



# How to Create a **RIVER** **TABLE TOP**

Photos by Dárol Orotde

River tables are all the rage these days, and for good reason. With lots of live edge lumber options, and a wide array of epoxy colours available, there are infinite options for how your river table top can look.

BY PAUL LEMISKI

**W**ith the flood gates open, pardon the pun, epoxy “river tables” are not only fun to create, but as a full-time woodworker, they’re also in demand from my clients right now. Maybe you’ve seen the viral videos of people pouring blue goo between two pieces of wood ending up with a beautiful table. I will cover all of the steps involved, so you can make one of these beautiful tops for yourself.

### How big?

I’m usually working for a client so the size is already determined, but perhaps you’re building this with a size range in mind. Either way, we need some lumber. Using some cheap sheet goods I like to make a frame of the size of table I’d like to create to help me view the wood’s grain characteristics properly. I lay the lumber out how I like, then place the frame over the lumber, so I can visualize as close as possible what the end result will be. Covering up the unwanted wood makes this step a lot easier to get right.

### Check your wood

With a good idea of what the general size of the future table top will be you can play around with the material you have to see if you can make it work. Sometimes, even though you want a top of a certain dimension, the material you have on hand doesn’t lend itself to that. Just ensure you can indeed obtain the solid wood parts needed before going ahead with the construction of your form.

### Build the form

I like the KISS method, so let’s keep this simple. I like to use 3/4” particle board, and cover the surfaces that will touch epoxy with Tuck Tape sheathing tape, so the epoxy doesn’t stick to the form. The form is joined together with screws and latex caulking so it’s strong and will hold the liquid epoxy during the pour.

First, cut the bottom to size. I like to build the form about 1/2” wider and longer than the finished size of the river table top. This will give you some material to trim off after the epoxy has cured.



**Cover it in Tape** – Tuck Tape, a construction-grade adhesive tape, is applied to the inner surfaces of the form before the form is assembled. It will stop the epoxy from adhering to the form as it cures.



**Seal the Joints** – Because the joints all need to contain liquid epoxy, they need to be watertight. A healthy bead of caulking will help with this.



**Mark the Lumber** – Most lumber will need to be trimmed to size. Mark it with a straight edge, being sure the lumber will look good when matched with any other pieces you’re using, and will be sized appropriately.



**Frame It** – Lemiski will sometimes make a very simple frame the size he wants the table to finish at. He can then arrange the lumber on the ground or bench, put the frame on top of the lumber to get a good view of what the arrangement will look like, then trace the cut lines onto the lumber. This step can also take place before the form is built.

**Trim it to Size** – Carefully cutting the lumber to dimension will help you use less epoxy. The more curves there are in the edges of the lumber, the more volume the epoxy will have to fill.

Tape off the entire surface of the interior side of the bottom with the Tuck Tape.

Dealing with how to attach the sides to the base is personal preference. Because I make many of these table tops I keep a selection of form bottoms on hand so I don't waste time and material. If a piece is large enough to use as a bottom, I go ahead and cut the sides to fit on top of the bottom before securing them in place with screws and caulking. If I was just making one river table top, I would likely cut the bottom to size and attach the sides to the 3/4" wide edges of the bottom.

Next, cut your side pieces to length and width. You'll need them to be taller than the thickness of your lumber so epoxy doesn't overflow. Completely tape off these pieces, being careful to fully overlap



**Minor Adjustments** – Sometimes the lumber you're working with isn't perfect. Marking the material where it needs to be removed will allow you to coax a more pleasing design from the material you have on hand.



**Shape the Wood** – Often the wood you have will work nicely, but that's not always the case. Some rough machining will go a long way to providing you with a visually pleasing 'river' of epoxy. Here, Lemiski is using an angle grinder to remove some material.



**Place it Inside** – With the form complete, and the material cut to size, fit the material into the form to ensure it fits. Here, a piece of lumber Lemiski wants to use has broke in two, but the wood’s fibers will fit together nicely, and a very small amount of epoxy will get into the joint to add some strength



**Keep it Down** – In order to keep the lumber from floating once the epoxy has been poured into the form Lemiski clamps a piece of wood across the top of the lumber. He also adds a pair of small scrap blocks between the lumber and the clamped piece of wood so the epoxy doesn’t adhere that piece to the table top.

the seams and lay the tape down nice and smooth. Any bumps in the tape now can make more work later on. Place a bead of latex caulking along the edge and screw the pieces in place. I like to be liberal with the sealer as this form needs to be water tight. You could pour about one hour after you seal the form, but I suggest waiting overnight just to be sure.

