floor level, but it can also be fully or partly above floor level. Finishing the constructional stove level with the rest of the floor allows for the addition of a superimposed or decorative hearth on top. The thickness of this superimposed hearth can be included towards the total thickness required in a constructional hearth.



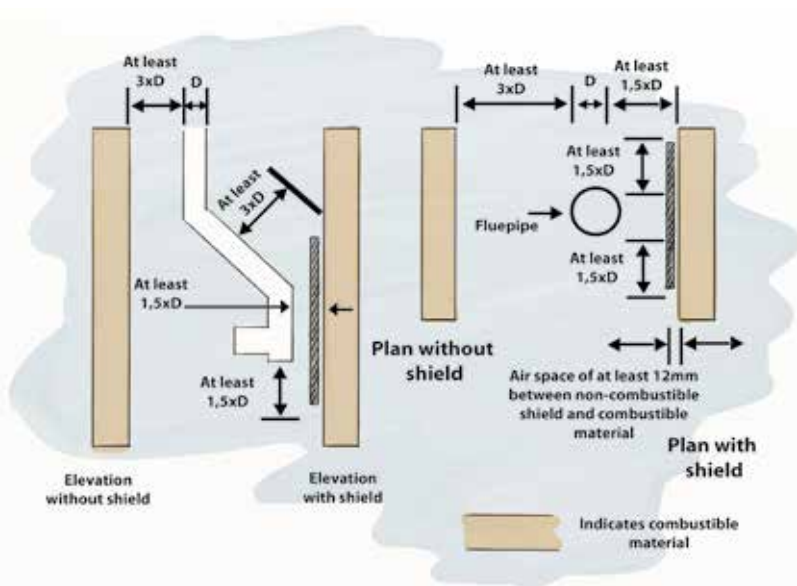
54 inch Black Granite Hearth For Solid Fuel

The edge of the hearth must be at a different level from the rest of the floor to clearly define a safe perimeter that anyone in the property can see it must be kept clear of flammable objects.

Flue regulations

When lining an existing chimney, you must submit an application to Building Control before work starts on lining a chimney (unless you are using a HETAS-approved engineer). Flexible chimney liner may only be used to reline existing chimneys. It must be used in accordance with the manufacturer's application and fitting instructions. For example, you cannot use a gas flue with a wood-burning stove. The flue liner must be installed in one continuous length with no joints within the chimney.

Distance to combustibles and heat shielding



Shields should either:

- extend beyond the fluepipe by at least $1,5xD$, or
- make any path between fluepipes and combustible materials at least $3xD$ long.

Clearance measurements required for your flue outlet

A standard single wall uninsulated flue pipe must be positioned at least three times its diameter from combustible materials. So, a 150mm (6 inch) flue must be at least 450mm (18 inches) from anything that is flammable. Given that flue measurements are given by their internal diameter, it is worth leaving a few extra millimetres to ensure you are on the right side of the law.

An alternative option - if it is impossible or impractical to keep the flue pipe three times its distance from a combustible material - is to instead protect it with a heat shield. This is most commonly achieved by placing fireboard over the combustible material. The flue must still be at least one-and-a-half times its external diameter away from the heat shield. And the heat shield must extend at least one-and-a-half times the flue's external diameter to each side of the flue. There must be an air gap of at least 12mm between the combustible material and the shielding material.

Some fitters are happy to fit the heat shielding around the flue rather than around the combustible material for aesthetic reasons. For instance, it might be preferable to place heat shielding material around the pipe rather than have it hanging in sight below a wooden mantel. It is worth noting that there is some debate as to whether or not this is compliant with building regulations.

Bends

There must be no bends greater than 45° and no more than four bends in total in your chimney. If you are incorporating four bends, you must have a soot door between the second and third bends.

Single wall flue

Single wall flue pipe must not pass through any roof space, floors or internal walls.

Twin wall flue

If a twin wall flue passes through a cupboard, storage space or roof space, a guard must be placed not closer than 50mm to the flue. This is usually achieved by boxing in the flue pipe.

Flue sizes

Building regulations stipulate that the diameter of your flue pipe must not be less than the size of the stove outlet.

The minimum flue diameter for stoves are given as:

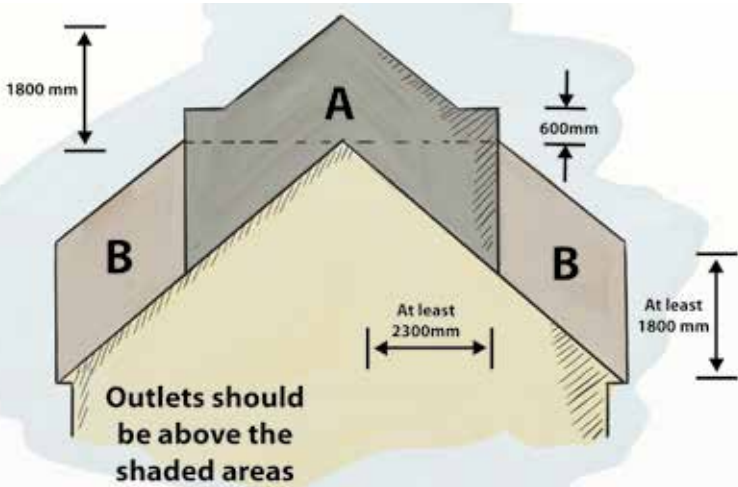
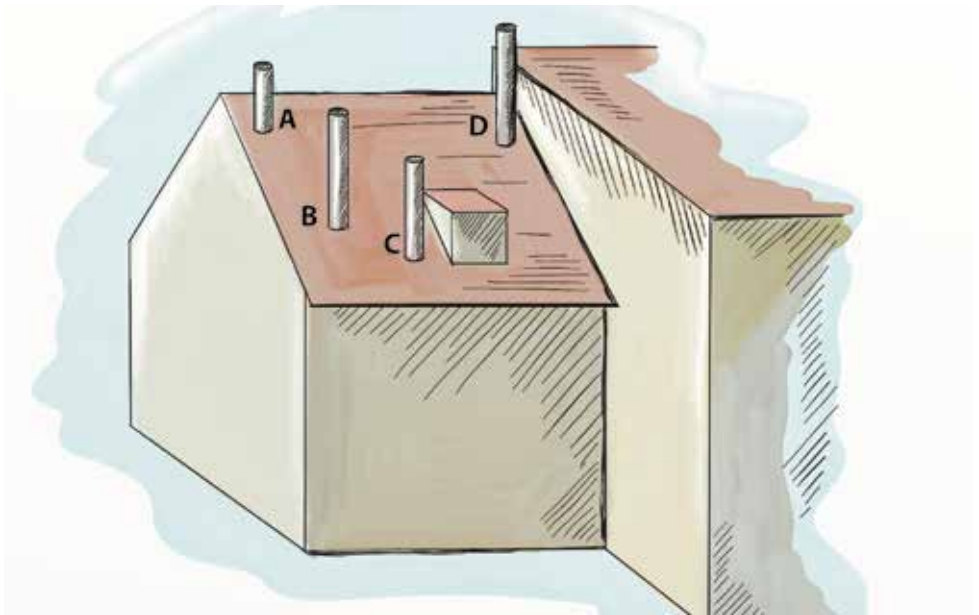
- 125mm for smokeless fuel being burned up to 20kW
- 150mm for any fuel being burned up to 30kW

In other words, 150mm (6 inches) is the minimum flue size if you plan to burn wood. In practice, many fitters refuse to install a flue that is smaller than 150mm on a solid fuel appliance for safety reasons (for instance, if somebody inadvertently burned a solid fuel that was not smokeless).

Flue outlets

The height at which the flue exits your property is also governed by regulations. The gases must be able to discharge from the flue without causing a fire hazard in all wind conditions. This requires a good draw, which means that the flue outlet must be raised away from the roof to ensure it gets consistent air flow.

The clearance measurements required for your flue outlet depend on whereabouts on the roof the flue terminates. In the simplest terms, the horizontal distance from the top of the flue pipe to any part of the roof should be at least 2300mm or above the ridge of the roof. The exception is if the flue termination is within a 600mm horizontal distance of the ridge, in which case the flue should be at least 600mm above the ridge.



A → At least 1800mm vertically above the weather surface and at least 600mm above the ridge

B → At least 1800mm vertically above the weather surface and at least 2300mm horizontally from the weather surface

The measurements should be taken to the very top of the chimney, not including any rain caps, bird guards or other fittings that protrude further than the end of the flue.

This delivers the following approximate recommended flue outlet heights on properties where the flue outlet is not near the ridge.

