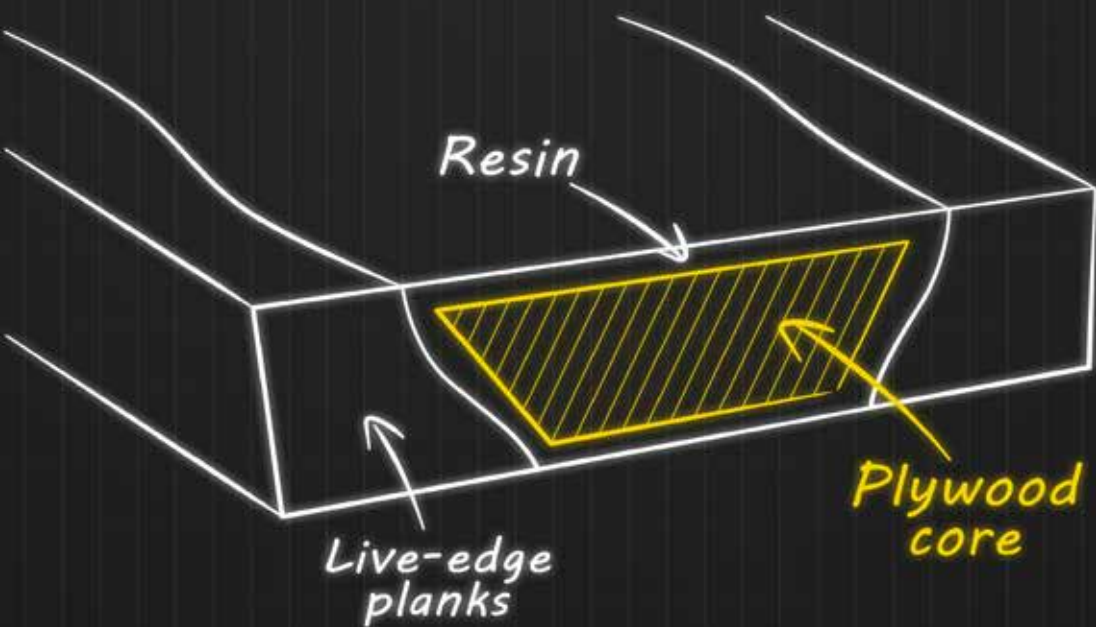


HOW TO MAKE A

# Less Resin River Table

THE COMPLETE GUIDE



# How to make a Less Resin River Table

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# Introduction

## The aim of this guide

There is no denying that resin river tables have been one of the hottest topics in epoxy resin in recent years. In our experience, many people would love to craft their own river table but, with costs of materials increasing all the time, at GlassCast HQ we wanted to share a great 'hack' for DIY'ers to create their own beautiful table using much less resin and therefore significantly reducing their costs!

If you are making a solid colour or metallic effect resin river table, then our incredible plywood core construction method is perfect for your project.



This technique is aimed at DIY'ers and will help to save the maker a huge amount of resin, money and resources and still result in an identical outcome to a solid resin pour.

Our professional quality epoxy GlassCast 50 Resin is available on the GlassCast Resin website along with the a wide choice of epoxy colour pigments and metallic powder pigments to create beautiful rivers. You can also find the ancillary items needed for this project and if you take a look at our customer gallery you will find lots of inspiration.

The aim of this guide is to provide hobbyists and keen DIY'ers with a detailed guide that can be followed step-by-step with all the information on how to make a stunning table like this.

Of course the techniques shared in this guide can be adapted to make a range of furniture pieces which combine wood and resin, although if you have your heart set on a traditional translucent resin river table you will need to follow the original project in our learning area and use the full amount of resin.

This eBook also includes all the expert advice you will need to avoid common mistakes and make a success of your 'less resin' river table project.

So if you're serious about making a piece of furniture like this classy, yet cost-effective river table it's suggested that you read this guide in full before you start, watch the accompanying tutorial and read the technical and safety datasheets on the product pages before getting started.

If you need any advice or help please get in touch with our friendly team at GlassCast who will be happy to help, advise and assist with everything you'll need to produce a stunning piece like this!

# Before You Begin

## What You Will Need

Resin, pigment, live-edge wood, plywood sheet, additional materials and tools.



