

# Make a Corian worktop



Mark Ryan replaces his boat's faded and delaminated Formica worktop with a Corian solid surface galley worktop – and demonstrates herein how he went about constructing it



**I**n the 1960s and 1970s, boatbuilders loved the modern, robust material that was Formica-type plastic laminates, promising many years of impermeable service in a kaleidoscope of colours and styles. The Swedish builders of my cracking 1970s Albin Ballad, *Triola*, probably thought just that – and, frankly, they weren't wrong. Here we were, some 45 years on from *Triola*'s birth, and she still had her original galley worktop.

The many years of faithful service had started to take their toll though, with the 1970s

woodgrain effect having faded greatly and the edges showing signs of delamination. The final nail in the metaphorical Formica coffin was the first mate (and ship's cook) Elizabeth's requirement to turn the locker under the work surface into a fridge. I removed the sorry-looking remnants of the work surface and sucked my teeth at the sight. To reface some marine plywood would have seemed like the most obvious direct replacement: however, I recalled that my late father, who (as I have banged on about many times before) was a shipwright and craftsman of many years' experience, had replaced

the galley worktop in his 1930s gaff cutter *Wanda* with Corian.

The best way to think about Corian and this style of solid surface countertop (that the Formica company now also manufactures, incidentally), if you have not experienced it before, is as a synthetic granite: very hard, brittle and cold to the touch. It is used extensively in high-end kitchens and, brace yourself, in caravans too. It's extremely hard wearing, and even if it gets a scratch or gouge you can just sand and polish it right out.

How hard can it be, I bullishly thought to myself? I set about getting some quotes from

suppliers and just about fell off my chair with prices for the raw sheet material ranging, for the small part I needed, from £300 to £600. At this point I nearly retreated from the idea and went back to pricing up laminate-faced plywood from my good friends at Robbins Timber: however, I found that they would only sell it by the full sheet bonded to 'high-quality' WBP plywood – the very fact they have to state its 'high quality' should tell you all you need to know – and this also came in expensive, at around £200.

It was at this low point, via eBay, that I discovered Peter ([www.thekorianman.co.uk](http://www.thekorianman.co.uk)), who has a

## Tools and materials required

**I** am lucky that I have my father's formidable armoury of tools, some of which are eye-wateringly expensive to buy new. Don't be put off by this as all these tools can be hired. (Alternatively, a trip to Axminster Tools & Machinery with a credit card and some enthusiasm is a rapid, but enjoyable, road to penury.) A warning before we go any further: with all of these tools you can very easily and neatly lop off all sorts of exciting appendages, so

if you are not sure how to use a tool, then refer to the manufacturer, read their documentation, or do what I did and spend much time looking over the many guides online to these tools (none of which, of course, are a substitute for experience).

- A jigsaw – Mine is a Makita.
- Jigsaw blades – Get the correct blades, Bosch sell carbide-tipped T30CHM blades designed for the job of cutting these very hard

synthetic materials.

- A circular plunge saw with guide rail – mine is a Festool TS 55R with a 1,400mm guide rail. This is the most expensive piece of kit for the job and is not strictly speaking necessary: it will make very neat, quick and safe straight lines in your worktop, though.
- A router – I have a Makita router, and this is a must for the job.
- A carbide-tipped flush trim router cutter with top bearing – The top bearing will allow the



A flush trim router bit



A rounding over router bit

router to follow the template of our old worktop.

- A carbide-tipped rounding over router bit with bottom bearing – to round off the edges



stock of offcuts of various synthetic solid surface worktops from different manufacturers in his lock-up in Dartford. After a quick trip over to him, a cup of tea and a pleasant natter about how to machine the stuff ('just like working with hardwood,' he had mused), £40 changed hands and we were ready to go.

of our sink opening.

■ A mitre saw (so as to create 45° angles easily) is beneficial if, like me, you need to create a flange. I have a monster of a Bosch my father left me. If one piece of kit frightens me just a little bit, it's that – not to mention that it draws so much current that one time in 10, when it starts up, it trips the whole garage out, plunging me into darkness.