Roof pitch	Flue outlet height above roof penetration
25°	1070mm
30°	1330mm
35°	1610mm
40°	1930mm
45°	2300mm
50°	2740mm

These figures are applicable to non-combustible roof materials only. For combustible roofing, such as thatch, the height of the flue outlet should be at least 1800mm above the roof when not close to the ridge where the roof pitch is less than 38°. If the pitch is greater than 38°, the outlet height should be sufficient to give a 2300mm horizontal distance back to the roof. These figures work to the assumption that the flue is not close to the ridge.

Ventilation for stoves

Wood-burning stoves need ventilation to the room in which they are operating in order to burn effectively and to ensure that smoke is drawn up the chimney and evacuated through the flue outlet. Without adequate ventilation, the smoke and gases that are supposed to disappear up the flue pipe may instead leak out of the stove and into your home.

You can put this to the test if you are experiencing problems with smoke seeping into the room or with the stove not burning efficiently by simply opening a window. If the air drawn in through the window solves the problems, it is an indication that the room needs more ventilation in order for your stove to function properly.

If you do not like the idea of adding more ventilation and the draughts that would accompany it to your room, you might prefer to consider an external air stove, which were discussed in chapter 2.

A minor ventilation problem might be overcome with the addition of a chimney cowl. You can read more on this in chapter 7.

The correct amount of ventilation needed in a room is dictated in the building regulations, which state what size of vent is required based on the air permeability of the property and the heat output of the stove.

These are:

Air permeability of more than $5.0\text{m}^3/\text{h}\cdot\text{m}^2$

550mm^2 for each kW above 5kW

Air permeability of less than $5.0\text{m}^3/\text{h}\cdot\text{m}^2$

550mm^2 for each kW



TOP STOVE TIPS

Place any new vents as close to the stove as possible. The purpose of the ventilation is to create air flow to be drawn into the stove and up the chimney.

Positioning the vent near to the appliance reduces air movement and draughts across your room, which will minimise any adverse effect on the temperature.

The figures change if you have a draught stabiliser fitted to your stove:

Air permeability of more than $5.0\text{m}^3/\text{h.m}^2$

300mm^2 vent for each kW up to 5kW

850mm^2 vent for each additional kW .

Air permeability less than $5.0\text{m}^3/\text{h.m}^2$

850mm^2 vent for each kW

A hole of 3cm x 2cm will give you 600mm^2 of ventilation, which will exceed the requirements for a 5kW stove in most properties. The vent must be permanently open, should not be easily blocked and, if covered in mesh, the holes in the mesh must be no smaller than 5mm.

The vent can be positioned in the walls or the floor of the property. It does not have to ventilate directly outside. Instead, you can add a vent to an adjoining room, as long as that room has external ventilation.

Most properties built post-2008 will have had an air permeability test, which you can consult. For homes built before 2008, it is very unlikely that the air permeability is less than $5.0\text{m}^3/\text{h.m}^2$ unless a significant amount of draught-proofing has been undertaken.

It is important that you meet these regulations - either through Building Control or through a HETAS approved installer - or you could find yourself liable if any damage is caused to property or another person through your faulty installation.

Equally, when you sell the property, the buyer's solicitor may well ask for evidence of building regulations compliance, which would only come from a HETAS installer or Building Control officer's certificate.

Remember, the information above is given as an introductory guide and is subject to change. The regulations may vary slightly in Scotland and Northern Ireland compared to the regulations for England and Wales.

There is no replacement for reading through Document J - Combustion Appliances and Fuel Storage Systems of the Building Regulations 2000 for yourself or consulting a HETAS-approved installer.

HETAS-Approved Installers

Most people know that when they are getting gas work done in their home, they should contact someone who is on the Gas Safe Register (formerly CORGI register) if they want to avoid appearing on an episode of Watchdog at some stage further down the line. Unfortunately, far fewer people realise that if they are having work undertaken that relates to solid fuel, such as a wood-burning stove installation, it is best to call upon the services of a HETAS-approved installer.

HETAS is the official Government-recognised body for – among other things – the registration of competent installers and servicing businesses for biomass and solid fuel domestic heating appliances. A HETAS-approved installer has gone through a competent persons registration scheme, which involves a training and assessment programme to confirm that they are compliant with best practice in the installation of solid fuel appliances. This



TOP STOVE TIPS

A HETAS-approved installer won't - or at least shouldn't - sign-off your DIY installation as being compliant with building regulations.

They are only allowed to certify work that they themselves have undertaken.

means they will be well versed in the finer points of the building regulations we discussed in the previous section. They will also ensure a safe, legal and efficient installation because that is what they have been trained to do.

A HETAS-approved installer is also able to self certify that they have installed your stove to a standard that meets all of those requirements, which means you can avoid having to pay your local Building Control officer to conduct an inspection.

If you use an installer who is not approved by HETAS, you will still have to get the installation signed off by Building Control. If they make a mistake, your installation will not be certified as compliant with building regulations. You will be faced with the prospect of trying to get your installer back to correct their errors or starting from scratch with a new installation undertaken by a HETAS-approved engineer.

Carrying out a DIY installation will work out cheaper, but it is worth remembering that you are dealing with poisonous gases, so it is not something that you want to get wrong.

All HETAS-approved installers have an identification card, which you should ask to see before any work gets underway. Once you have verified that they are approved to carry out installations, treat them like your personal wood-burning stove consultant. They deal with these appliances every day, so quiz them with any questions you might have about operating your stove.

Smoke Control Areas

It is hard to imagine now, but as recently as 60 years ago the air quality in UK cities was very poor. Decades of urban growth

had continued almost unchecked since the start of the Industrial Revolution, with serious consequences for the air quality in those areas. The problem of pollution - and its dangerous impact on both visibility and the quality of air being breathed by residents of the cities - reached its peak with London's Great Smog of 1952.

At that point, the government set the wheels in motion for a piece of legislation that is still with us today. The Clean Air Act 1956 came into effect four years later and banned the use of coal for domestic fires in built-up areas.

Those smoke control areas are still in existence, which means many people living in large towns and cities are prohibited from burning coal. Fortunately, it is now possible to sidestep those laws thanks to DEFRA approved appliances. As we learned in chapter 2, these are stoves that have been granted exemption from the Clean Air Act 1956 by the Department for Environment, Food and Rural Affairs.

DEFRA's website lists which fuels each appliance has been granted exemption for based on what tests have been carried out on it. This might be wood logs, coal or specific types of smokeless fuels.



TOP STOVE TIPS

A quick telephone call to your local authority should clarify whether or not you live in a smoke control area.

Asking to speak to the Environmental Health or Protection department is your best bet.

If you live in a smoke control area and want an appliance that is not currently DEFRA exempt, an alternative option is to burn an exempt fuel. DEFRA also tests fuels to verify that they are suitable to be used in smoke control areas. If you have a DEFRA approved fuel, you can burn it on any appliance.

In short, if you live in a smoke control area you can definitely still have a wood-burning stove. It is probably worth double-checking whether or not you are in a smoke control area with your local authority. That gives you the opportunity to pick the best option for you and your home.

Carbon Monoxide and Safety

One of the main reasons for paying such close attention to your stove installation is the danger posed by carbon monoxide. Like any appliance that burns fuel, a stove produces carbon monoxide. If your installation is faulty, there is a risk that this dangerous gas will leak into your home. It is now a legal requirement to have a carbon monoxide alarm operational with any new wood-burning stove installation, but a better option is not to have a carbon monoxide leak in the first place.

The flue, or chimney if you are not lining it, and the various connections in your stove and flue system are the points that are most susceptible to a carbon monoxide leak.



TOP STOVE TIPS

Even if your woodburner has a built-in log store underneath it, you must not store logs in it when the stove is in use if you want to comply with building regulations and keep your home safe.

It breaches the regulations relating to the proximity of combustible materials to your appliance and poses a fire risk.

Fireplace Considerations

Many of the considerations that you will need to take into account in relation to your fireplace when installing a stove are tied up in the building regulations relating to hearths, which were discussed earlier in this chapter.

As long as your fireplace complies with those regulations, the other considerations are mainly down to aesthetics. You may opt for a freestanding stove sitting on a relatively shallow hearth, or install your stove within an existing fireplace recess.

Either way, your choice of material for the hearth will have a big impact on the overall appearance of the stove. Popular choices include slate, granite and concrete, although most households with a concrete constructional hearth opt to top it with a more decorative superimposed hearth.

If your stove is going into a fireplace recess, do you want to frame it with a fireplace surround, which will also provide a shelf above your appliance? If you're going down the surround route, you can often buy a fireplace suite, which will provide everything you need.

Again, keep in mind the building regulations and the use of combustible materials at all times when planning your fireplace.

How Much Does it Cost?