## Prepare the solid wood

Depending on where you get your lumber, it may be surfaced flat or it may still be in rough form. Either way, you want to have your lumber surfaced flat and cut to size to be able to fit into the mould.

## Epoxy Sources

Slow-setting epoxy can be purchased at many locations across Canada. Although it’s possible to use fast-setting epoxy to make river tables with very small gaps, we’re leaving it out of the sources, as that wasn’t the focus of this article. The techniques to make a river table with fast-setting epoxy differ from using the slow-setting method discussed here.

A&M – West System Epoxy, EcoPoxy

Atlas – EcoPoxy

Exotic Woods – Epoxy, West Systems, and their own “Exotic Woods Thick Pour Epoxy”

KJP – EcoPoxy

KMS – EcoPoxy

LeeValley – West System Epoxy

Woodchuckers – West System Epoxy, EcoPoxy, Entropy Resins

Woodshed Lumber – West Systems



Photo: Ecopoxy

With the size of the form cavity in mind, draw layout lines onto the lumber. Once you’re sure of the locations that you will cut the lumber, trim the parts so they all fit nicely together in the form, with the all-important gap for the epoxy to flow into.

I suggest removing all the bark and loose debris. This can be done by sanding it smooth, or using a wire brush. There’s a chance you’ll even have to use an angle grinder with a power carving wheel, or some hand tools, to ensure the live edges of the material look natural when brought together. If you happen to have a sand blaster you can fill it with crushed walnut shells. This works incredibly well for very burly edges.

## To seal, or not to seal?

If you’re going to be doing a pour that is clear or very transparent, it’s a good idea to seal any surfaces of the lumber that will be adhered to the epoxy in the final table top. Without doing so bubbles get released from the solid wood during the curing process, and are visible in the final product. When using pigments the seal coat is not really needed, as the micro bubbles won’t be visible. I chose not to seal the solid wood because I went with a pigmented epoxy pour. For the table I’m working on here I would have sealed the two long grain live edges before doing the main pour, if I wasn’t using pigmented epoxy. You



**A Thorough Mix** – A drill and a paint mixer does a good job of mixing up the epoxy. It's critical to ensure the epoxy is completely mixed or parts won't dry.



**Flood the Form** – Once mixed, pour the epoxy into the form and let it flow out. There's no reason to rush at this stage, as epoxy dries very slowly.

can use the same epoxy mix as you will use for the main pour, but since you'll have to wait a fairly long time for that epoxy to harden up enough before you can do the main pour, things get very tricky, timing-wise.

Instead, use a 20-60 pot life epoxy, which will usually harden in 24 hours, but don't wait that long before continuing with the pour. You should do your main casting pour when the sealing epoxy is about half cured, which is typically about 6-10 hours. I often seal first thing in the morning and pour in the evening.

## Calculate the volume of epoxy

Finally, let's get the lumber into the form. First make sure the form is level and well supported. Epoxy is heavy and a form that isn't fully supported can sag, leading to more work down the road and a thinner table top. Gently place your pieces in the form, being careful to not bump the edges. Remember, this form must be water tight to work.

Now you need to know how much epoxy to pour. To do this you

have to estimate as close as possible how much volume there is in the empty space between the two slabs. Use the formula  $\text{Length (m)} \times \text{Width (m)} \times \text{thickness (mm)} = \text{Litres}$  to figure out the volume of the space. The length and thickness are both easy. It's the width that will need some calculating. My approach is to take many measurements across the gap, then average them out to figure out a distance to plug into the formula. It's a good idea to make a mark every few inches across the length of the gap so you can systematically find the average width. The gap in the table top I'm working on is 1.2192m long  $\times$  0.09398m wide  $\times$  50mm thick which came out to 5.8 liters of epoxy.

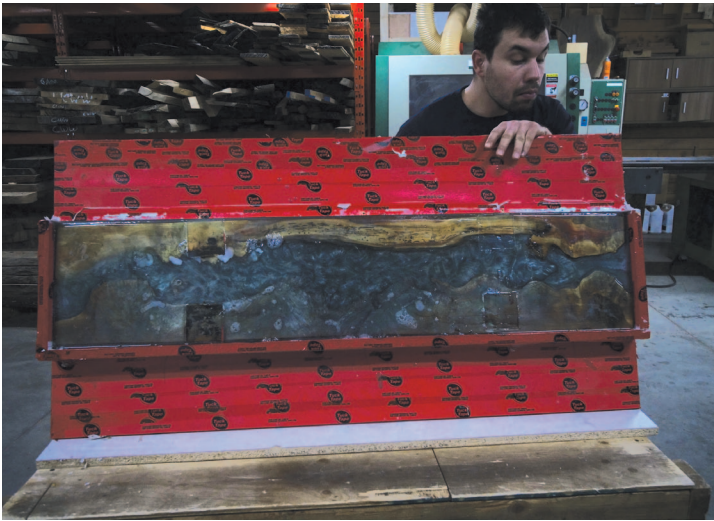
There are two ways of doing the pour. With the first approach you can pour just until the epoxy is level with the top surface. The benefit of doing this is that you will use less epoxy, and there will likely be less machining down the road to create a smooth top surface. The other method is to completely cover the entire surface of the wood about 1/16" thick. It can be beneficial to pour to a height above the top surface of the solid wood because if you