- Clamps and trestles.
- Masking tape.
- Double-sided tape.
- WEST SYSTEM epoxy, Colloidal Silica (406) with pigment or Corian glue.

### Measure thrice, cut once

Time to put our terrifying array of finger choppers to work! As we are replacing what was already there, we have a ready-made template – don't be lulled into a false sense of security by this, though. Remove all nails, screws, fiddles and fittings from the old

■ Polyester release film (which can be supplied from East Coast Fibreglass Supplies).

■ PPE – As always, loads and loads of PPE. Get a respirator, not one of those disposable masks: a respirator will give better fit and is only a few pounds more. You'll also want eye protection that is breathable and won't fog up (or else you will end up throwing them in the bin and you won't use them).

Ear protection is a must as these machines are seriously loud, and remember to wear thick gloves. Corian, when cut or broken (we'll come to that later!) is razor sharp.

worktop, then go around it and seek out any rot, soft spots or blemishes: fill them in or fair them back to stop the blemish in our template from becoming a blemish in the finished article. Spending plenty of time at this stage will save significant frustration and expense later down the line.

Once you are satisfied the old worktop is in a good enough state to be used as a template, put

some of your double-sided tape on the bottom of it and stick it to the top side of your solid sheet worktop: it may not be immediately noticeable, but the material does have a correct 'top' side and 'bottom' side – the top side usually being better finished. Draw around your template, and then remove the template by gently levering it off the solid sheet material with a screwdriver wrapped in some rags.



Draw around the template



**Securely clamp the solid surface material down, protecting it with offcuts of softwood, and carefully start cutting with your new jigsaw bit**



**Be very wary of the 'kerf': this is the width of the blade**

You are left with an outline of the template that needs to be cut out. No one has a steady enough hand to cut this out freehand with a jigsaw, so what we need to do next is to cut 2 or 3mm away from the line: we'll get the exact shape when we get to the next stage with the router. Securely clamp the solid surface material down, making sure you protect it with offcuts of softwood, and carefully start cutting with your new jigsaw bit. Ensure that you don't let your blade heat up too much, or else it will (a) blunt very quickly and (b)

start melting the material as opposed to cutting it.

If you have any long, straight edges to your work, you can consider using your circular plunge saw with its guide rails if you have one. Be very wary of the 'kerf': this is the width of the blade (in my case it was around 2mm). If you always have the track on the workpiece and have the waste on the outside of the track, you never need worry about the kerf.

### **Route to happiness**

Now you have the rough shape of your work surface cut out, it's time to reattach your template to the Corian, taking care to line it up with the pencil marks still visible. For this stage, use plenty of double-sided tape – it makes it a bit of a devil to get the template back off, but better than your template (which, for our purposes now, has become a jig) moving while you are cutting.

Fit the flush cut router bit with the top bearing into your router,

making sure you do up the chuck tightly: you don't want the router bit flying out at high speed embedding itself in the wall or worse! Set the depth of the router so that the bearing sits neatly on your template, and start cutting.

When using the router, it's important to always go from left to right, moving against the rotation of the router and giving you full control of the tool. If you move from right to left, you will fight to keep control of the router. In practice, if you are routing on the outside (as we are in this instance), this means travelling anti-clockwise around the piece. If we were cutting on the inside of a jig (as we will later on), this means travelling clockwise around the template. Make sure you keep the router completely flat to your template the whole time, or else you will create an uneven edge.

### **A messy old job**

Beware! This is a messy old job, and as soon as you rout the material you will statically charge the waste, whereupon it will stick to your person and refuse to budge, no matter how much dancing about or desperate attempts to brush it off you make. I did make the serious marital mistake of re-entering the house at this point and tramping through the living room, leaving a festive trail of white statically-charged waste in my wake...