### Materials

- GlassCast® 50 clear epoxy casting resin (including hardener)
- Your choice of epoxy pigment - must be solid colour or metallic powder for this project
- Your choice of live-edge wood
- Plywood sheet (or similar) to be used as the core material

### Ancillaries

- Materials to create the mould box - we used melamine but other materials like polypropylene are suitable, or a surface covered in resin release tape
- Mixing buckets and mixing sticks
- Resin barrier tape
- Abrasive papers
- Mould release wax and filleting wax
- Wooden battens and blocks and clamps or weights
- Disposable brushes
- Nitrile gloves, glasses/goggles and a respirator mask (in case of insufficient ventilation)
- Cutting and polishing compounds and polishing pads



### Finishing & Polishing

- Tools including DA Sander with a range of abrasive papers and a Power Planer
- Cleaning Equipment
- Table legs of your choice and danish oil
- Jigsaw
- Power polisher

# Choosing Your Wood

The first task is wood selection. There are a few things to consider when choosing the wood for your project and the aesthetics of the slab is very important. In the project, we selected a beautiful hackberry plank with its naturally pale appearance and fine grain detail which contrasts so beautifully with the black pigment.

It all comes down to personal preference, but whichever wood you choose - make sure that it is well seasoned and has a low moisture count. Wood is affected by environmental factors and is prone to expanding and contracting in varying levels of humidity. It's important to start off with a well seasoned piece of timber which will minimise the amount of shrinkage and distortion in the finished piece and will reduce any issues you may experience along the way.

Making sure that your slab is as flat as possible will help in the long term and mean that you will have less finishing work to do - such as excessive machining later on in the process.

We are lucky enough to have a saw room at GlassCast HQ and have access to the tools needed on site, if you don't have access to this machinery it is possible that the timber merchant you sourced your wood from could cut the plank to size for you.

The slab will need to be cut straight down the middle, then when you flip the planks so that the two live-edges face each other this will create the river channel.

If the wood is a little twisted, it will benefit from a few passes through a thicknesser. Although it's not absolutely essential at this point, it will reduce the amount of flattening and finishing to be done later in the process.



The wood will also need to be sealed to stop bubbles appearing in the resin, which we'll show how to do this in a later step.

It's essential that any loose material along the live-edge, like bark, is removed - we know it's tempting to leave it on to add interest or you may think it won't be seen under the resin, but it does need to be removed to ensure a strong bond between the resin and the wood. We'll go through this in more detail in the 'Preparing the Wood' section.



Once the live-edges are cleaned up and the preparation to the wood is complete you are now ready to move on to setting up the barriers around the slabs and fixing them in place ready for the first pour.

# Safety Information, Environment & Epoxy Resin

## IMPORTANT SAFETY INFORMATION:

GlassCast 50 Resin is a chemical product. Before storage or use you must download and read the accompanying safety datasheet, available on the GlassCast 50 product page.

A Summary of the most important information is as follows:

- Always wear nitrile gloves when handling the resin or hardener
- Never touch uncured or partially cured resin with your bare skin
- Wear suitable eye protection when handling the resin or hardener

Although GlassCast 50 Resin is solvent free and has almost no odour you should still work in a well ventilated area or wear a vapour respirator mask.

## Ambient Temperature, Pot-Life and Cure Time

Epoxy resins are highly sensitive to ambient temperature and moisture.

To achieve the best results, we recommend working in a room temperature of 20°C. GlassCast 50 can be used in temperatures from 15 to 25°C but higher temperatures will reduce the pot-life of the resin significantly; at 20°C the pot-life is between 30 and 45 minute and the curing time is 48 hours.

Epoxy resins are very susceptible to moisture and humidity so it's important to make sure the environment is dry and heated.

## Airborne Dust and Contamination

Whilst the resin is still in the early stages of its cure, it is important to keep airborne dust and contamination to a minimum. Before you begin you should ensure that the area you're working in is as free as possible from dust and dirt.

Although you need good ventilation whilst working on the project, in order to minimise airborne dust and contamination, it's best to minimise air movement or disturbance in the room as soon as you have finished working.

# Epoxy Resin for your River Table Project



## Epoxy is epoxy, right?

The resin used in this project is the GlassCast® 50 casting resin, this resin is specially developed for use alongside natural wood materials to create professional quality resin furniture pieces.

To ensure the best possible appearance for projects like river tables, this resin is incredibly clear, highly UV resistant and is designed to degas itself during cure.

