

Hi all,

(takes a deep breath as this is going to be long)...

Well I made a pen from this stuff, but it was originally made by me with the purposes of using it for a knife handle. I have since moved away from full tang knives and so I had some of this lying around and it made a very nice looking pen.

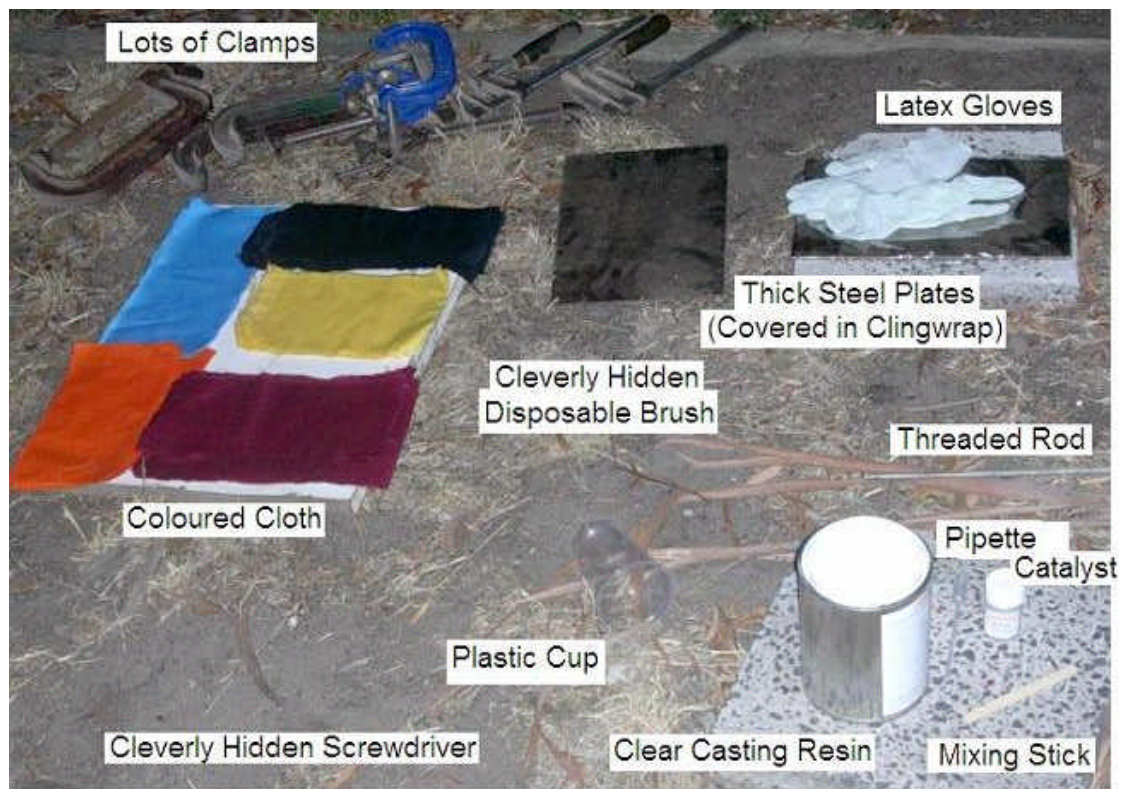
This material feels nice, takes a nice shine, is super tough and can be made to basically whatever size/shape/dimension you want (although trimming will be necessary).

Warning: it is VERY hard. Be prepared to sharpen any tool you might want to use - often.

Now I will show you an attempt I made a while ago - although my latest material was made slightly differently.

OK. So, how to make it...

First off get the stuff together as seen below. Notice that I didn't forget to get the screwdriver or paintbrush they are just "cleverly hidden".



When choosing the cloth, remember that it will look permanently wet, so they will be a lot darker than they appear dry. You will also need to have ripped the cloth into rectangles about the same size as your metal plates. This takes a LONG time, do it in front of TV. Also, take the time to calculate how much you will need it is very surprising. Think several square metres... My blanks are about 60 pieces of cotton thick which makes it approx. 12-15mm. I wouldn't use anything other than cotton or linen (basically natural materials) as I don't think that I would trust proper bonding with synthetic materials. Also, I know that some people have used things like soaked paper which apparently looks quite nice.