Once you have gently prised your template from your work surface again, stand back and admire your new shiny worktop. You may be lulled into a false sense of security at this point and imagine that hardest part is done – but little do you know the horrors that may await you...



**It's time to reattach your template in order to start routing the edge**



**Make sure you keep the router completely flat to your template the whole time, or else you will create an uneven edge**

## **Cut-out for**

One of the features my father had added to Wanda's new worktop was that he had under-mounted the sink to show off the beautiful Corian material. The original cut-out for the sink in my old worktop was pretty crudely cut – its top-mounted flange meant it didn't need to be precise – so I made myself a jig out of MDF offcuts. First, I cut a plug that I could put on top of the sink and trimmed that down until it would just sink down into the basin, then I used that as a template to create an inverted jig that could be used to accurately rout the solid surface material.

Using your double-sided tape, lightly stick the inverted jig to the Corian where you want your cut-out to be: make sure that where you will be fitting the worktop there is space underneath it where you plan to place the sink! Draw around the jig, and remove it. Use a small cobalt drill bit to drill around 3 or 4mm inside the waste, giving your jigsaw a place to start, and start cutting around 3 to 4mm inside the line you have drawn. As we did on the outside of the work



**Now we have a very smart, very sharp hole cut in our lovely new worktop**

## the under-mount sink



**Note the lip between the jig and the work surface**

surface, we shall use the router to trim precisely to the line.

Now you have roughly cut out your sink opening, stick your jig back down again, taking care to position it in the same place as before.

Once again, take out your router and its flush-cutting router bit with the bearing on the top and, this time travelling clockwise (from left to right), trim off the remaining waste. Now we have a very smart, very sharp hole cut in our lovely new worktop.

Next, it's time to



employ our round-off router bit with its bottom bearing to make a beautifully rounded, smooth edge to our sink opening. As with the flush-cutting bit, travel from left to right (clockwise around the opening) to maintain proper control of the tool, making sure you keep the router flat to the workpiece. Before you go to town on your new worktop, be sure to practise on scraps of waste wood and offcuts from your new worktop: this will also help you find the optimum cutting height for your bit to get the smoothest round-off for your edge. Once you have finished routing, you will be left with a beautifully rounded-off edge for your sink to sit under.



## Cut out the fridge lid



**Enter stage right the awesome (if mildly terrifying) Festool circular plunge saw with its guide rail**

**W**hen I made the sink cut-out I didn't need to use the 'waste' part of the material, meaning I could drill it and cut it out with my jigsaw and then discard the inner cut-out. With my fridge opening, I didn't have enough sheet material left over to remake the lid once I had made the aperture in the worktop, meaning I had to cut the lid out precisely from the worktop with no drilling or routing. Enter stage right the awesome (if mildly terrifying) Festool circular plunge saw with its guide rail.

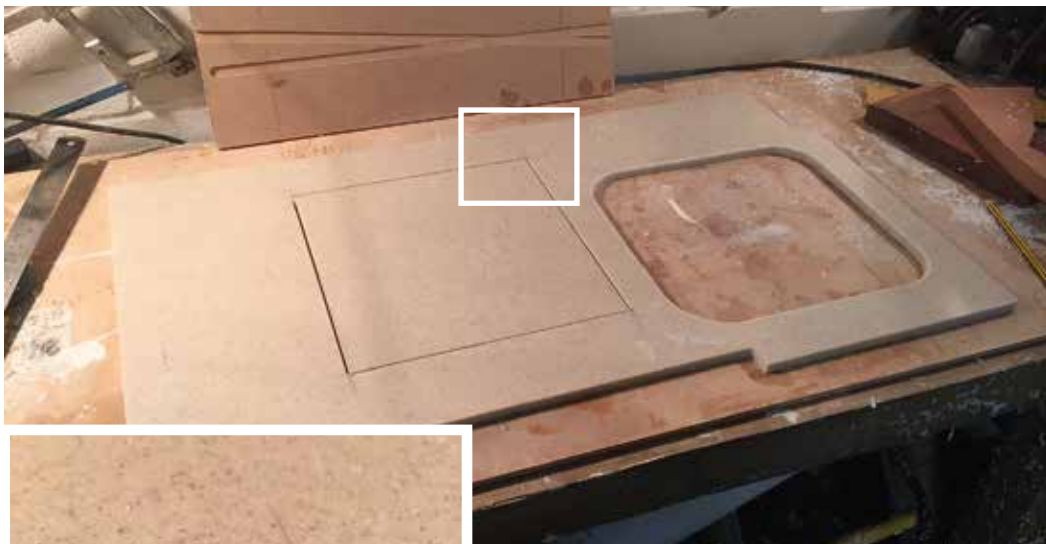
I carefully measured out the lid from my fridge box and transferred that onto the work surface. At this stage, it's a good idea to take the worktop down to the boat to offer it up and make sure that all the cut-outs line up properly with what they are