Perhaps understandably, the most frequently asked question in relation to wood-burning stove installation is, 'how much will it cost?'. The truth is that there are so many variables at play that it is not easy to reach a definitive figure.

As we touched upon earlier in this chapter, if you fit your own wood-burning stove you will need to notify your local authority's Building Control officer before work gets underway and pay for them to conduct an inspection once the installation is complete to confirm that it complies with building regulations. The inspection usually costs between £125 and £300, but this will vary between different councils. If you are competent to fit your own stove then, even with the inspection cost, a DIY installation will save you a lot of money in comparison to contracting a professional stove fitter.

Of course, the reasons for calling upon the services of a HETAS-approved installer go far beyond financial ones, as we discussed in the previous section. The cost of having your wood-burning stove installed by a HETAS-approved fitter will depend on the circumstances of your property and how complicated the installation process is going to be. For the most basic of installations – for example, if you already had a stove or if you have an existing flue that is suitable for use with your stove – the price could be as little as £450.

The exact cost will depend on your property, but it is probably worth setting aside between £1,500 and £2,500 as your installation budget until you can get an installer to visit your property to give you a more accurate quote for completing the work.

The costs will really start to stack up if major building or restructuring work is required as part of the installation process. If you don't have a chimney and are either building one or adding a twin wall external flue, the installation is not likely to be cheap.

Although a lot of guesswork is involved, you can use this stove installation cost checklist to calculate an approximate installation cost.

Stove Installation Cost Calculator



Need Help Calculating Your Installation Cost? Call us on 0121 271 0221

Stove

[Stove Cost](#)

£

Enter the price of the stove you're interested in buying. If you need help to decide, give us a call.

Flue

[Flue](#)

£

Check if you need a flue. There are various types of flue sections and it very much depends on your own particular installation.

[Twin Wall Flue](#)

£

Twin wall flues are necessary if you don't have a brick build chimney stack. They are necessary if you want to pass through roofs and floors.

[Flue Pipe Connectors and Adaptors](#)

£

You will need flue connectors to join sections of flue together

[Fire Cement and Sealant](#)

£

Great for sealing the joints in the flue and stove connections, giving more control and a better connection.

[Glass Rope](#)

£

A thermal rope seal to seal stove doors and also often used behind stove glass.

[Register Plate](#)

£

Register plates can be used to seal the flue into the chimney or create a ceiling in the fire chamber which prevents heat loss and encourages warm air rising from the stove to go out into the room.

[Chimney Cowl](#)

£

Keep the rain out of you flue and protect against bird nest blockages.

Labour Costs

[Labour Costs](#)

£

It's best to get a registered HETAS approved engineer to install your stove so you get a safe and professional job.

Safety

[Carbon Monoxide Alarm](#)

£

By law these should be installed in the room with every stove. Protect your family and give yourself added piece of mind.

[Stove Mit](#)

£

A durable replacement stove mit, many of our stoves already come with one of these but its great to have a spare as you will find you use it alot.

Maintenance

[Moisture Meter](#)

£

A handy piece of kit, it tells you if your wood is sufficiently dried for burning.

[Rope Glue](#)

£

Use this rope glue to quickly address any stray rope around your stove glass.

[Glass Cleaner](#)

£

Over time the glass will eventually gather a bit of a cloudy ash residue. Use this Stovax glass cleaner to bring glass back to crystal clear perfection.

Total

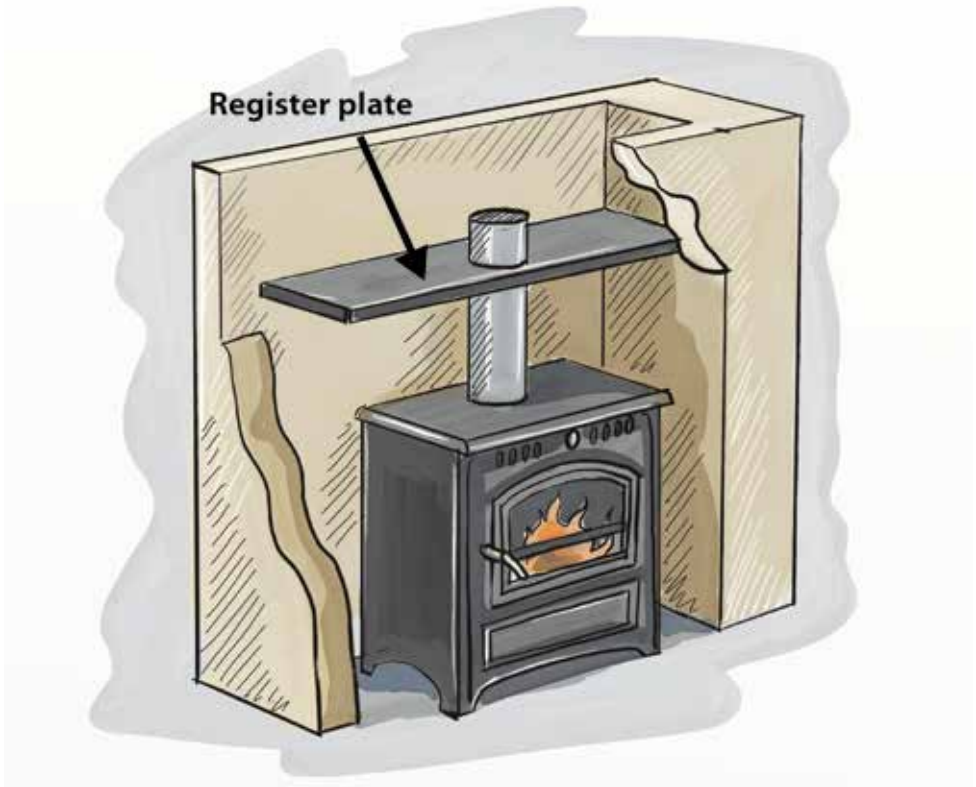
£

Common installation problems

By now, hopefully you know what a good stove installation involves and are up to speed with some of the main safety, legal and efficiency considerations needed in order to achieve an installation that costs as little as possible while also keeping you and your household safe.

Sadly, not everyone takes advice before pressing ahead with their stove installation, so in this section we will address some of the main things that can go wrong with installations. Whether it is botched DIY or shoddy work by unaccredited installers, these are problems that we hear about time and time again.

Register plate



The register plate sits at the top of the fireplace to block off all of the chimney other than a small gap through which the flue pipe can pass. It serves a dual purpose: to stop anything from falling down the chimney and, primarily, to stop flue gases from coming back down the chimney and into your room.

The preferred material to use for a register plate is steel, but some unscrupulous installers use chipboard. It ought to go without saying that using something combustible as a safety measure around a stove is not best practice. Indeed, it breaches the building regulations.

Chimney liner

Installing a chimney liner is one of the more straightforward aspects of stove installation, especially if you are a trained installer. The only thing you really need to remember is to put it the right way up. But we've heard many tales of supposedly professional installers who managed to complete the job with an upside down chimney liner. Once the flue liner is installed it is very difficult to remove it without causing dents or damage, which means you might have to pay for a new length of liner.

Connection problems

The biggest threat from carbon monoxide poisoning is leaks from joints and connections within your stove system. All too often these connections just aren't made correctly, which puts lives at risk.

This can be due to incompetence or the wrong sort of adaptors being used. Either way, it is hardly necessary to emphasise just how tragic the results can be in those circumstances.

Back wall problems

As you will have read, building regulations state that a stove that is being fitted into a fireplace opening should have at least

150mm of hearth behind it. Cowboy installers often breach this regulation or meet the measurement requirements but still endanger life by using or not replacing an existing combustible material on the back wall. Remember, you will need heat resistant plaster if you have walls in close proximity to the stove.

Cracked stove

Believe it or not, your solid cast iron stove can crack within a matter of days or weeks if the installation is not done correctly. The reason for this is often that an incompetent installer has rested the weight of the flue system on top of the stove.

Wood-burning stoves are not designed to be load-bearing and, if they are forced to hold the flue's weight, problems can occur very quickly. A properly installed flue will include its own support and will not be held up by the stove.

If a flue pipe is resting on the stove, the cast iron of the appliance will expand and contract significantly as it heats and cools - much more so than the steel used to make flue collars. The expanding of the cast iron, the relatively fixed position of the flue collar and the weight of the flue system can combine to cause cracks or fractures in the stove.

It is worth noting that cracks in the stove can be caused by user error as well as installation problems, so be certain to investigate fully before making any accusations against an installer. Cracks can also be caused by overfiring the stove, which happens when you allow too much oxygen into the firebox leading to it operating at too high a temperature.

Overfiring can also be caused by using too much fuel or using the wrong sort of fuel. Too much coal or wood can create an intense fire that is too hot for the stove to handle.