Now, the metal plates, they should be strong enough that they don't bend under a LOT of force - or at least don't bend much. Mine are grip plate about 5-8mm thick. They will stick to your resin if you don't cover them in sandwich wrap. (Note: If using sandwich wrap, there should be no reason you can't use wooden plates or anything flat and stiff).

The clamps are to jam the whole thing together at the end, but it is best to have them handy.

Put on the gloves as the plastic lives a life of its own - regardless of how careful you are, it will get on your hands and won't come off.

The other stuff is all for the resin. Use the screwdriver to open the tin and fill a 200ml disposable cup with the clear casting resin. Add 2-3ml of catalyst (using the pipette) and stir with the stick. Pretty tough so far huh?

Now using the disposable brush (as this REALLY destroys brushes) that you have on hand; just like mine .

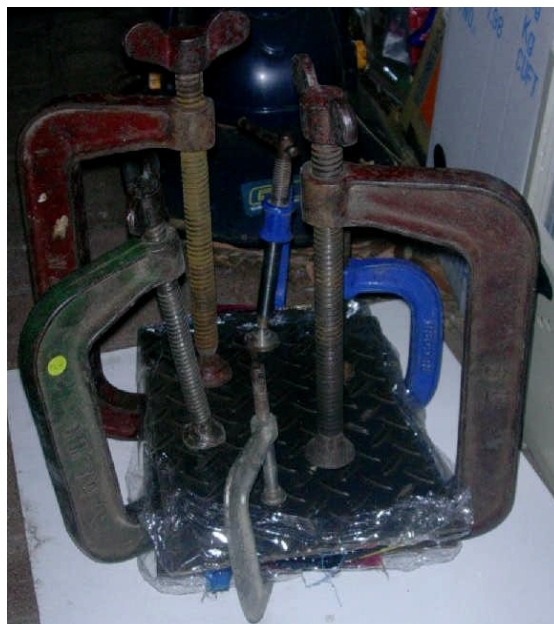
Now get a piece of the cloth and paint on resin until it is ENTIRELY soaked. Wet isn't enough, soaked... Then get the next and the next and keep on painting on the resin making sure that every layer is soaked. This will use more resin that you expect - don't be shy, better to use too much than too little.

I have found that you can put down two pieces at once and still wet them enough to soak through. I will leave you to decide how to stack you cloth. At this stage you may also want to think about shape in your stack. If you fold over some bits of cloth and wrinkle them up, the result is likely to be more interesting... My first trial used the grip plate with the grip side in, but this meant that there were some gaps in cloth (which were filled with clear resin). This may be fine, it may not. Just think about it. I know some people who put a piece of wire on the top to get that extra pattern in their work, but I think this runs the same risk as the grip plate patterns.

I meant to take photos of this, but it is pretty important to keep things rolling and it was getting pitch black outside (and this can stink a bit and if you do it in your shed, don't plan on going in there for a week or so).

Thus, no piccies... sorry. If you have any questions, please feel free to PM me (CameronPotter).

Now, 60-70 pieces of cloth and about three cups of resin later...



You put the other bit of steel on the top and crush it down with the clamps. Try to do this as evenly as possible, as hard as possible and if you have soaked the material properly, it should spew resin out the sides - so do it over something that you don't care about.

After 24 hours or so, depending on temperature, amount of catalyst and your patience levels you can take the clamps off.

The result will be a heavy block of pseudomicarta (Micarta is a tradename you see). This will need quite a lot of the edge trimmed off, but should be an interesting addition to your repertoire. Remember, if you cut through it you will expose lower layers making for an interesting pattern. Remember that there is no need to be gaudy with this either, you can use dark/dull colours too, but as I said, remember, dark colours will be even darker as they are effectively "wet".