supposed to: in my case, I had to move the fridge lid over 4 or 5cm towards the sink.

I added another 3cm to the cut-out all around to oversize the lid in the Corian, as we'll make a flange later on which our fridge lid will sit upon. Make sure your workpiece is clamped securely down, line up the track carefully with your marked line and clamp that down as well. Ensure there is nothing under the workpiece you are going to end up cutting also! Additionally, wear all your PPE, especially ear protection and eye protection. The track has stoppers on it to allow you to pre-configure the length of the cut: use these to your advantage, taking into consideration that due to the shape of the blade you will not be able to cut all the way into the corners of your cut-out.



**Ensure there is nothing under the workpiece you may end up cutting also!**



**At this stage we revert to our trusty jigsaw to very carefully nib out the corners on the outside of the cut-out**

Holding the saw firmly (making sure no appendages, tools, crew or the ship's hound are underneath the workpiece), get the blade up to full speed and plunge the blade gently into the work surface, following your predefined route, for the predefined length. What could possibly go wrong?

Repeat this on the four sides of your fridge lid. As you can't go quite to the edges, you will be left with your lid cut out, but clinging on for dear life by its corners.

At this stage we revert to our trusty jigsaw to very carefully nib out the corners on the outside of the cut-out (the kerf of your circular saw blade is likely to be greater than the kerf of your jigsaw blade). This requires some real precision as it would be very



**You will be left with some curious little triangles in the corners of your fridge lid**



easy now to cut too far and make a right mess of your work up to this point, so tread carefully, go slowly and make sure the lid and the worktop are supported at all times – never forget how brittle this stuff can be.

You will be left with some curious little triangles in the corners of your fridge lid. You could sand these off with a belt sander or block: or, as we have our flush trim router bit, we can trim the edges flush safely and easily.

Line up a straight edge with the edge of your lid and clamp down your lid and the straight edge firmly. Ensure the depth of your router is correct, and then run your router along the straight edge to remove the remaining nibs.

**Create a flange for your lid**

Now you've created all the cut-outs, you may be thinking the complicated part is done. However, we still need to create a lip for our fridge lid to sit on: a flange. We made the 'hole' in our worktop around 3cm bigger than it needed to be right the way

again, I set about with my flush trim router, this time not using the top bearing, to rout a channel 2mm in to my 6cm strip. In hindsight, 2mm was not far enough into the Corian and left the outside too weak. We have since had some breakages here, and I will likely remove that outer lip entirely.

Carefully measure the lengths you will need, remembering that their centreline must match up precisely to your fridge lid cut-out. Use your mitre saw here to precisely cut out the 45° mitres, once again ensuring you wear all the correct PPE and have the workpiece clamped into place.

If you've done your work correctly you'll end up with lovely, mitred joints, ready to be glued to your worktop. The surface on the underside of your material should already be prepped for gluing: however, do give it a wipe with acetone and then sand it with 80-grit paper to get it ready. Also wipe the top of your new flange pieces with acetone, and rough up with 80-grit the 3cm on the outside of this section to get this ready for gluing.

