

Wood

What makes a good piece of wood?

Electric guitars are almost exclusively made from hardwoods. These are timbers with dense grain not necessarily particularly hard as such. This tends to make the structure stronger and more resilient. Every species of wood has different characteristics which make it suitable for a range of purposes. Each individual piece of wood also has its own unique grain structure.

Good

Quarter sawn, straight grain, minimum run out. Wood is stronger and more stable with the grain in this direction

Bad

Slab cut, uneven grain, knots, shakes or splits. More likely to warp or twist.

The ideal piece would have quarter sawn grain with no run out. This may be hard to find. One way of achieving this is to buy larger pieces and re-saw them yourself.

Timber selected for making instruments is generally called Tone wood. Here are some attributes to consider when choosing your wood.

Strength

Your chosen wood needs to be strong enough to withstand a working life under tension.

Stability

Wood is like a sponge in that it can take on and lose moisture. When it does this it tends to shrink or expand accordingly. This can be a problem especially if the piece is part of your neck as it may badly affect the playability of your instrument.

Tone

Sound is changes in pressure moving in a wave through a material. Bass frequencies have more energy and travel farther – that's why you can hear the thud of bass from distant music and little else. High frequencies being packed closer together like this cannot travel so far and are the first to be lost. Experts talk about the 'velocity' of wood. They are simply referring to how fast (or easily) sound waves can travel through it. Put simply a harder or denser wood will sound brighter.

Appearance

All Wood is a beautiful but it can also be highly figured and very expensive. However the more spectacular pieces tend to be less stable. Usually these wilder pieces come in smaller sizes and so their use is confined to caps, veneers and binding. Even a fairly dull looking piece can be made to look stunning with the right finish.

Weight

A heavy guitar can be a pain to lug about and play on stage for two hours. Lighter instruments tend to have a better sustain as it takes less energy to make them vibrate when a string is plucked and will also continue for longer.

Care and storage of wood

It is highly recommended to buy your wood from a dedicated guitar maker supplier. If you do it will be selected and properly dried for instrument making.

The wood should be stored so that air can move freely all around it – this prevents one side drying out more than any other causing instability.

You should let the wood sit in your workshop for a couple of weeks to acclimatize before starting work on it.

This is usually all that is necessary, however if you are acquiring wood from another source you will have to make sure it is properly dry. This can entail buying a moisture meter and making your own drying room (or box).

There are many designs on the Internet for making your own wood drying kiln and conditioning the timber yourself but it can be time consuming.

I keep my wood room at a constant humidity of 30%. This seems to have a stabilizing effect on the wood. The room is lined with a 'vapour barrier' plastic sheet and a de-humidifier is placed inside. The wood is then stacked on shelves with gaps in between.

When I want to use a piece I take it out and let it acclimatize for a few weeks in my workshop which is kept at 45-50%.

Buy a cheap humidity meter - If your workshop is very dry or very wet you will need a humidifier or dehumidifier to suit. You may need both to cover all times of the year or simply restrict building to when the season is more suitable.