

INTRODUCTION

Freshly felled timber contains a lot of water. As much as 50% of the weight of freshly felled hardwood is water, this can rise to 60% for some softwood. The potential energy value of firewood at different moisture contents illustrates the importance of proper drying:

Table 1: Potential energy value of firewood at various moisture contents

Timber	Water % (by weight)	Energy (kwh/kg)
Freshly Felled	50	2.3
Seasoned for 1 year	20	4.1
Oven dried	0	5.4

Table source: Coed Cymru

By comparison domestic heating oil contains 12.8kwh/kg (or 10.3kwh per litre) and anthracite 9.4kwh/kg.

In addition to giving more heat per kilo, dry timber is lighter and cleaner to handle. It chars more readily producing less condensation and tarring in chimneys and the fire is easier to kindle and keep going.

STACKS

Air drying (seasoning) is the most common and cost effective method of drying firewood.

- Logs dry most rapidly through their cut ends, then through split or peeled surfaces and most slowly through the bark.
- The secret of swift and thorough drying is to break the timber down into as small as possible pieces shortly after felling; to stack it with the end-grain exposed to a through flow of air; and to keep the rain off the top.
- Corrugated sheets or plastic sheeting are ideal covers but they must not impede the flow of air through the stack.
- Airflow can also be increased by putting a layer of pallets under the stack.



Fig 1: Firewood seasoning

Figure 1 shows a well made stack, raised on pallets and covered.

SHEDS

Where significant quantities of firewood are used it is worth building a proper drying shed placed to make best use of prevailing winds and sunlight with open sides and rainwater guttering. Principles to consider when constructing and filling a seasoning shed include:

- Timber at the top of the stack dries more quickly than the bottom so aim to build as high as you can safely.
- Make the shed long and thin, rather than square, to expose the greatest amount of firewood to the sun and wind and to encourage a through flow of air.
- The shed should be large enough to hold at least one year's supply, but for oak which is very slow drying, two years is better.
- For timber to dry properly it needs to be stacked carefully.
- Logs left in a heap dry slowly and decay, losing the calorific value as they break down. Careful stacking also makes best use of space and reduces the risk of accidents from collapse. Finally, if you have room it is good practice to continue the drying indoors. A week in warm dry conditions will finish the drying process nicely.

Much is made of the quality of different timbers as firewood. In fact, all dry timbers have about the same calorific value, the difference is in the drying. With simple attention to detail and patience, any species will make good firewood