**The gluing process**

Corian and all the other manufacturers of this solid surface stuff supply their own glue for this sort of thing: however, having stocks of my much-loved and trusted West System epoxy, I chose to use this, thickened with colloidal silica and some white pigment instead.

Make sure you clean up any epoxy that has oozed out at this stage. Later on, once it has set, it is possible to remove it, but only mechanically; and you'll be kicking yourself for not doing a more thorough job before it had set. For the gluing process, I put the whole worktop onto polyester release film, which would prevent the worktop from gluing itself to my workbench and becoming a permanent addition to my Batcave! I created and glued a little fiddle onto the front of the

around its circumference, so we need to create a flange of 3cm and have enough of a surface to glue onto the bottom of our work surface – so create lengths of 6cm wide, long enough to go around your fridge lid cut-out. This sort of precision cutting of straight lines is what the Festool circular saw is good at, although it does get complicated clamping these small pieces effectively:

**don't ever try to use this saw without all elements securely clamped down.**

I had been talking with Seals Direct about how I could seal the lid, and I settled for a rectangle extrusion of closed cell foam to be mounted in the flange. Once



**A channel has been routed in the flange**



Lining up the flange with the worktop



The seal goes in

work surface, using the same cutting and routing method we had used to create our flange.

Finally, once the epoxy has gone off, you can cut and add your seal, and your flange is complete.

### Adding a handle to our fridge lid

Now we have a neatly-fitting lid to our fridge and a flange for it to sit upon, we need some method of opening the lid. I purchased a flush-mounted ring pull from our friends at ASAP Supplies and started considering how I was going to make a hole in my fridge lid to house the new ring pull.

I drew a line from corner to corner to find the centre point,

and then used a compass (as in the drawing tool, not the thing you use to avoid bumping into rocks) to mark out the circumference of where our hole needed to be.

At this point I was a little stumped. I knew I had to plunge-rout this hole: however, up until this point I hadn't relied on a steady hand, I had relied on jigs and tracking the edge of the workpiece. I tried to come up with some sort of circular jig that would stop me screwing up, and then quickly abandoned that with the view that it would have to be death or glory. Very carefully, and very slowly, setting my plunge depth very shallow at first, I started routing out where my ring pull would be mounted by eye to my markings. The other side of the lid would have insulation and the top of the fridge box attached, so it didn't matter that I needed to rout all the way through at the middle of the ring pull.

All that remained to be done was to drill some pilot holes for the screws, splatter some of our much loved Sikaflex around and then finally screw our ring pull down.



The flush-mounted ring pull as fitted

## Finishing touches

Now all the hard bits really were done, all that remained was to under-mount the sink and affix the hardware. To attach the sink I used Sikaflex alone, which many (more sage and wise people than myself) advise against as there are under-mounting fastenings you can purchase for this job. In my scenario, however, with the sink supported by a pretty hefty waste pipe also, I was satisfied that the Sikaflex would do the job admirably.



Two holes were drilled incrementally bigger for the new wizard tap I had been sent by mistake from Marine Megastore (I had ordered a simple faucet) to trick visitors that I had pressurised hot water on board: that's yet another project in the wings...



Finally, I drilled and countersunk the holes that would affix the worktop down, and created a little cut-out for the wires for the new fridge controls. Another job done, and with any luck one that will truly last forever this time round!

## Disasters along the way

Reading the above, it might appear as though I had a trouble-free sail through this project: but the truth was anything but that. My first attempt had the sink cut-out too far over to port and the fridge cut-out too far over to starboard. Not only that, but when I was working on another project in the garage I leaned the 'in progress' worktop against the wall: my coat caught one of the trestles and brought it down straight onto the weak point of my new worktop, splitting it in half!!

This is not a forgiving material to work with: however, it is very rewarding and surprisingly easy. If you can get the sheet materials for the right price, it can be a cost-effective way to make your galley look very smart indeed.