

Domestic wood burning stoves: A Consumer Guide

The fireplace has been a mainstay of the Irish house for many generations and we all love the comfort and warmth that a traditional wood fire provides.

Open fires and chimneys, however, are major sources of heat loss. An open fire is approximately thirty percent efficient, whereas a modern wood stove can reach efficiencies of eighty percent or more.

If you still wish for the comfort and ambience of an open fire, but need a well-sealed efficient house, then a modern wood stove is a very attractive option.

Not only do you enjoy similar comfort to that provided by a wood fire, with no heat loss through the chimney, you also benefit from much higher efficiencies and therefore less fuel use, a win-win situation.

A dedicated air supply from outside can be connected to a stove so that well insulated, airtight houses do not need permanent air vents to be installed in the walls to provide combustion air for the stove.

Wood stoves can be either of the "free-standing" or "Insert" (i.e. can slot into existing fireplaces) type.

The main types of wood stoves available are :

- *Room heating only wood burning stove (wood log or wood pellet) – often called a "dry" stove*
- *Wood burning stove with built-in back boiler (wood log or wood pellet) – often called a "wet" stove*



Choosing a wood stove : when and why, what type?

Wood stoves - general

A stove, in general terms, is a heating appliance that is designed to give heat directly to it's immediate surroundings, i.e. the room in which it is installed. All stoves have a transparent front which releases approximately 20% of the heat produced to the room in the form of radiant heat. Radiant heat is also the type of heat we receive from an open fire.

A room heating (or dry) stove will distribute the remaining eighty percent of the heat to the room via a hot air fan at the top of the stove, whereas a stove with a back boiler (or wet stove) will use the remaining eighty percent of the heat for heating radiators and hot water.

Wood pellet stoves

Wood pellet stoves offer convenience by way of automatic pellet ignition and a built-in fuel store at the rear of the stove. This store or "hopper" generally ranges in size from thirty to sixty kg approximately, which is enough for one to two days running during a heating season, depending on the stove size. It is important that you source a quality supply of wood pellets for a reasonable price.

For a wood pellet stove you generally require less pellets per year in comparison to a full wood pellet boiler, and so buying in bag form might be more suitable, especially as you will need to bring the pellets into the room to fill the hopper full of pellets.

Wood pellets must be kept dry (approx. 10% moisture content), and bagged pellets offer this advantage straight off the shelf.

Remember also though, that bagged pellets cost more than pellets delivery in bulk (approximately forty to forty five percent more expensive per kg). Look for the wood fuel quality mark (WFQA) , or equivalent, for peace of mind regarding wood pellet quality.

Wood log stoves

If you have a steady source of wood logs available, then a wood stove might be a suitable option to investigate.

Wood log stoves are slightly more labour-intensive their wood pellet counterparts as the firebox must be manually filled and manually ignited when required.

The comparison below outlines some of the decisions to be considered and some of the advantages / disadvantages of both types :

Wood pellet stove

- *Very convenient (automatic ignition and built in fuel hopper)*
- *Largest wet stoves have consumption similar to a wood pellet boiler (therefore economics of pellet supply becomes important)*
- *Very high efficiency (due to both the fuel and stove design)*
- *Wood pellets less messy than log fuel for indoors*

Wood log stove

- *Physical aspect : Manual filling and ignition required*
- *Very practical if a wood log source is readily available*
- *Generally less expensive than wood pellet stoves*
- *Wood logs not as sensitive to moisture content as pellets.*
- *Wood log stoves offer a similar "feel" to the open fire*

All wood heating appliances need to be cleaned, and residual ash must be removed.

Stoves are available with varying levels of automatic cleaning and ash removal, from fully automatic to fully manual and many levels in between. Whatever stove you choose, it is important that the recommended cleaning and ash removal schedules are strictly adhered to. If not, then over time the operational efficiency of the stove will be significantly compromised.

Sizing and Design

- Is my house suitable for a wood stove? *Any house that has space for the stove and the associated items is suitable. If you are thinking of installing a wet stove, then remember that you need access to the heating pipes, so that the stove can be connected to the radiators and hot water systems. If you are connecting a wet stove to an existing back boiler in a fireplace, then this is not a major issue, as the pipes will be already in place. Dry stoves are easier to install, as they have no connection to the heating system.*
- Will the proposed installation comply with building regulations?
 - The stove installation, the flue installation and the air supply for the stove must comply with the requirements of building regulations part J (www.environ.ie/TGD/en). The stove hearth must also comply with building regulations part J.
 - For newer, airtight dwellings, ask your supplier if there is an option to install a dedicated air supply to the stove from outside.
 - Also, remember that if the stove can burn fuels other than wood, then it will not qualify as a renewable heating product which can be used to meet the renewable requirement of Part L 2008 of the building regulations.
- What size stove do I require for my dwelling? *The stove size is related to your dwelling's individual heating requirement. Every house is different, and therefore if installing a wet stove to heat the entire dwelling, you should contact a BER assessor to accurately calculate the heat requirement first. You will then have an indication of the stove size required. For dry stoves you will generally be sizing for a single room, or an open-plan area, and so the heat output required will be much less than a wet stove.*

Equipment Specifications

- Is the stove registered for the Greener Homes Scheme/Building Regulations Part L 2008? Go to www.seai.ie/greenerhomes
- Is it listed on the HARP database (Home Heating Appliance Register of Performance – for BER ratings)? Go to www.seai.ie/harp
- How manually intensive will the system be? *Does the stove have an automatic cleaning and ash gathering function? If not or if partially automatic, then how often should it be cleaned? What should be cleaned and how (heat exchanger and combustion chamber are usually the main concerns)? How often should ash pan be emptied?*

Installation / Commissioning / Operation / After-sales and Service

- What qualifications and experience do the supplier/ installer have? *Important considerations: Are there references available for both the supplier and installer, is the installer registered with SEAI to install wood heating systems : check www.seai.ie/greenerhomes*
- Has the supplier / installer set up the system to operate optimally and have they provided you with all the necessary instructions to understand the system and monitor it? *User instruction manual in English and a full runthrough the operation of the system is useful.*
- What is the warranty on parts / labour, and who do I contact for service / maintenance / troubleshooting / emergencies? *Stoves should have a minimum warranty of two years*

Costs / Payment / Payback

What will the system cost, fully supplied and fully installed : *Wood stoves typically cost between €2,000 and €8,000 supplied and installed. Wood pellet stoves with back-boilers are generally the most expensive, with wood log room heating stoves generally being the least expensive. It is important to ask the supplier if the cost of the flue is also included in the price.*

The fuel cost calculator on the SEAI website can be used to investigate the cost benefits of wood heating : www.seai.ie/publications

Visit www.seai.ie for information on energy saving, renewable technologies and available funding programmes.

For technical information on wood heating systems , email : renewables@reio.ie or call 023-8842193

See also our buyer's guide on wood burning stoves for related information.