

## Splits and Cracks

### Repair Your Didge with Epoxy Resin

Splits and cracks can appear on a didgeridoo at almost time (new or old). Taking care of your didge will help prevent such problems as splits and cracks but it will NOT stop them. They are relatively easy to repair, just a little know-how and patience.

### Why Use Epoxy Resin?



In the event of wood splitting or cracking on a didge I am making, or on a didje I have made or bought I will assess the problem and determine what the most appropriate repair would be. Having experimented with a number of products and techniques I have settled on using resin for a number of reasons, in a nutshell: strength, durability, aesthetics, versatility, and water resistance.

Once cured the resin is like a plastic, it will expand and contract well alongside the wood, the breaking strain of the bonding strength is over 1 ton (for repairs the resin I use has a 2 ton breaking strain ((evidently))). It is resistant to UV and water so is good when playing a didge outdoors. It can be sanded smooth and shine with a gloss finish or a slightly rougher surface to produce a matt or vinyl finish. It can be painted and covered. It can be combined with additives to change the colour and consistency making it possible to affect larger repairs etc.

### Tools and Materials

There a large number of different epoxy resins on the market, all with slightly different yet similar properties. What ever type you choose I would recommend you look for several qualities: i) curing time, if it is less than 15 minutes you may not have time to apply it to the didge. If the curing time is to long the resin will run and sag as gravity pulls it round and down the didgeridoo.

Rubber gloves are a must as the resin is toxic until cured and will cause severe skin problems. Once cured the resin is safe and inert. Try to avoid latex and go for vinyl - as vinyl does not have powdering coating and therefore will not contaminate the resin (also a number of people have allergies to latex). In the UK Wilkinson's do a pack of 10 gloves for something like 55p.

Other bits and bob's you will need are a little container to measure and mix the resin (they can be reused), a mixing stick or brush - I use a McDonalds stir stick.

File, sandpaper, wet and dry paper (as needed), face mask.

### Safety

As I have stated above, resin is toxic until cured and is extremely unpleasant - follow thw manufacturers instructions exactly and you won't go wrong.

Plan out what you are going to do, where and how you are going to do it. The actual repair will only take a couple on minutes but will need to be left flat to cure.



Epoxy resin cures by way of exothermic reaction, in other words it heats up when the chemicals are mixed. If you mix too much in one go the heat can become too hot to hold. Make sure the container it is in is suitable as some substances will melt with the heat.

I lay it on thick but you don't want to have to replace a carpet with a great big hole in it from uncured tipped over resin!

## Preparation

The area around the split or crack should be free of dirt, grease, paint etc. Sand the wood back with 120 grit sandpaper. Use a brush/h Hoover/hair dryer to remove the dust. The aim is to provide a surface with a texture that the resin can adhere to and has the added advantage of revealing the full extent of the damage to be repaired.

Some cracks are barely visible on the surface, yet become bigger underneath. Many splits run further than any visible gap so it is always an idea to effect a repair on a larger area than just the damaged bit. Using a sharp blade (Stanley knife or similar) work the split or crack on your didgeridoo so that it is open. Kind of make it a narrow 'V' shape as this will allow the volume to be filled easily.



## Mixing the Resin

Once you are fully prepared you will need to mix the epoxy resin together. Unlike other products that set when two parts are mixed, resin will only set if the correct quantities are mixed - it will not set quicker by adding more hardener (believe me it is really, really difficult to clean up uncured resin). Work out much resin you will need to mix. If the repair is large and/or deep you may want to apply several layers as trying to do it in one go doesn't work out that way!

Mix thoroughly but try to avoid too many air bubbles as they can set in the resin and weaken the repair, however you will end up with a few when stirring the mix.

## Adding Filler



When the repair is large you may want to consider adding filler to add more body to the resin. Most resins come with instructions as to recommended fillers such as very small polystyrene balls.

Always follow the manufacturer's instructions as they will include what consistency and ration you need to mix everything together.

I normally use sawdust, the finer the better. I invariably use the dust produced from sanding the wood in the first place is good enough, but also have a collection of different coloured sawdust from a range of species of wood so I can match with the wood of the didgeridoo.

If you add sawdust to the mix, the epoxy resin will make the colour of the dust change in the same way varnish does when coating bare wood i.e. it will deepen the colour and make it shiny. Experiment on a spare piece of wood if you are in any doubt

## Effecting the Repair

Ok, now the resin is mixed, the didge is secured in place, I will use the stir stick to drip the resin into the repair. If the area is large I may pour it in but normally don't like to do this because it's too easy to spill. Having applied the epoxy resin to the split/crack I use the stir stick like a spatula to work it into the repair. This is where having as little and few air bubbles help as they are awkward to get rid of.

It is good practice to leave the repair proud i.e. raised. As it is far easier to file and sand down than

have to wait and apply a miniscule amount to a little air hole.

If you do encounter air bubbles there a couple of things you can do to get rid of them. Firstly, using a pin to prick the bubble and break the surface tension, and secondly using a hot-air dryer or paint remover hot-air gun to gently heat the resin. Heating the resin will make the liquid (now turning to gel) more runny and lose the surface tension it had. Heating the resin will also speed up the curing time by augmenting the exothermic reaction.

Then leave it to cure. I'm not superstitious but always try to veer on the safe side and allow a little extra time for curing. The exception to this is if a further layer needs to be applied. Any supplemental layers added after the resin is cured will be a completely separate layer. Further layers added when the resin is still tacky (just before it fully cures) then the subsequent layer will mix with it to become one solid mass.

### **Making Good (Finishing)**

To remove the excess cured epoxy resin a file is about the best implement to use as a wire brush will remove any clogging. Sandpaper will clog very quickly and become useless, power tools will heat the resin up and melt it, again clogging up the disc or pad etc.

Once the bulk of the excess is removed, I use sandpaper then wet and dry to end up with the finish I want. If the didgeridoo is going to be covered i.e. painted or coated in resin then I will leave the finish at 120grit. For a vinyl effect finish up 400 - 600 grit wet and dry and for a gloss finish up to 2000 wet and dry. For didges that are being completely refinished I will leave the resin at 120grit then sand it along with the rest of the wood.



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