Unlike more conventional epoxy resins, GlassCast® 50 can be cast in thicknesses up to 50mm in a single pour (which is adequate for just about any river table) and if more thickness is required it can be layered on itself to produce a seamless block of resin of almost any thickness. When it comes to finishing your project, GlassCast® 50 is highly polishable and can easily be buffed to a glass-like finish and it's super tough formulation makes it hard wearing and less prone to scratches.

## How much resin will I need?

The very nature of a 'live-edge' on a piece of wood makes it difficult to calculate exactly how much resin you will need for the project. There are some practical methods that can be used to measure the exact volume of an irregular shaped cavity - such as pouring rice or sand into the gap and then measuring the volume - but in most cases it is more a case of measuring the channel width in several places and taking the average. You will then be able to estimate the volume of the gap. Because this method involves creating a plywood core which will take up the majority of the river channel, with the aim being to allow for a 5mm depth of resin around the entire core, in effect encapsulating it. The river channel should be measured approximately in length, width and depth to find the cuboid volume, as follows:

$$\text{Length}(\text{in metres}) \times \text{Width}(\text{in metres}) \times \text{Depth}(\text{in millimetres})$$

The resulting number will be the volume of this shape in litres: For example:

$$1.5\text{m}(\text{length}) \times 0.2\text{m}(\text{width}) \times 34\text{mm}(\text{depth}) = 11\text{litres}$$

The plywood used in the tutorial had a depth of 24mm which will be cut into the correct shape, this means that it would take up the following space:

$$1.49\text{m}(\text{length}) \times 0.19\text{m}(\text{width}) \times 24\text{mm}(\text{depth}) = 6.8\text{litres}$$

The total volume of the plywood core can then be taken away from total volume of the river. This gives a total for the resin required for the project. The total is 4.2 litres meaning that a 5kg kit will be more than enough for this project. Total amount needed will vary depending upon your project size.

# Avoiding Overheating / Exotherm

The GlassCast range of resins, in common with all epoxies, generate heat as part of the curing process. In order to ensure that the resin does not overheat during mixing and curing, it is essential to make sure you stay within strict limits of ambient temperature, time-in-pot and pour depth, as well as avoiding localised overheating from direct sunlight, nearby radiators or heat guns/hair dryers. Failure to do so could result in damaged resin, or in extreme cases, resin smoking or igniting.

The recommended working temperature for GlassCast is 18-20°C. When working in higher ambient temperatures, pay attention to the reduced pot-life and maximum pour depth, as shown below.

| <b>Ambient Temperature</b>                                               | <b>15°C</b><br>(minimum) | <b>20°C</b><br>(recommended) | <b>25°C</b><br>(maximum) |
|--------------------------------------------------------------------------|--------------------------|------------------------------|--------------------------|
| <b>Maximum Time in Pot (Pot-Life)</b>                                    | 80mins                   | 60mins                       | 40mins                   |
| <b>Maximum Pour Depth</b><br>Into a thin-walled mould (silicone/plastic) | 50mm                     | 40mm                         | 30mm                     |
| <b>Maximum Pour Depth</b><br>Into wood or an insulating mould            | 25mm                     | 25mm                         | 18mm                     |
| <b>Initial Cure Time</b>                                                 | 96hrs                    | 72hrs                        | 48hrs                    |

## Ambient Temperature

Epoxy resins are highly sensitive to ambient temperature (room temperature) throughout their cure. For best results, we recommend working in a consistent room temperature of 18-20°C. GlassCast can be used in temperatures from 15 to 25°C but higher temperatures will reduce the pot-life and the maximum pour-depth of the resin significantly. Never work in ambient temperatures exceeding 25°C, or exceed the maximum pour depth for a given ambient temperature (as shown in the table above) otherwise the resin could dangerously overheat, especially on larger pours.

## Maximum Time in Pot (Pot-Life)

As soon as the resin and hardener are mixed together, the curing reaction begins. Due to the volume of resin all in one place, mixed resin in the pot will begin to gradually warm up. The amount of time that mixed resin can stay in the mixing pot before it overheats is known as its pot-life. Once you've mixed your resin, make sure you use it within the pot-life stated for your ambient temperature (see table above). Once you're done, if you have more than the maximum pour depth of leftover resin in the pot, place the pot outside - just in case it starts to overheat.



