

What are Wood Pellets?

Wood pellets are made from fine wood particles and are cylindrical in shape, typically 6 or 8mm wide (diameter), and 3-40mm long.

Because of their consistent shape and characteristics, they flow more easily and burn more consistently than other forms of wood, which makes it easier to design clean, automated heating systems that need little more intervention than gas- or oil-fired boilers.

How are wood pellets produced?

Wood pellets are made from either the bits left over from other uses of wood (e.g. the sawdust from timber mills), or from wood that is grown sustainably and harvested for the purpose of energy production (e.g. from FSC-certified forests or "short-rotation coppicing"). Forever Fuels buys only top-quality pellets produced with untreated, virgin fibre from sustainable sources (see Pellet Quality sheet).

The wood needs to be dried to a very low moisture-content before it can be pelletised. If the wood is not already in small pieces (e.g. sawdust), the first step is to chip it into small chunks. The chunks or sawdust are then put through a dryer.

The dried wood is ground to produce fine particles. These particles are squeezed at high pressure through a die – typically a drum with lots of holes and a press rotating inside. The process also raises the temperature of the wood. The combination of temperature and pressure causes the lignin in the wood to melt and bind the particles together, creating dense cylinders of wood as they emerge from the holes in the die.

The pellets are cooled as they are moved away from the die, and screened to remove the smaller particles that were not successfully bound into the pellets. Once the pellets are cool and clean enough, they are put into store, ready either to be bagged or loaded loose onto lorries for delivery in bulk.



Where do your wood pellets come from?

Wood pellets are made in several places around Britain, and in many countries around the world.

Forever Fuels aims to support local production wherever possible. But we do not lower the bar for these producers. All producers must meet our high quality-standards, and must be able to supply at a price that is in line with competing producers. And we must be certain that we always have plenty of suitable pellets to satisfy our customers' demands. We therefore also contract with large-scale pellet-producers to ensure that we have a baseload supply of quality-controlled pellets.

How are wood pellets delivered?

We can deliver wood pellets in a couple of ways. Forever Fuels specialises in bulk deliveries, using one of our purpose-built pneumatic blower vehicles (see Distribution sheet). With these specialist trucks, wood pellets can be pumped into your fuel store, as easily as heating oil or LPG.

We can also supply pallet-loads of bagged pellets. If you cannot easily move 1-tonne pallets from the curbside to your store, you should buy your pellets by the bag from local retailers.

What equipment do I need to use wood pellets?

Wood-pellet boilers circulating heat and hot water (or hot, blown air). A cheaper and simpler option is a pellet stove to heat a room. More sophisticated pellet stoves also come with back boilers for hot-water output.

All pellet burners require somewhere to store the pellets. Hoppers are normally built into pellet stoves and are typically loaded a bag at a time. Some boilers have a built-in pellet store, but it is more common for it to be separate. A pellet store can be simpler and smaller than an equivalent store for wood chips, but it is a good idea to have as large a store as you can accommodate. Pellets are transported from the store to the boiler either by an auger or by a suction system. See our Design Guide and speak to suppliers for advice.

It is common to install a buffer tank to store hot water from the boiler, but unlike chip and log boilers, this is not required for many modern pellet boilers. Again, your installer will advise.

In order to claim Renewable Heat Incentive (RHI) payments, you will need a heat meter on the output from the boiler. If the boiler supplies more than one property, you will need a heat meter for each property as well.

There are many suppliers of boilers in the UK. For installations under 45kW, you should ensure that an MCS* certified supplier installs an MCS-accredited boiler.

It can be difficult to judge the quantity of pellets remaining in your store. You don't want to run out or order too much or too little. Forever Fuels can supply exclusively the DELOX level-sensor and remote monitoring system for your fuel store (see separate sheet). Apart from the convenience and peace of mind, the efficiency benefit (making sure you take the right amount at the right time) means that it will quickly pay for itself in fuel cost-savings.

In general, stoves require Grade A1 pellets (see Pellet Quality insert). Most pellet boilers also require Grade A1 pellets, but larger biomass boilers can often accept a wider range of qualities.

What about the ash?

Very little ash is produced. One tonne of our Grade A1 pellets (enough to heat a typical house for a couple of months) will produce under 7 kg of ash. It will have to be removed occasionally, but has a high nutrient value and can be spread on your land.

Is it smokey?

Under the RHI, pellet boilers will be required to have very low emissions (30 g/GJ for particulate matter and 150 g/GJ for NOx) in order to receive support. Many pellet boilers burn clean enough to be listed as exempt appliance for Smoke Control Areas. Top-quality pellets (Grade A1) will produce the cleanest combustion.

Isn't it expensive?

Wood pellets are cheaper than heating oil, LPG and electricity. The equipment is more expensive, but the combination of the fuel-cost saving, and RHI payments will give rapid payback in many cases, and substantial savings on your energy costs for years to come.

Unlike sustainable forestry, we are using our fossil fuels much faster that they can be replenished. The pressures on our fossil-fuel resources are only likely to get worse. Sticking with fossil fuels is likely to be more expensive than switching to wood pellets.

* Microgeneration Certification Scheme