

Pens from Pencils



This is a variant on something many people will have tried - bonding coloured wooden pencils within dyed polyester resin and turning the result. This can be fun for small objects and bowls like the one in the background here:-



But a neat idea is to use pencils in resin as a starter for pens (& one pencil!). Because the rollerball pen kit here uses a single 8 mm brass tube - the same diameter as the wooden pencils - it is very simple to make a cluster with the brass tube at the centre and six pencils clustered around (the pencil kit uses a larger 11 mm tube and 7 pencils). This is held together initially with masking tape and/or cable ties and potted in resin within a convenient tube. I used polythene water pipe with 25mm internal diameter, sealed at the far end with polythene sheet and more masking tape.:-



The pipe is sacrificial - although the polyester indeed does not stick to it it is in practice not possible to slide it off without cutting the tube along its length (I used a surform to do this), and even then it requires care.



The resin rod is then sawn and sanded to expose the ends of the brass tubes - a pencil is twice as long as the pen tube so I made pairs. The ends of the brass tubes and the joint between them are sealed with a single layer of masking tape, some of which is left in the structure.



A few practical notes:-

- Firstly the resin takes a long time to set hard enough to machine safely - although it sets in the sense of not being liquid quite quickly it takes several days (up to a week) to be fully hard and not smelly.
- Even then machining this uneven-hardness composite requires care - the pencil 'leads' are soft and can melt under sanding and the resin is not good as 'glue' - pieces of pencil/lead/resin can pull out. Use very sharp tools, cut slowly and be prepared sometimes to glue pieces back in! (with normal PVA glue) Polyester can also crack if cut too quickly.
- Sanding also requires care - not too fast or hot to avoid pencil lead material spreading. I used a superglue acrylic finish which seems fine - some finishes might dissolve the 'leads'.
- I sanded the pencils before assembly to roughen the painted finish - which may help.
- I used a dye in the polyester (dyes came with the kit). It looks black in the finished pens but this is because you are looking into a dark hole between pencils - actually blue in these examples but this may not be important.
- The bundle of pencils will float in the resin. I half-filled the plastic tube first then slid in the pencil/tube bundle quite gently to allow the resin to flow up between the pencils, holding the bundle down either with a small piece of wood jammed at the top or by jamming the bundle with a cable tie. Check before using resin! Pencils point-down allow more resin flow.
- The tube-plus-set resin cuts quite easily with a saw to divide the two sets or remove excess. The thin brass tube in the middle cuts likewise - it may get slightly shorter but this is OK with this kit.
- I have also used paper drinking straws instead of pencils - this works but is not quite so satisfactory!

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