5. Running a stove

You have longed to get a wood-burning stove in your home for ages. You've finally got it so now it is time to press it into action. If this bit feels a bit daunting, don't worry, you are certainly not the first person to feel that way. If you have become accustomed to, or perhaps have only ever known gas or electric fires, suddenly switching to a wood burner can feel a bit strange.

Rest assured, that will pass in no time at all. Much like when you first drive a car it feels alien but soon becomes second nature, so you will soon be running your stove with no problems. Indeed, the information contained in this chapter should help to speed that process up and help you understand how to operate your new appliance effectively.



Types of fuel

Perhaps the most burning issue is deciding what you are going to burn on your new stove. As we touched upon in chapter 1, this is very much dependent on which type of stove you chose to buy.

Your first port of call should be your stove manual. This will detail what the manufacturer suggests you ought to use as fuel. We will offer some general advice in this chapter, but your manual must take precedence over the information contained here.

Wood-burning stove

If you bought a wood burner then you must burn wood on the stove. It is not possible to burn any other type of fuel because your appliance will not have a raised grate. The fuel will sit at the bottom of the firebox. Solid fuels burn at too high a temperature to be burned in this way and could cause permanent damage to your stove if you attempt to do so.

TOP STOVE TIPS

This traditional poem by an unknown writer gives some good tips on which woods to burn and which to avoid:

Beech-wood fires burn bright and clear If the logs are kept a year; Store your beech for Christmastide With new-cut holly laid beside; Chestnut's only good, they say, If for years 'tis stored away; Birch and fir-wood burn too fast Blaze too bright and do not last; Flames from larch will shoot up high, Dangerously the sparks will fly; But ash-wood green and ash-wood brown Are fit for a Queen with a golden crown.	Oaken logs, if dry and old, Keep away the winter's cold; Poplar gives a bitter smoke, Fills your eyes and makes you choke; Elm-wood burns like churchyard mould, E'en the very flames are cold; It is by the Irish said; Hawthorn bakes the sweetest bread, Apple-wood will scent the room, Pear-wood smells like flowers in bloom; But ash-wood wet and ash-wood dry A King may warm his slippers by.
---	---

Within the boundaries of only burning wood, you still have lots of options and some are better than other. Different types of wood burn in different ways. They vary depending on factors such as:

- The amount of heat that is generated
- The amount of sparks given off
- The scent given off by the wood
- The amount of time it takes to burn

With those points in mind, you want a stove that gives off a lot of heat, creates few sparks, creates a nice aroma and burns slowly.

What to burn on a wood-burning stove

Here are some suggestions of woods that fulfil some or all of those criteria:

Apple: Burns slowly and does not spit. Gives off a nice scent.

Pear: Has a lot in common with apple.

Ash: Provides good heat output and a steady burn. Burns well when freshly cut, but should always be seasoned before being used in your stove.

Beech: Not quite as good as ash, but not far behind. A very good fuel.



TOP STOVE TIPS

As a general rule, hardwoods are slower burners than softwoods, which you might expect because of their density.

Burning woods such as ash, beech, hawthorn and oak will ensure that you have to refuel your stove less frequently.

Cedar: Doesn't look very impressive as it burns, but generates a lot of heat and takes a while to burn.

Hawthorn: A slow burner that provides great heat.

Blackthorn: Very similar to hawthorn.

Maple: An excellent all-round performer.

Regardless of the type of wood you choose, it is always advisable to use seasoned wood.

What not to burn on a wood-burning stove

You should not burn:

Wood that has been treated with varnish or paint: This creates toxic fumes that can damage your stove and flue, and are not great for you or the environment either.

Unseasoned wood: Burning unseasoned wood will lead to creosote build-up, as well as delivering a poor quality and inefficient burn.

Wood from poisonous plants: You risk releasing the toxins into your living room.

Coal or any other fuel: The flat, solid grate of a wood-burning stove is not suitable for other fuels.



TOP STOVE TIPS

A large amount of smoke coming from your chimney is not a good sign. It is an indication that the wood you are burning is wet or not fully seasoned.

In this case, it will be causing damage to your stove system and burning inefficiently.

It is also wise to avoid these woods:

Larch: Leaves an oily soot and spits even when seasoned very well.

Pine: Has a high resin content which can cause sticky residue to build up in your stove and flue.

Multi-fuel stoves

Since wood is suitable to be burnt on a multi-fuel stove, the advice on burning wood given above also applies to burning wood on multi-fuel stoves.

Unlike wood-burning stoves, multi-fuel stoves are designed to burn fuels with a high calorific value. In other words, fuels that give off a high quantity of thermal units when burned. Fuels that can be used include:

Smokeless fuels: These are coal products that don't produce smoke when burnt. The best-known example of a natural smokeless fuel is anthracite. Smokeless coal produces fewer emissions than standard household coal, is easy to light and creates fewer ashes.

Manufactured fuels: These are produced by reducing the volatile content of coal, grinding it and mixing with a combination of fuels to form standard size briquettes. Many manufactured coals could also be classed as smokeless fuels.

What not to burn on a multi-fuel stove

You should not burn:

'Pet coke' or petroleum-based coal: The petroleum in the fuel will cause damage to your stove and lead to the grate becoming warped.

Household coal: As mentioned in chapter 2, household coal releases large quantities of volatile smoke, which can cause explosive flashes in your stove. This could crack the glass or damage the flue. It also burns too intensely for use in multi-fuel stoves and, as a result, may cause damage to the baffle, grates or liners.

Coals and wood at the same time: While your multi-fuel stove is suitable for burning coal or wood, you should only burn one at a time. Burning coal creates sulphuric acid, which can react with the moisture in wood to produce a sulphuric acid solution that will corrode your stove and flue system. Use one or the other.

Lighting a stove

Hopefully you are reading this section before attempting to light your stove and before any damage has been done to your pride. When a new wood-burning stove is installed, most people's natural reaction is to set about lighting it, confident that fire-lighting is in their DNA and that the spirit of their cavemen ancestors will guide them until the stove is roaring, which it will be in just a few short minutes and at the first time of asking. Sometimes it happens like that, but often it doesn't.

The truth is that stove lighting is a matter of trial and error. There are some good tips on lighting a fire that you can follow – and we will go on to explore those shortly – but the best tip is to practice. You need to experiment to find out what works best for you and your appliance.

TOP STOVE TIPS

Take the time to light your stove properly. If you experience problems with your stove going out, it is probably because it was never lit correctly in the first place.

Setting and lighting it right at the first time of asking will save you time in the long run.



Try to avoid getting too downhearted or frustrated if you experience problems at first. These early failures are key to the learning process. Instead, try again, tweaking your approach until you have developed a finely honed stove-lighting process.

Tips for lighting your stove

Take full advantage of modern amenities. You are not on a survival course, so you will want to make lighting your stove as easy as possible. That means good quality, long matches, dry and seasoned kindling, and dry fuels. Ensure that logs have been seasoned for at least 12 months before you use them and keep solid fuel in dry conditions. If not, you are just making life harder for yourself and your stove.

Clean your stove appropriately. Wood burns best on a small amount of ash, whereas solid fuels need a good air supply from below, which means that all ashes should be removed before you attempt to light a stove. In either case, ashes or soot blocking the circulation of air will make it harder for you to light the stove, so ensure the air can flow freely.

Open your air vents. Continuing the theme of the importance of air circulation, ensure that the vents are open. This will allow a good supply of oxygen into the firebox to encourage your fire to start burning. Normally you will open both vents for the initial lighting of the stove, but consult with your stove manual to confirm this is recommended for your appliance.

Use newspaper. A few sheets of newspaper will help your stove to get going in no time at all. Whether those sheets are crumpled up into ball, tied into knots, folded or rolled up depends on your personal preference. Different people swear by different techniques, so it is just a case of experimenting to see what work best for you. Between four and eight sheets ought to be enough to light your stove, but trial and error will show you how many you need. You can place them in the middle of your firebox. For

a very easy life, you might also add a firelighter at this stage, but it is not really essential and lighting with newspaper alone will keep your costs to an absolute minimum.

Add kindling to the stove. Kindling is very small pieces of dry wood, which are used to help light the fire. Essentially, once lit, the newspaper will ignite the kindling, which sets alight more easily than a log but burns for longer than the newspaper. In time, the kindling will be responsible for lighting the log. Much like the presentation of your newspapers will come down to personal preference, there are lots of options for placing the kindling in your stove. Randomly strewn, in a lattice effect and in a wigwam-like structure are all popular options. Experiment with different approaches to establish which you prefer.

