

Protocol for Replicating Wood Surfaces

Material:

1. I used a piece of old (therefore well seasoned) constructional softwood - species unknown, but probably either larch or spruce. Because it had been stored indoors it was absolutely dry and in good condition.
2. Cellulose acetate replicating tape, precise thickness unknown, but in the order of $\sim 25\mu\text{m}$, supplied by Ernest F. Fullam Inc. (Agar Scientific also supply it.) Replicating tape has the advantage over nail varnish that it can be used on fairly porous surfaces (like wood).

Method:

1. Create a fresh fracture face by splitting the wood longitudinally across the grain with a sharp chopper.
 2. Choose a suitable, small area (guesswork), and paint it with acetone, using an artist's brush. *Quickly* (before the acetone has time to evaporate)* apply a small piece of replicating tape and press it firmly onto the surface with a hard blunt object - *NOT* your finger (I used the handle of the artist's brush).
 3. Leave it until the acetone has evaporated (5 - 10 mins.) then peel the tape off the wood with very fine forceps ('Dumont' brand E.M. forceps are ideal). Mount on a slide in an aqueous medium (I used 50% glycerol) - *NOT* a solvent based medium, for obvious reasons. Make sure the mountant is underneath the replica as well as on top of it, and use a large cover slip to spread the mountant and press out any bubbles.
 4. Examine using either DIC (Nomarski), Hoffman, Rheinberg, phase contrast or dark ground.
- * **NB.** Judging the right amount of acetone is probably the most difficult part: too little and the tape doesn't bind to the surface; too much and the tape turns into a useless goeey blob. The technique is tricky - be prepared for some failures. When this method works, it works very well; when it doesn't work, it just infuriates.

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