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**Dismantle the Form** – Once cured, you can start to remove the sides of the form, unscrewing them, and taping them out one at a time.



**Machine Normally** – Cured epoxy can be thickness planed and cut to size with a circular saw blade, like any regular piece of solid wood.

have lumber that's full of holes and cracks you can get it filled in a single pour. As the lumber is absorbing the epoxy the level will drop. If you are going to add extra epoxy over the lumber make sure to mix extra.

One last critical thing to take care of at this step is to hold the wood down because it floats. Either screw it through the form from underneath, or use some blocks and a thick piece of wood and clamp it down to your worktable.

## Mixing the epoxy

Mixing and pouring the epoxy is where the fun starts. There are many types of thick pour epoxy products available. For this pour I'm using an epoxy designed for up to 2" in thickness. Follow the manufacturer's suggested instructions. In general, thick pour epoxy products are designed for different material thicknesses and volumes at 20 to 22° Celsius. Depending on your environment, you

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**Sand it Smooth** – Whether you're sanding solid wood or epoxy the same rules apply. Smooth, even passes, progressing through the grits, until the surface is ready for a finish. At this point, any air pockets can be roughed up and filled with epoxy to create an even surface for accepting a finish.

may have to have fans blowing, or air conditioning running. When the epoxy is curing I like to see the epoxy stay below 30° Celsius. There is certainly a learning curve when doing thick pour epoxy projects, but with each pour you'll have a little more understanding of exactly how epoxy reacts in your environment. There is certainly a learning curve when doing thick pour epoxy projects.

I mixed up the product in a 5 gallon bucket with a silicone drill mixer at 2:1 ratio by volume. Make sure to mix for 5-10 minutes and scrape the sides and bottom while you mix. To be extra safe you can transfer into a new pail, removing the chance of any unmixed product on the sides or bottom of the container.

## Time to pour

Now let's pour. Don't be concerned about the bubbles and there's no need to rush. Thick pour epoxies have a long pot life up to 700 minutes and the low viscosity will let all the bubbles release on their own. Some may suggest to use a torch at this stage to remove surface bubbles, some do not. I've done both. It's pretty satisfying to do it with a torch, but it's also pretty cool to create a time lapse video of the curing process showing the bubble release and the tidal patterns the curing process creates.

## Flatten and trim

The time it takes for epoxy to cure can vary from two days to seven days depending on the type of epoxy, volume and environment. Don't rush it at this stage. Once dry, you can remove it from the form. Start by removing the screws and tapping the sides off with a mallet. To remove the bottom, hammer in wedges to start the separation, and finally lift it away from the form. Once the epoxy is cured you can machine it just as you would solid wood. This gives you options to sand it flat with a hand sander, plane it flat using a power planer, surface with a router sled or CNC, or go straight through your drum or wide belt sander. Once I have the piece surfaced flat I trim it to size at the table saw or track saw. At this point you can apply your edge treatment if you would like.



**Ease the Edges** – Like wood, an accurately machined corner can be sharp. Ease them with abrasive paper to ensure a nice feel and safe usage.

## Sanding and finishing

Sanding is done just as you would with a solid wood top, how high of a grit to sand to will be determined with the type of finish used. With a Rubio Monocoat oil finish I sand through to 220 grit, Osmo oil 320 grit, Odies oil 400+ grit. If you are into spray finishing then a 220 grit sand and your typical spraying process will work great. While going through the process you'll come across spots that you'll need to touch up. This can be done with a 5 or 20 minute epoxy, but remember if an epoxy is cured you need to rough up the surface for a good bond. CA glue is also an option because it is so viscous it can flow into spots that are hard to get epoxy into.

At this point your table top is complete, and you can turn your attention to the base. An approach like this can also be used for a kitchen counter top. Use your imagination when it comes to selecting and matching the two live edges and you will be rewarded with an aesthetically pleasing table top that will wow everyone who lays eyes on it.

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Paul is the proud owner of Canadian Woodworks & Legacy Lumber. He creates lumber and furniture from urban salvaged trees and educates students from around the world in person or online.



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