Light your stove. This is the big moment of truth: will it light? The purpose is to create a hot core in the centre of the fire bed that will spread outward and upward. Each stage - the paper, kindling, and ultimately the fuel - is the next step towards building up the core temperature. Light the newspaper in a couple of places, using extra long matches to reach the newspaper more easily and avoid any nasty burns to your finger.

Close the door. Once the newspaper is alight, close your stove door. Some wood-burning stove manufacturers suggest leaving the door ajar to increase the air supply. Check your stove manual for guidance or, failing that, experiment to see what works best

TOP STOVE TIPS

A popular alternative method of lighting your stove is the 'upside-down' approach favoured in Scandi-navian countries.

In this technique, you set the stove with the logs on the grate, place the kindling on top of them and add the newspaper on top of that.

In theory, the fire will burn downwards and light your stove very efficiently. Give it a go!



for your stove. Closing the door will encourage a more powerful draw through the vent to encourage an efficient burn, while also keeping the majority of heat inside the firebox to ensure it gets up to temperature more quickly.

Add your fuel. Once the fire is roaring and the kindling is beginning to char, you can open the door and add your main fuel to the fire. That is likely to be small logs at this stage, although it might be coal if you're using a multi-fuel stove. Don't overload the firebox while the fire is still getting going or you might extinguish it before it is lit properly. Make sure you also leave gaps to allow air supply to the burning kindling.

Close the door and vent. You can now close the stove door and - if you're burning wood - the bottom vent, leaving the top vent open. The bottom vent will need to remain open if you're burning coal on a multi-fuel stove to allow an air supply from below. If everything has gone to plan, your stove should now be looking the part and the fuel starting to burn.

Remember, practice makes perfect. The best thing you can do is have a go by following the tips above to see what works for you and what doesn't. Although it can be frustrating if things don't go to plan, it is fun so just experiment. Once you have settled on a method that works for you, try to refine the process so that you can light your stove using as little paper and kindling as possible. This will help you to make running your stove even more economical.

TOP STOVE TIPS

A stove is up to 60% more efficient with the door closed. You're not supposed to feel direct heat from the flames. The flames heat the metal panels that make up your stove, which heat the rest of the room.



Step By Step Illustration

Step 1 – Add kindling



Open air vents. Add dry scrunched up newspaper to the bottom of the stove. Add some kindling on top. Dry soft wood is best. Criss cross the wood so air can get at it.

Step 2 – Light the Paper



Light the newspaper in a couple of places. Leave the door slightly ajar, though some stoves are easier to light with the door closed. You'll get to know your stove and what works best.

Step 3 Add Some Smaller Logs



After a minute or 2 the kindling should be burning nicely. Add some smaller logs. Again criss-cross them so the air can get between them. Leave for 5 minutes until burning well.

Step 4 Add Some Large Logs



Move the wood around and add a couple of big logs. Leave it for another 5 minutes or so.

Step 5 Close the Air Vents



The big logs should be well alight now, so you can close the door. Close the bottom vent if you're just burning wood and close the top the air vent until you get a nice gentle flicker of flames. The stove should continue to burn nicely for a few hours. Add more logs as needed.

How much fuel will I need?

The amount of fuel you need is very much dependent on how and how often you plan to use your wood-burning stove. It is possible to do calculations, but it is another of those things that is likely to become clearer once you settle into a routine as a stove owner.

To help you make some basic calculations as to how much fuel you might need, 1kg of wood will deliver approximately 4kW of heat for an hour.

So, using a 6kW stove for 4 hours a day for 100 days of the year would require 536kg of wood. To give you some sense of what 536kg of wood might look like outside your home, it would occupy around 1.53m³ (just over 5ft³) of space. For that reason, if space allows it is very useful to be able to have a log store outside your home. This should be a covered - but not enclosed - space that protects the wood from rainwater while allowing it to air. The wood should also be kept off the ground to avoid moisture from the ground getting into the logs. For example, you might store your wood on pallets underneath a lean-to.

Storing your own logs, ideally for at least 12 months before they are burned, will give the wood chance to season. Remember, burning unseasoned wood will not only cause potential damage to your stove system, it will also result in you using more fuel than you would if you were burning seasoned wood.

If you're buying a pellet stove, it is recommended to buy 12 months' worth of pellets. Again, storage space is inevitably a factor, but the hoppers that accompany pellet stoves are normally designed to hold lots of pellets. While buying in bulk makes arranging delivery of your fuel more cost effective and the price per pellet cheaper than buying regularly in bags, you may have to buy a tonne at a time in order to qualify for a delivery.

Refuelling your stove

One way to ensure that your stove burns as cheaply and efficiently as possible is to reload with fuel only when it is absolutely essential to do so. Fortunately, this is also best practice.

You should let the existing fuel burn down to a bed of embers before adding more logs to the firebox. Adding fuel more regularly than is necessary will reduce the efficiency of the stove by up to 15%. That is a significant additional chunk of every log you use disappearing straight up the chimney without contributing any heat to your home (remember, you will already be losing 30% on an appliance with 70% efficiency so, in that example, the efficiency rate would be pushed down to 55%).

The reason that refuelling causes such high levels of inefficiency is that opening the stove door allows a rush of air into the firebox. This cools down the temperature inside your stove, which allows flammable gases to escape up the chimney without igniting. Given that adding room temperature logs to the fire cools the firebox in any case, the result is an inefficient burn. You might see evidence of this if you look at the chimney after reloading a stove that was still burning. There will probably be more smoke emitted from the chimney than would otherwise have been the case.

Aside from the efficiency savings made by not reloading your stove too often, there is really no need to add extra logs until the olds ones are reduced to embers. Although a wood-burning

stove might look at its most spectacular when the flames are licking against the glass, it is not the flames that are heating your room.

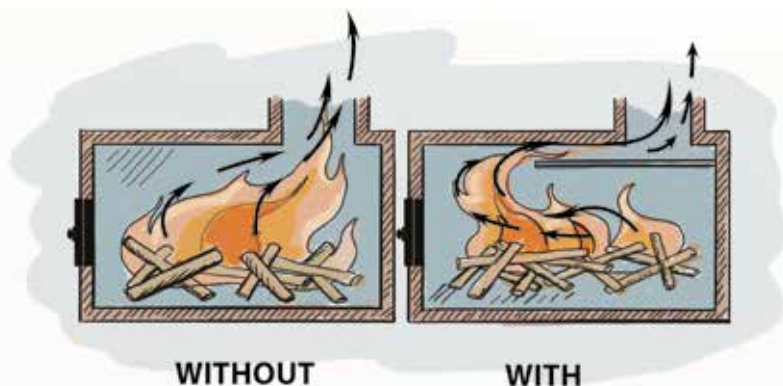
The fire is heating the metal panels of the stove, which in turn heat your room. As long as there is a fire burning, the metal panels are being heated and so is the room - even if there are no impressive flames at that particular point.

6. Looking after your stove

Once your new woodburner is taking pride of place in your home, you will want to keep it in pristine condition. Just like any other piece of machinery, a little bit of occasional TLC will go a long way to ensuring your stove lasts.

The simplest way of ensuring you stay on top of maintaining your stove is to set aside a little bit of time each month to perform an MOT on your appliance. This monthly check-up would comprise a short routine of visual checks, tests and cleaning that shouldn't take more than a few minutes to complete. That's a worthwhile investment to ensure that your stove continues to look great and serves your home for many years to come.

Here are some of the main stove components that need your attention.





Arrow AFS035 Throat Plate

A baffle plate is a key aspect of most modern wood-burning stoves. Sometimes known as a throat plate, it sits at the top of the firebox to prevent a direct exit for gases. The purpose of this is to keep as much flammable gas as possible inside the stove for as long as possible. This ensures that you get the best value from your fuel, that fewer emissions go up your chimney and that there is a lower risk of soot and creosote build-up in your flue.

But since it is a flat surface that runs across the width of your stove, it is also a favourite spot for soot and ashes to collect. If the soot and ashes are allowed to sit for an extended period of time they will start to corrode the baffle plate, so it is worth removing it to clean at least once a month or ideally once a week.

Once it is out, perform a visual check for holes or corrosion. If you spot any holes you will know that the baffle is no longer performing its function of blocking the gases effectively, so you will need to buy a spare baffle plate as a replacement.

Even with regular checks and cleaning, your baffle will eventually succumb to wear and tear. That is unavoidable due to the high temperatures and extreme punishment that it is subjected to in order to perform its job properly. This could take months or it could take years depending on how you operate the stove and how frequently you clean the baffle.

Burning through a baffle plate in a short period of time indicates that you are probably over-firing the stove. In other words, your stove is getting access to too much fuel and too much oxygen when it is in use and is operating 'too hot' as a consequence.