# Step-by-Step Guide

## 1. Preparing the Wood

If you are carrying out a conventional river table format, you will need to begin with a slab of live-edge or waney-edge hardwood of your choice. Cut the plank down the centre and flip the planks so that the live-edges form the river channel. This will give you an idea of the appearance of the finished table and enable you to decide how wide you would like the river to be.



Live-edge planks can be sourced from a number of suppliers who specialise in waney-edge, interesting timbers.

Most suppliers will also kindly cut the slab down the centre for you if you don't have your own equipment.

Remember: it's important that the wood is well seasoned, with a low moisture count and is as flat as possible.



To prepare the planks for the pour, you will need to remove any loose bark and material from the edge.

Using a chisel and mallet will make light work of removing the bark from the live edge.

The edges will need to be sanded with rough abrasive paper. This will give the resin a good surface to adhere to and ensure a strong bond between the planks and resin.



Finally, thoroughly clean the planks to remove any dust or dirt.

The planks are now ready and you can move on to the second step, setting up the mould box.

## 2. Making and Preparing the Mould Box

Enclosures for resin pours can be created in lots of different ways, including using a polypropylene plastic base and upstands on a wooden backing which epoxy resin won't stick to, or using timber batons covered in resin release tape - both of these methods can be found in our other tutorial projects.

For this project we demonstrate making the mould box using melamine boards (also known as furniture boards).

To create the box, measure up and cut out the base and sides and fix the upstands to the base using screws.



Once the box is assembled, it's important that you follow the next steps to make the form watertight and to ensure that the slab will release from the box following the resin cure.

To make the box watertight it's important to fill the gaps between the base and the uprights with filleting wax to prevent any resin from leaking out.

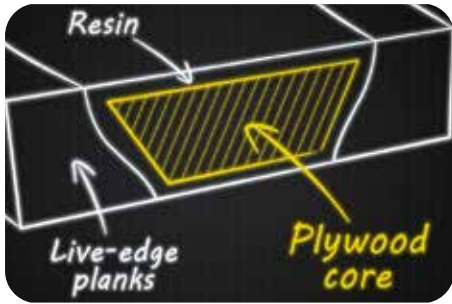


The wax will need to be pushed into the gap and any excess scraped away using a tool like a ball end wax filleting tool, then any loose wax should be removed.

Although resin generally won't stick to melamine, we recommend applying a release agent just to make sure. Various products are available including the RW4 spray wax used in the tutorial.

### 3. Creating the Plywood Core

The project up to this point, follows that of a traditional river table project. This is the point where things change and you will learn our resin saving technique using a plywood core! The core will take the place of the bulk of the resin that would be required in a standard river table project.



The amount of resin needed for the project will be dramatically reduced by the plywood core.

The aim of this step is to create a 5mm (1/4") resin pour around the core - effectively fully encapsulating the core.

The size - thickness, width and length - of the core will of course depend upon size of your slabs and overall table size.



Begin by tracing the profile of the wavy-edge on to a plywood sheet, including any considerable knot-holes or gaps.

To accommodate the angle of the live-edges you may need to set your jigsaw to an angle when cutting out the shape.

Once cut out you may need to make some adjustments to the core to get a 'best fit'.

It may be necessary to cut on a sharper angle to allow for a steeper angle on the live-edge.

Remember; when checking the fit of the core in the river channel, don't forget that you will need to factor in the 5mm resin pour below the core.

TIP: Use lollipop sticks to simulate the 5mm under the core.

The fit of the core to the channel won't be exact, but rather a 'good fit' with a 5mm gap all around.



If you have sizeable knot-holes in your timber, create cores for each of these using the same method.

You are now ready to move on to the next step, working with the resin!

# 4. Measuring, Pigmenting and Mixing the Resin

To ensure colour consistency, we advise that you pigment all of the resin needed for the project in one go. It's really important to remember that if you are blending colours or using metallic effects, this stage is especially important to ensure a consistent colour.



The resin used in this project is the GlassCast 50, having been used in all our river table projects and thousands of customer projects - it's the go-to epoxy for this type of piece.

Select a container large enough to hold all the resin for the project and pour all of the resin (Part A) into the container. In our case we will be using a 5kg kit, so will pour all of the resin into the bucket.