The result might look something like the colourful one here:



#### SOME FAQs TO THIS STAGE:

**Q:** *I know you say it takes about 24 hours for it to go off (depending on temp., resin mix etc...) but how long is the actual resin workable? An hour or two? Let's say I've saturated and stacked my 60 layers and want to add some artistic creases, is this something I'd have leisure to arrange or would I have to clamp up ASAP?*

**A:** The workable time varies a lot depending on heat and amount of catalyst used. I have had it get thick and gluggy (unable to be spread) within about a half an hour, but in the cool with little catalyst it can be workable for a few hours.

The sooner you clamp the better - as that way the resin will still be at its moistest stage and you can really force those air bubbles out by crushing the cloth down as hard as possible. However, there would be some time to play around if you wish, just my advice would be do it quickly and set up the clamp as quick as you can.

**Q:** *When casting foreign objects (eg. spiders, coins) in clear resin I've had to coat 'em with something'r'other first to avoid air-bubbles. Is this a problem with layering cloth?*

**A:** As for casting foreign objects, that is because the other thing may have a tendency to trap air bubbles beside it - this is avoided in two ways.

1. The cloth isn't just embedded - it is soaked, so there is no room for air bubbles. Last I looked it was hard to soak a beetle or a coin.
2. The crushing force should push all air bubbles out later. This really should be about as hard as you can get it. I know people who use 12 tonne presses to do this. I don't know what tonnage I can get with a clamp, but I would guess that I am not too far off that number...

**Q:** *How do I know when it is ready?*

**A:** Better to be safe than sorry. Leave it for as long as you can bear - up to about a week so long as it is not FREEZING cold. Oh also, the outside may remain a little sticky, that doesn't matter so much. It is the inside that really matters and as the resin "goes off" with heat, the inside will set much earlier than the outside. If the stickiness concerns you, you can wipe it off gently with acetone.

**Q:** *What can this be worked with?*

**A:** This can be cut using any wood working tools, but I have bent saw teeth with it and so now I mainly use metal work tools on it - except for turning tools of course. For instance, a metal cutting blade in a bandsaw and hacksaws and drills on SLOW speeds and files (that you no longer care about). You can also use disc sanders etc, but be VERY careful not to overheat it.

BACK TO THE STORY...

As this was being done to write up (a while ago) I got impatient and pulled the mould apart early. It failed.

There are two possibilities as to what went wrong (and I think they both went wrong); but I will get to that later.

The block split when I tried to cut it - I fixed that by supporting the back of the pseudomicarta.

The block split when trying to drill it - I fixed that by drilling it in larger block before trimming it down.

The block split on the lathe... I gave up on this block...

I investigated why I had splitting. I noticed that it either happened towards the outside of the block, which meant that it was too cold – serves me right for doing late at night in Tasmania (southern-most state of Australia). I should have either started early in the morning or set up a heatbox or left it for a LOT longer (I only left it 24 hours should have left it for a week or so). Out of interest, I have the stuff I need to build a good heatbox (thermostat controlled), but haven't got around to building it...

The other reason that it split was that as I was doing this late at night and rushing, I didn't listen to my own advice and on ONE layer I didn't soak the cloth enough. This was where it split when I was drilling and turning. There isn't a lot that can be done to fix this.

Now I have a lot of little parts that I will use for laminations but little else.

Oh well.

Anyway, this is what it looks like coming out of the mould...



## SETUP NUMBER 2:

OK! So after leaving this one for about a week (and leaving it in the sun too when I got a chance) - although I wouldn't do this in a hotter place... the result - MUCH better adhesion.