Glass

To keep your stove looking and operating in top condition, you want its glass to be clean and free of cracks. Most modern appliances include airwash technology, which involves a thin layer of warm air being blown down the inside of the stove glass to prevent soot and dirt from settling.



TOP STOVE TIPS

If the airwash function on your stove isn't keeping the glass as clean as you would like, specialist stove glass cleaning products are available.

For a cheaper alternative try a bit of newspaper dipped in malt vinegar or in cool ashes from the stove. Both do a great job of cleaning the glass.

A quick visual check ought to let you know whether any holes or cracks have appeared in your stove glass. It is important to replace the glass as quickly as possible because the hole will allow excess oxygen into the firebox causing an inefficient burn and possibly causing the appliance to over-fire.

Assuming that the glass hasn't been subjected to any unexpected collisions (beware of closing the door on protruding pieces of fuel), the most common cause of cracked glass is mini-explosions within the firebox.

These can be caused by over-firing the appliance, using the wrong sort of fuel in the stove or pouring a cold liquid over hot stove glass.

If you're certain that you were operating the stove correctly and that you were burning a manufacturer-approved fuel, it is possible that there were impurities within your fuel. In other words, your fuel had been contaminated with a different fuel, such as pet coke or household coke, which should not be used in stoves.

Another cause of cracked stove glass is the over-tightening of the screws that hold the glass in place on the door. If you suffer two breakages in quick succession, it might be that these screws were tightened too much after the replacement glass had been fitted. Even if you didn't hear or see a crack while the glass was being replaced, an overtightened screw can still cause problems when the stove is in use and the glass starts to expand.

How to replace stove glass



Glass to Suit Rocky Stove

The process for replacing cracked or broken stove glass is relatively straightforward. Just follow these steps:

1. Clean the door. The inside of the door is likely to be covered in ash and dirt, so it is a good idea to brush it down before you go any further for the sake of your clothes, your living room and your new glass.
2. Remove the door. This is not essential, but is usually easy to do on most appliances and makes the process much simpler. The door will often simply lift off its hinges, but you can consult your stove manual to confirm this is the case for your appliance.
3. Place the door face down on the surface on which you plan to carry out the repair. Keep in mind that the door is still likely to be a bit dirty.

4. Release the glass. You can consult your manual to check how to do this, but you will usually find a metal catch that is attached to the door with a screw or bolt. Depending on what your manual says, either move the catch to the side or undo the screw or bolt. These catches are designed to be strong enough to hold the glass in place - and that's before they have been subjected to high temperatures and deposits of soot and tar - so you might need a drop of WD40 and a pair of pliers to get the job done.
5. Carefully remove the glass. As you start to loosen the catches, remember that the glass may come free at any stage. Take particular care with the cracked section of the glass.
6. Check the stove rope. The seal between the glass and the door is created by a gasket, which is usually formed by stove rope. While you have the door off, it is worth checking to see if the rope has become broken or frayed over time. You can find more information in this in the rope section, which follows.
7. Fit the new glass. Place the replacement stove glass onto the door on top of the fire rope. Then move the catches back into place, tightening any screws or bolt that you loosened during the removal process. Be careful not to over-tighten though, as this could cause a crack in your new glass.



TOP STOVE TIPS

Most modern stoves use a ceramic glass that is stronger than regular glass and less prone to shattering.

When replacing the glass, ensure that you do so with proper stove glass to ensure that it can withstand the punishment it will get when your appliance is in use.

Stove rope



Glass Rope Kit With Rope Glue

As we mentioned in the previous section, stove rope is used to create a gasket to seal the stove door when it is closed. This is important to stop excess oxygen getting into the firebox and causing an inefficient burn, but also to stop smoke escaping into your living room.

There are a couple of ways to monitor your stove rope as part of a regular check-up. The first is a simple visual check. You just need to open the door and inspect for any broken, frayed or squashed sections of rope, which could prevent the door from sealing correctly.

The second check you can conduct is a very easy test. Just take a sheet of A4 paper and trap it in door of your stove. If you can easily remove the sheet of paper from the closed door there is probably a problem with the seal. The extra air that is getting in will burn your fuel faster and cost you money that you don't need to spend.

How to replace stove rope

Fortunately, stove rope kits are easy to come by and it is relatively straightforward to replace the broken rope with a new one that will create an effective seal. Just follow these steps:

1. Clean the door. The inside of the door is likely to be covered in ash and dirt, so it is a good idea to brush it down before you go any further for the sake of your clothes, your living room and your new glass.
2. Remove the door. This is not essential, but is usually easy to do on most appliances and makes the process much simpler. The door will often simply lift off its hinges, but you can consult your stove manual to confirm this is the case for your appliance.
3. Place the door face down on the surface on which you plan to carry out the repair. Keep in mind that the door is still likely to be a bit dirty.
4. Remove the old rope. You should find the old rope is glued into a groove around the edge of the door. Pull out the rope and remove the glue. You might have to scrape out any stubborn bits of rope or glue.



TOP STOVE TIPS

Stove rope comes in different sizes based on the thickness of the rope.

Make sure that you replace the old rope with rope of the same thickness to maintain a reliable seal. Consult your stove manual for confirmation on the correct thickness of the rope.

5. Measure the new rope. Run a continuous piece of new rope around the groove to ensure you have got the correct length, then cut it accordingly.
6. Glue the new rope in place. Remove the rope from the groove and apply the glue in its place in a continuous application. Once the groove has glue all the way round, push the new rope into place on top of the glue.
7. Test it. Put the door back on its hinges and test that it closes correctly. If it does, you can test the seal again using a sheet of paper.

Rust

The quality of materials, manufacturing and finish that go into making a modern wood-burning stove means that they are less susceptible to rust than stoves of yesteryear. Nonetheless, most appliances are made of cast iron and can still occasionally rust.

Issues are most likely to occur when a stove is exposed to moisture. This might happen if it is left in storage or if it is out of use for an extended period of time. A stove that is in regular use will not ordinarily rust. The high temperatures it generates will usually evaporate any moisture that has settled on its body. But if the water is allowed to sit, it can start to corrode the appliance. While this isn't ideal, it is easy to tackle the problem and nip it in the bud - as long as you include checking for rust as part of your regular stove check-up.

TOP STOVE TIPS

If your stove is inactive for an extended period - either due to warm weather or because it is in storage - leave the door ajar.

This allows air to flow through the stove system and will prevent rust and corrosion occurring inside the appliance.



If you do find rust, it is vital that you remove it as quickly as possible. The longer it is left, the further it will spread and the more damage it will do to the stove body. As well as being unsightly, when left untreated, patches of rust can develop into holes. The high temperatures at which the stove operates and the fact that the rust becomes a weak point can lead to further damage.

Treating rust on a wood-burning stove

Before attempting to remove rust, it is important that you allow the stove to cool fully. Once it is down to room temperature you can get to work. To remove the rust, all you need is a bit of wire wool. Rub that over the affected area in fairly gentle, small, circular motions to remove all the rust. It is wise to cover the area around the stove beforehand to avoid rust particles covering your carpet.

Once you have removed all the rust, wipe your stove down with a damp cloth and make sure that all the rust particles have been removed from the appliance. You can then leave your stove to dry.

The next stage is to restore your shabby looking stove to its former glory. That entails retouching the area that had been affected by rust. Depending on how widespread the rust was, you might choose to just paint the rusted area or repaint the entire stove.

In either case, you need to use a specialist stove paint. Although it might be tempting to use a cheaper matt black paint for such a small job, that is not a very good idea. Stove paints are made to withstand far higher temperatures than ordinary paint. Most stove paints can cope with temperatures of up to 600°C, whereas a normal paint would start to peel off almost immediately after your stove is lit.

Two coats of stove paint should do the job, but make sure you give the first coat plenty of time to dry properly before applying the second coat.

Monthly check-up

With all those things in mind, here is your full monthly wood-burning stove check-up routine. Some of these have already been mentioned in more detail, while others have not.

Check for gaps between the panels: If your stove is made of cast iron, it was produced by creating casts for the various panels and then sealing them together. Over time, it is possible for gaps to appear between the panels, so check that none have appeared. If you do spot any gaps, you will need to seal them with fire cement. This problem won't affect steel stoves.

Check for rust: If you spot rust on your stove, it's better to act immediately before the problem gets worse. Use wire wool to rub down the rust and then repaint with stove paint. There are full instructions in the rust section.

Check for cracks in the glass: If you spot a crack in your glass, it makes economic sense to replace it as soon as possible. There is a full guide on doing just that earlier in this chapter.