The pigment we chose is the CULR Jet Black epoxy pigment which is highly concentrated. To achieve a solid black effect, we added 5% pigment to the resin. You can of course use the colour of your choice, you just need to ensure that it is a solid colour. Mix the pigment thoroughly into the resin, periodically scraping the sides and bottom of the pot to get a consistent mix and to make sure that no unmixed pigment is stuck to the sides. Check the colour is ok, by spreading or wiping the resin across the side of the bucket - the colour should still appear opaque even when spread thinly.



Next use some wooden blocks covered with a resin release tape with clamps to hold the planks in position in the mould box. This is really important to stop the planks lifting and allowing the resin to seep underneath.

The next step will be to calculate the amount of GlassCast 50 needed for the 5mm base layer.





To work out how much resin is needed for the 5mm base pour (first pour), use the area of the river multiplied by the depth of pour:

$$1.5\text{m (length)} \times 0.2\text{m (width)} \times 5\text{mm (depth)} \\ = 1.5 \text{ litres}$$

which means that 1 litre of resin and 500ml of hardener is needed. GlassCast 50 has a 2:1 ratio by volume so is easily measured out using calibrated cups.

Thoroughly mix the pigmented resin and hardener together for 3 minutes, periodically scraping the sides and bottom of the pot to ensure it's fully combined. After 3 minutes have passed, transfer the mix to a second clean pot and mix for a further 3 minutes - we refer to this as 'double-potting'.



## 5. The First Resin Pour

Simply pour the mixture into the base of the river channel and into any large knot holes up to a height of 5mm. Then using a brush, seal the live-edges using the base pour and leave to cure for 12 hours at a constant ambient temperature of 20C.



## 6. Inserting and Sealing the Core



When the resin has cured to the B-stage we can move on to the next step.

The B-stage is when the resin has reached a firm but tacky stage - a simple test for this is to press a gloved finger on the surface and it should feel firm to the touch but no residue should stick to the glove.

The clamps and blocks can now be removed.

It's now time to bond the plywood core into the river channel. To do this you will need to mix up a small batch of the pre-pigmented resin - the quantity will depend upon the size of your project.

Follow the double potting mix method as before and pour the majority of the mix into the river and any knot holes. Next, carefully place the plywood core into the river channel, lowering one side first and then press the core down, along it's full length to prevent any air cavities forming on the underside of the core.

Once the core is in position, use a brush to seal and coat the sides and top surface, then leave to cure for a further 12 hours.



## 7. The Second Resin Pour

Check that the bonding and sealing stage has cured to the B-stage and is ready for the final pour. This pour will completely encapsulate the core and form the surface of the river.

Begin by mixing up the remaining pigmented resin and hardener from the 5kg kit using the double potting method as previously described. Once fully mixed, slowly pour the mixed resin into the river channel and any knot holes and cracks. This should fill the channel and voids level with the top of the planks.



The project now needs to be left to fully cure. The full cure will take approximately 48 hours at 20C.

## 8. Machining the Surface



Check the resin has fully cured and remove the slab from the mould box carefully and prepare to machine the surface.

The form should release from the box easily if you prepared the form well.

To machine the surface, we set up a router sled on a flat surface as shown in detail in our original river table project - for instructions please see:

[www.glasscastresin.com/river-table-tutorial](http://www.glasscastresin.com/river-table-tutorial)

The routing process is repeated on both sides of the slab until the surface is completely flat, both top and bottom. The edges are then trimmed on a table saw.

Before moving on to flattening the surface in the final step, some small imperfections were identified.

This is where the router had taken a few small chips out of the surface of the resin, possibly caused by moving the router too fast. These imperfections can be easily fixed by following the next step.



#### STEP 1:

Before filling any small holes or imperfections, thoroughly clean the surface using a vacuum cleaner and if necessary, wash and thoroughly dry the surface before moving on to the next step.



#### STEP 2:

Mix up a very small batch of resin and hardener and add the pigment to match the main pour as closely as possible. Then using a lollipop stick, carefully drizzle the mixture into the holes and allow to fully cure (for a further 48 hours) before moving on to the flattening and polishing stage.

## 9. Flattening and Polishing

Once the repairs have fully cured, the flattening can begin. Using a Dual Action Orbital Sander (DA) which will make light work of a job like this one. Work up through the grits from 240 grit all the way up to 1200 grit. Remember don't move on to the next grit until all marks are removed from the previous one. It's always worth taking the time to do a thorough job of flattening and polishing to achieve the best results.