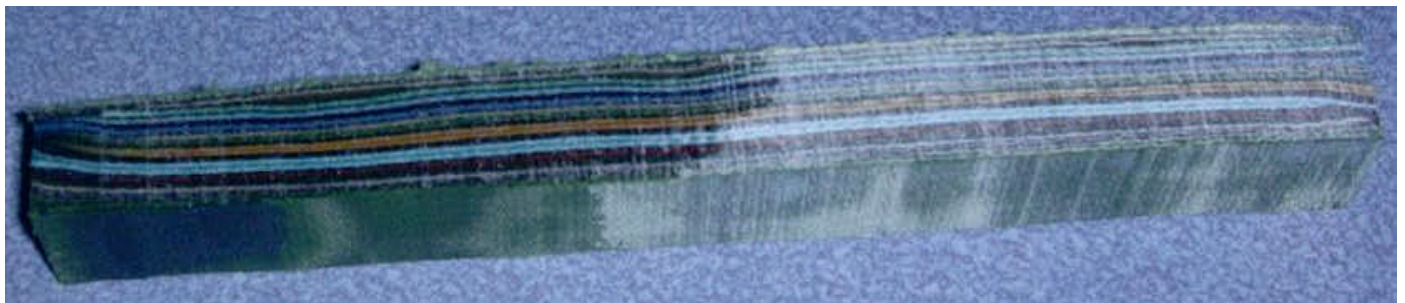
I can tell by feel that this is a much better set of blanks. Out of interest, I also used a different technique for soaking the cloth - I actually dipped them in the resin and smoothed it down. This worked really well and was also a lot faster.

NOTE: if you are planning on doing this, remember that you need more resin than you might think. The resin fills the gaps in the cloth and for cloth - there are a LOT of gaps (and in fact the cloth itself soaks up resin), so you probably end up using about as much resin as the block itself would take up...

I also tried a few other things. I tried normal polyester resin (not the clear casting) and it worked really well - the colour was slightly blue but only very slightly and I really don't think it is noticeable. This resin is also about half the price of clear casting. Yay!

A ALSO tried new material... This was the slightly furry inside material (still pure cotton). Kind of like track pants material. It worked really well and each piece of this was worth a few pieces of thin cotton cloth.

This is what the sawn blank looks like.

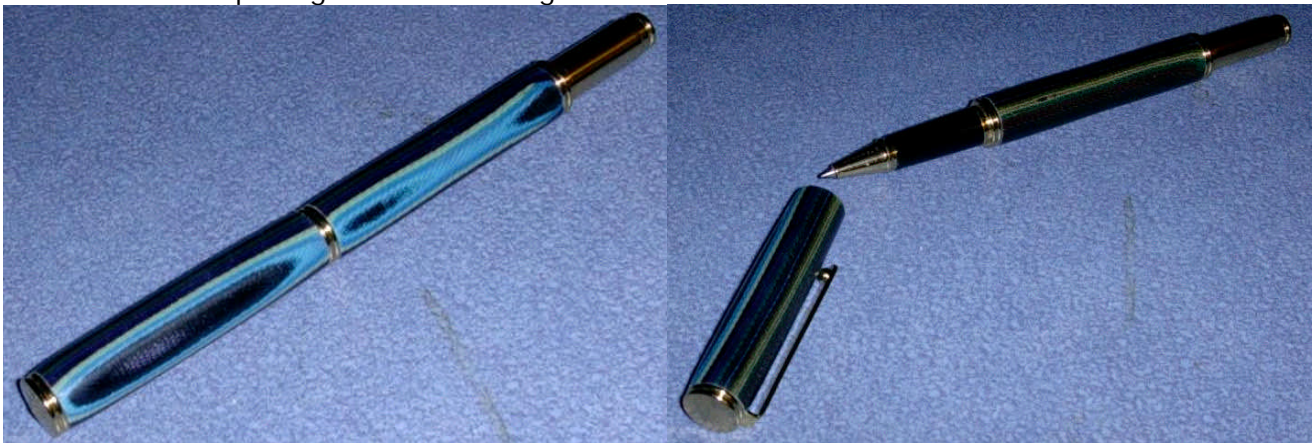


Well finally, here is the proof from the pudding...

These two shots show one new pen at two angles.



And here is another pen again from two angles.



Can I just say again - remember those super sharp scissors that your (insert dressmaker/tailor's name from home) won't let you use. Well, that is because you need sharp tools to cut material, you need sharper tools to cut this!!

Anyway, these pens were finished with wet and dry (used wet) sanding up to 2000, followed by U-Beaut's EEE (of course) and that is all that is required - basically this has a sheen like plastic but feels a bit nicer, well I think so at least. :o)

Thanks for reading and good luck with it!

Cam