Check the fire-rope around the glass and door: The fire-rope around your stove's door and glass helps to create a seal that stops air and smoke sneaking in and out where it shouldn't. Do a visual check to make sure it isn't missing, squashed or frayed. Then trap a thin piece of paper in the door. If it pulls out easily, you need to replace the fire-rope. Again, there is a step-by-step guide earlier in this chapter.

Check your ash pan: If you have a multi-fuel stove, your ash pan takes a lot of punishment as it frequently holds very hot ashes for sustained periods of time. Take the time to check it regularly for holes. Replacement ash pans are available for stoves of all sizes.

Getting your chimney swept

This is more of a once or twice-a-year job than a monthly one - depending on how regularly, you use your stove - but it is still worth discussing as part of your check-up. Using your stove leads to soot and creosote building up in your chimney. This needs to be removed regularly to help you to avoid chimney fires and to ensure that your stove operates efficiently.

While modern wood-burning stoves produce far less soot than older stoves, a build-up of some creosote is inevitable. Not getting your chimney swept is a risk that is not worth taking.

When you do get it swept, call upon a qualified professional who will do the job properly. HETAS, the body that accredits stove installers, also approves chimney sweeps.

A HETAS-approved chimney sweep will have attended a training course hosted by a chimney sweep trade association, such as the National Association of Chimney Sweeps (NACS). NACS runs a compulsory training programme for its members, including on-site inspection of their work. They also inspect each sweep's tools, equipment and public liability insurance to help towards their target of promoting the highest standards of chimney sweeping, inspection and maintenance.

The HETAS website offers a search tool allowing you to find an approved chimney sweep in your area.

7. Stove accessories

Aside from your wood-burning stove itself and the installation essentials, such as the flue pipe, there are a number of accessories that might make life as a stove owner a bit easier for you. Some of these are worth considering ahead of installation, while the others are things you can pick up once you're ready to start getting the most from your appliance.

Chimney cowl



Birdguard Conical Wire Balloon Black, Pot Hanging Chimney Cowl For 6 Inch Flexible Flue, BSEN Anti-draught Bonnet Cowl, Universal Roto Cowl Inc Fitting Kit

This is the one we're predominantly thinking about when we say it's worth considering ahead of installation. Since it involves scaling the roof to fit, it is definitely preferable to do this at the same time as your flue is being fitted, if at all possible.

At its simplest level, a cowl is a cover for the top of your chimney pot. The primary use of a chimney cowl is to stop birds from getting down the chimney and finding their way into your woodburner. This is a more regular occurrence than you might expect. Our feathered friends love to perch atop a chimney and, whether through inquisitiveness or clumsiness, have a habit of ending up at the bottom of it.

If this happens in your home, you will be faced with a rescue operation to free a probably quite agitated bird from your stove. They usually manage to avoid their chimney-stack gymnastics when the stove is lit, but the situation can be considerably more gruesome if it is. A simple cowl fitted to the top of chimney avoids any such drama.

Over time, chimney cowls have developed to serve other purposes as well as keeping birds at bay. For instance, some now include a solid cap above a netted side. The smoke can still escape through the open sides of the cowl, while the top prevents rainwater from falling into the flue and your stove below. Rain doesn't pose much of a problem during the winter when the stove is in use because the water evaporates almost immediately. But through the summer months, any rain that falls has the opportunity to sit in your stove system, potentially causing it to rust.

More complicated anti-downdraught cowls are also available. These are suited to homes that are particularly exposed or prone to windy conditions. Properties that regularly have strong winds blowing across them can sometimes experience problems with

smoke blowing down the chimney and out into the room below. Obviously, having flue gases blowing into your living room is not very pleasant and not very healthy. An anti-downdraught cowl can help to negate the effect of the wind and prevent smoke being blown back down the flue.

Revolving chimney cowls perform a similar job, but they have been developed to address the problem of weak draw. If the pull of air up your flue is not sufficient, it can cause similar problems with smoke seeping into the room. A weak draw can be caused by ventilation issues, wider chimneys that have not been fitted with a flue liner or just the conditions or location of the property. The rotation of the cowl helps to generate a stronger draw, with the aim of stopping smoke coming back down the flue and encouraging a more efficient burn.

Log box

A non-essential but very useful stove accessory is a log box. A log basket or log holder can be just as effective. These are storage units designed to hold a few logs at a time. Of course, the majority of your log supply will be kept outside, preferably in a covered but open-sided store. The purpose of a log box is to hold enough fuel to last for several hours, or often longer. This is to minimise the number of trips you have to make to your log store. After all, there is little point having a lovely, cosy stove in your living room in the depths of winter if you're having to nip outside a few times every evening to fuel it.

Some people prefer just to have a few loose logs in the room rather than have a container in which to keep them. Whether you use a log box or keep the logs loose, keep in mind that they are a fire risk. Storing them directly next to a very hot stove creates a risk that they will ignite earlier than you had intended them to.

Fireside bucket



Elips 16 Inch Black Coal Bucket, Wooden Fireside Bucket with Black Iron Bands and Mango Wood 19 inch

If you are burning smokeless fuel rather than wood then you might want a bucket to keep nearby. Essentially, it would perform the same job as your log box. You would be able to go outside at the start of the evening, collect enough coal from your store to last you for the night and transport it into the house in one go with your bucket.

Most fireside buckets, which are sometimes called coal scuttles, come in a traditional black finish, for obvious reasons since they are soon covered in coal dust. However, there are some more imaginative designs on offer if you want something a bit different from the norm.

Gloves



Red Gauntlets

Gloves or gauntlets are an absolute must for any stove owner. If you decide to go ahead without the use of gloves, you will probably only load fuel into a lit stove once before changing your mind. A woodburner gets very hot when it is in use, which means you are liable to suffer a nasty burn if you make one false move around it.

Whether you're adding fuel, adjusting the vents or riddling the grate, the chances are you will need to come into close contact with your appliance while it is at full temperature. At that point you will be very pleased to be able to rely on stove gloves.

As well as keeping your hands safe, gloves will also keep them clean when you're handling fuel. Just make sure you opt for heat resistant gloves.

Moisture meters



Arada Wood Moisture Meter

As we established when discussing running your stove efficiently, the moisture levels in your fuel are a very important factor in using your appliance in a way that is good for the environment,



TOP STOVE TIPS

If you've not yet got a moisture meter but need to identify seasoned wood, there are some visual checks you can carry out.

Seasoned wood will be darker on the outside than freshly cut, green wood. It will also be white on the inside. The split pieces will be covered in cracks and the bark will be attached less firmly than on fresh wood.

good for your pocket and good for the stove itself. Ideally, any fuel you burn will be seasoned, which means cut, chopped and aired for at least 12 months. If you do that, the water quantities within the wood should fall from 60-85% to 20-30%.

That reduction in moisture content will also reduce the amount of soot created when the wood is burned, lower the risk of creosote build-up in your stove system and ensure that the energy being generated is going towards heating your home rather than evaporating excess water. But how do you monitor that process?

A moisture meter is the answer. Whether you want to check on the progress of your own stack of logs or just confirm that the logs you are being sold have been seasoned to the extent claimed, a moisture meter is a very handy device to help you ascertain the water levels in the wood.

The meter includes a probe that you place in contact with the wood. A digital display will then provide you with information on the moisture levels.



TOP STOVE TIPS

When choosing a companion set, pay attention to the length of the tools, as well as the style and number of tools.

This will have a significant impact on how far into the stove you can reach while keeping your hand out of harm's way.

Companion set



Plain Handle 4 Piece Fireside Companion Set Black 21 inch

As we discussed in relation to gloves, your woodburner will get very hot when it's in use. A companion set gives you the opportunity to keep it at further than arm's length by providing a

collection of tools with which to tackle your stove. The number of tools available varies between different companion sets, but it is usually two, three or four, so make sure you get a set that includes all the tools you need.

The most common tools available are:

Poker: Important for poking and prodding in parts of your stove where you wouldn't want to put your arm.

Tongs: Handy for transporting fuel into your stove or manoeuvring it if you're not happy with its existing position. They are particularly useful when you are burning solid fuels.

Shovel: Another option for transporting fuel into the stove, but also a handy cleaning tool when used in conjunction with...

Brush: If ashes or excess fuel become scattered across your hearth, it can be very useful to have a brush close at hand to sweep it up immediately and keep your fireplace looking neat and tidy.

You will find companion sets come in a variety of sizes and styles so you will be able to pick out one that is well suited to your home.

Stove paint

It is always worth having a spare container of stove paint around just in case you ever need it. This is especially true if you opt for an unusual stove colour, in which case it is even more important to have spare paint in case the colour is discontinued.