For lots more information on effective flattening and polishing, see our dedicated guide:

[www.glasscastresin.com/how-to-flat-and-polish-epoxy-to-a-mirror-finish](http://www.glasscastresin.com/how-to-flat-and-polish-epoxy-to-a-mirror-finish)

When using the finer grit abrasive paper, it's advisable to wet sand on the resin surface areas.

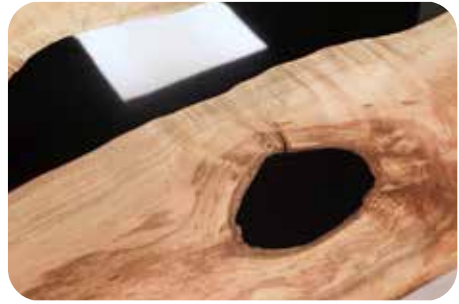
Before moving on to the polishing step, it's best practise to protect the wood from the polishing compound. This will avoid staining the wood whilst polishing the resin. There are lots of products readily available from DIY stores, we used danish oil. Simply applied in several coats with a lint-free cloth, which was gently wiped over the surface, allowing it to fully dry before moving on to the final stage - polishing.





With the wood protected, it's now time to bring the resin river up to a full gloss using a polishing compound. Using a polishing machine makes the process much faster than by hand.

The polishing compound used with a polishing machine with a sponge pad will produce a high level of gloss. To give it that extra 'full gloss' you can use a product such as Topfinish applied with a soft polishing pad to give it that extra shine!



## 10. The Finished Table

With a final wipe over with a soft cloth and the fitting of your choice of legs - the table is now finished and what makes it ever better - this technique uses approximately 1/3 of the resin usually required for a resin river table project!

As always with a project like this the style of legs and finish all comes down to personal preference. This project is now complete and the finish is amazing! The super hi-gloss black resin river contrasts incredibly with the beautiful natural grain of the hackberry wood and the plywood core that's been encapsulated in the resin is completely invisible and has dramatically reduced the resin and materials needed and saved lots of money on the overall spend!

So, if you're planning on making a resin river table with a solid colour or metallic effect river then this is a great project to get started with!

# 11. After Care

Now that your GlassCast® 'Less Resin' River project is complete you'll want to keep it looking great for years to come.

Here are a few important things to keep in mind when looking after your epoxy resin table:

- Hot Objects - You should not place hot objects directly on to the resin (pots, pans, plates or mugs) as this may mark the surface. Instead use coasters or heat proof mats. If you do find that hot objects have marked the surface it can be flatted and polished again to remove any marks.
- UV Light - GlassCast® 50 has been designed to have the best UV stability of any epoxy resin on the market and should withstand years of indirect sunlight with very little effect. However, common with just about all materials of this nature, prolonged exposure to UV light, particularly direct sunlight, can eventually cause some change in the appearance of the resin.

For this reason, finished GlassCast® projects are not recommended for outdoor use and should be kept away from direct sunlight where possible.

- Scratches and Marks - GlassCast® 50 is very hard wearing plastics and will hold up to the rigours of light daily use without marking. However, accidental damage can be caused by sharp objects scraping over the surface of the resin or from things being dropped onto it. If this occurs, these can be polished out using the same process that was used for the initial sanding and polishing ; i.e. abrasive paper (for coarse scratches) followed by polishing compound to restore the gloss.



## 12. Alternative Projects

GlassCast 50 is the ideal epoxy resin for this 'less resin' river table and the techniques used to create this attractive table and the resin saving core technique could be adapted and used to create other furniture pieces using the same process.

By marrying the natural wood with the solid resin, you can fill the cavity with a core, even using waste offcuts and other encapsulations to bulk out the space usually filled with resin.

The 'core' method could be scaled and used in the following projects:

- Presentation / Serving Boards or Platters
- A Wooden Lamp Base - with Forged Carbon Channel
- If using clear resin for the river, alternative objects could be encapsulated, such as stones, coffee pods, toys (like lego) shells and other found objects, which should be sealed following the core sealing step which will all take up space.

Alternative table projects:

- Classic Resin River Table
- Neon Plank Table
- Forged Carbon Fibre River Table