As we previously mentioned, stove paint is an essential part of the treatment process if you spot rust on your stove at any stage. It can also be useful if your stove suffers any bumps or scratches - for instance, if you're transporting it to a different property or if you happen to drop something on it. A lick of stove paint - and remember, it must be heat resistant stove paint, not any other type of paint - will have your stove looking as good as new and prevent rust from developing.

Longer term, repainting your stove will give it a new lease of life when years of use and inevitable wear and tear perhaps lead to its charms fading slightly.

Fire cement

Stove cement, or fire cement, is needed during the installation process, but it is always useful to have around. When the stove is being installed, cement can be used to seal the gap between the top of the adaptor and the start of the chimney liner on your stove system, to seal the flue collar in place and to seal the blanking plate for any flue exits that you will not be using.



KOS Fire Cement 1kg Tub

Further down the line, you will be able to use the cement if you spot any gaps opening between the panels of your stove or if any cracks appear in the stove body. Fire cement is available in black or neutral versions, so you can decide which is most appropriate for your stove. It is heat resistant, usually to temperatures up to 1250°C, retains its adhesiveness at high temperatures and will not crack or crumble in those circumstances. It sets by air drying and, once set, it is impervious to acids, solvents, oil and water.

Fire cement will stick to any clear surface that is free from oil, grease and rust, so it will work on a host of different materials on or around your stove.

Carbon monoxide alarm



If you are performing a new stove installation, a carbon monoxide alarm is now a legal requirement in order to comply with building regulations. Even putting the law aside, it is a very good idea to have a carbon monoxide alarm fitted in your home.

Carbon monoxide is a silent, deadly gas. Often you have no idea it is there until the damage has been done - with potentially fatal consequences. The exception to this bleak picture is if you have an alarm to alert you to a leak.

Faults or flaws in your stove system - whether caused in the manufacturing or installation process, or through wear and tear - can lead to carbon monoxide seeping into your home. If you haven't lined your chimney, then you are even more susceptible as the gas can leak through missing brickwork or damaged pointing.

An alarm will cost less than £30 and could be a lifesaver for someone in your household.

Stove pipe thermometer

As you will have noted throughout the course of this book, it is possible to operate your stove at too high a temperature. Allowing too much oxygen into the firebox - through incorrect use of the door or air vents, or holes in the stove rope or glass - is a major cause of this problem. Using too much fuel can also lead to over firing of an appliance. One way to ensure that you do not over-fire your stove is to fit a stove pipe thermometer. This will sit on your flue and keep a check on the flue gas temperatures.



Mazona Stove Pipe Thermometer

Stove pipe thermometers are a simple and reasonably priced piece of kit, but they can save you a lot of money. Not only will buying one help you avoid causing permanent damage to your stove system, it will also help you to achieve a more efficient burn and save you fuel.

For most appliances, an operating temperature of between 115°C and 245°C is optimum. Consult your stove manual or the manufacturer for further guidance on the ideal running temperature for your appliance.

Wood-burning stove glossary

[Illustration of a wood-burning stove and a multi-fuel stove?
Label could include: Primary air control, secondary air control, ash pan, grate, top flue outlet, rear flue outlet, firebox, firebricks]

Stove terminology can be difficult to get to grips with at first. You will find most of these terms are explained in more detail elsewhere in the book, but this at-a-glance guide is here in case something slips your mind or you need to find out what something is before you reach the relevant section of the book.

Air control

(See vent)

Airwash

A system that forces a flow of air from a vent at the top of your stove down over the glass in the door to prevent tar and soot being deposited on the glass.

Ash pan

The removable tray that sits below the firebox in a multi-fuel stove to collect all the ashes.

Baffle

A metal plate sitting above the stove. It partially blocks the exit for the hot flue gases created by your fuel. This helps to keep the gases in the stove for longer to make sure they have fully burnt, and also keeps heat in the stove for longer to give more opportunity for your room to heat.

BTU (British Thermal Unit)

A unit of heat measurement often used in relation to boiler stoves in favour of kW. Multiply the BTU rating by 0.000293 to convert to kW.

Building Regulations

The government approved guidelines relating to all building work, which covers the installation of stoves, lining chimneys and other associated work. Your installation must comply with these regulations.

Carbon Monoxide

A dangerous, silent gas that can cause fatal poisoning if not detected. It is produced by the burning of coal and wood (as well as other fuels such as gas, oil and petrol) and becomes a problem if there is a leak in a stove or flue system.

Cassette Stove

A type of inset stove that slots into a recess in a wall and not necessarily a traditional fireplace.

Cast Iron

The most popular material from which to construct stoves. The molten iron is moulded into panels, which are then sealed together to make the stove.

Chimney Connector

(See flue collar)

Clean-burn

A system used in modern stoves in which an additional air supply is introduced to the stove. This encourages burning higher up the stove, with the intention of stopping flammable gases disappearing up the flue without being burnt.

Clearance

Another word for the minimum distance between a stove or flue and combustible materials as dictated by the building regulations.

Combustible Material

The official term, as per the building regulations, for anything that could catch fire as a result of being in the proximity of your stove.

Creosote

A chemical that is formed when soot and tar are deposited in chimneys or flues. It reduces stove efficiency (by blocking the flue) and can increase the risk of chimney fires.

Draw

The name given for the pull of air up a flue or chimney. This is required to ensure a good air supply to the stove and to evacuate all gases from the flue system.

Efficiency

The percentage of fuel added to a stove that is spent on directly generating heat rather than being lost up the chimney.

External air stove

A stove that is supplied with all the air it needs to operate via a vent that leads directly from the appliance to outside the property. This avoids the need for vents inside the room, which makes them suitable for airtight properties.

Firebox

The main inside part of your stove; the metal box where all the burning of your fuel takes place.

Firebricks

An insulating material used inside the stove to protect it from the fierce heat of the fire.

Flue

The pipe that takes the gases away from your stove.

Flue collar

The connection between the stove flue outlet and the flue pipe.

Flue gases

The by-products of combustion in the firebox, which are transported from the stove through the flue.

Freestanding stove

Stoves that stand on their own legs.

Grate

The surface that your fuel sits on when it is burning. This is a solid, flat panel in a wood-burning stove, but a raised surface with slats in a multi-fuel stove.

Heat output

The amount of heat generated by an appliance. This is usually given in kW and indicates the average number of kilowatts per hour created by the stove.

Hearth

The platform on which the stove stands. It must be made from a non-combustible material - often tiles - and protects the area surrounding the appliance from the heat it generates.

Inset stove

Stoves that slot into a recess or existing fireplace.

Kindling

Small pieces of dry wood that are used to help light the stove. Kindling is used because it ignites more easily than larger logs but burns long enough to set the main fuel alight.

Mantel

A shelf placed above the appliance for decorative purposes.

Multi-fuel stove

Multi-fuel stoves are commonly referred to as wood-burning stoves as a catch-all term. The difference is that a multi-fuel stove is also capable of burning coals.

Output

(See heat output)

Primary air supply

The main source of air to provide combustion inside the stove. In multi-fuel stoves this is usually at the bottom of the stove.

Register plate

A plate used to seal the bottom of the chimney in an open fireplace, which will have a hole through which the flue pipe passes.

Riddling grate

A grate with a mechanism that allows the slats to be moved or tilted so that ashes can be easily emptied into the ash pan, either while the stove is in use or during the cleaning process.

Room-sealed stove

(See external air stove)

Rope

Stove rope is used to create a gasket around the stove door so that the gap between the door and the main body is sealed when the door is closed. This prevents too much oxygen entering the firebox and smoke and gases from escaping into your home.

Secondary air supply

An additional air supply, which sees pre-heated air pumped to the top of the stove to improve combustion (see Clean-burn).

Smokeless fuel

Manufactured or naturally occurring coals that don't produce smoke when burned. They are the recommended choice of fuel for most multi-fuel stoves.

Steel

The second most popular material from which to construct stoves. Unlike cast iron stoves, steel stoves are not made from panels. Instead they are made from single sheets of steel that are folded, bent and cut into the required shape.

Vents

The controls that dictate the amount of air that is allowed into the firebox (see primary and secondary air supply).

Wood-burning stove

Often used as a catch-all term for all stoves but, strictly speaking, a stove that burns only wood.

Hopefully you are reading this section before attempting to light your stove and before any damage has been done to your pride. When a new wood-burning stove is installed, most people's natural reaction is to set about lighting it, confident that fire-lighting is in their DNA and that the spirit of their cavemen ancestors will guide them until the stove is roaring, which it will be in just a few short minutes and at the first time of asking. Sometimes it happens like that, but often it doesn't.

The truth is that stove lighting is a matter of trial and error. There are some good tips on lighting a fire that you can follow – and we will go on to explore those shortly – but the best tip is to practice. You need to experiment to find out what works best for you and your appliance.