HOW TO MAKE PURFLING

KAI-THOMAS ROTH describes the process of creating narrow purfling strips from scratch

Purfling can be a subtle mark of individuality in a violin maker's work. It might be easier to obtain commercially available fibre or wood purfling, but preparing one's own adds more deliberation and control to the complex process of making an instrument.

Historically, the materials used in this inlay have varied widely: whalebone and ivory, as well as ebony, boxwood and almost any other hardwood have all been employed. In fact, the material used can often help to identify a school of making or even an individual maker.

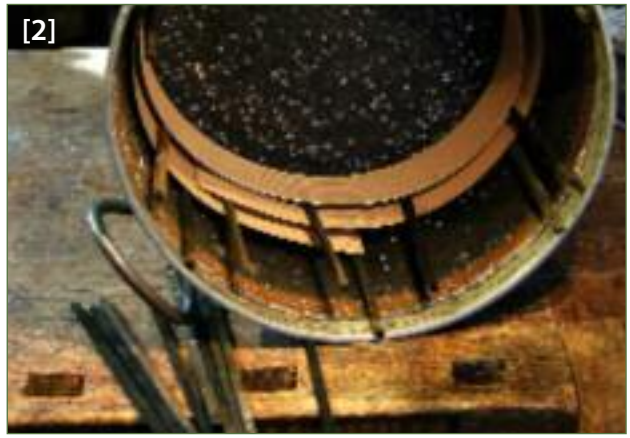
In my own purfling, I like to vary the materials that I use. The inner 'white' stripe is usually made of sycamore, beech or pear, the first being the brightest in colour and the last slightly pink. Willow and poplar are also useful and have good historical precedents. For the black stripe I choose a non-porous hardwood that has an even growth structure so that it does not warp or buckle too much when wet.

I prefer to make a flat 'sandwich' of purfling from which I cut narrow strips. The black outer parts are dyed with natural materials using a centuries-old process, and the inner, light-coloured layer is left its natural colour. For standard violin, viola or cello purfling, I obtain the usual 0.6mm veneer available from specialist suppliers. Veneer that is sawn or planed on the quarter is best in terms of stability when being glued, but peeled slab veneer also works.

STEPS 1–2

ALL PHOTOS KAI-THOMAS ROTH

The materials used in the process of dying the veneers



The veneers, separated by distancers, are curled in a large saucepan for dying

[1] & [2] First I choose three pieces of veneer of the same dimensions – usually 12–15cm wide and 60–80cm long – that fit well on top of each other.

Now the outer layers need to be dyed. I curl the veneers up in a large saucepan so that they touch neither the side of the pan nor each other. For this I use plenty of distancers – little lengths of wood with a square profile, which I wedge at intervals between the side of the pan and the layers of veneer. The spiral tension of the veneer holds them in place.

The wood must be cleaned of all fatty impurities and oils so that it takes the dye evenly. For this I cover it well with water to which I add a tablespoon of sodium hydroxide. I bring this mixture to the boil and then simmer it for one hour. After that, thorough rinsing is required. Caution and care are advised when working with sodium hydroxide, which is highly caustic, hence its household name – caustic soda.

With fresh water and a good handful of logwood (*Haematoxylon campechianum*) chips, I bring it all to the boil again, simmer for another hour and then let it soak for 24 hours, thus achieving a deep purple colour. To fix the colour, to prevent it from 'bleeding' and from turning a deep black colour, after another thorough rinse I reboil the veneer with fresh water and a tablespoon of ferrous sulphate. Again it must simmer for an hour and then soak for 24. After a good final rinse, the coils should be dried between layers of newspaper and boards so that they straighten out.

STEPS 3–6

The 'sandwich' of woods is assembled on a large piece of laminated glass

[3] At this point there are at least three ways to proceed. The veneers can be glued together between pre-shaped formers to give you the rough and unstressed shape of your required strips of purfling. However, each type of instrument needs its own formers and there is a fair amount of waste in this system.

The second option is to glue the single strands of veneer together only when they are joined in the purfling channel. This method gives you maximum flexibility, but it seems overly complicated for a maker of undistressed 'new' instruments.

The flat, glued 'sandwich' method is the one that I prefer. I use a large piece of laminated 10mm glass (100cm x 50cm) – ideally with ground edges to avoid accidents – on which to assemble my sandwich. Up to three sandwiches can fit on this at any one time.

Brushing the first layer of black generously with hide glue

[4] As with any other violin making job requiring glue, I use hide glue here. The first layer of black is generously brushed with glue on one side and stuck to the glass, which has been warmed up evenly with an old-style (non-steam) clothes iron set at about 55–60ºC (or the silk setting). Then the top of this layer is generously covered with glue as well.

Pushing out the excess glue with a veneer hammer

[5] I push out all the excess glue towards the edges of the wood with a veneer hammer, using diagonal movements.

The white inner layer of wood now receives glue on one side and is pressed down in the correct position with the veneer hammer.

The assemblage is warmed with an iron before excess glue is squeezed out

[6] At this point I use the iron to warm the assemblage up to a temperature that reactivates the glue. I make sure that the iron is not too hot, so that it warms up the pack just enough to keep the glue strong without drying things out too quickly. I then use the veneer hammer to squeeze out any excess glue. I repeat the same process with the third layer, iron again and then apply glue to the outer side as well, getting rid of all excess. ▸

STEPS 7–10

The layers are clamped together to ensure even drying

Peeling the sandwich off the glass with a spatula

[7] When all the layers are stuck completely flat to the sheet of glass, I lay absorbent paper over them and clamp a flat plank on top, covering the sandwich completely. In this way I ensure that there is no uneven drying, which might make the corners curl up.

[8] It is still important not to let the sheet of purfling dry out too much, since at that stage it would be impossible to remove it from the glass. On some occasions I have managed to pull small pieces of glass out of the underlying pane, such is the strength of the hide glue. After just a few hours, the sandwich must be carefully peeled off the glass with a spatula. It can now be completely dried between more absorbent paper and flat planks.

Scoring the sandwich with a marking gauge before cutting

The sandwich is cut into strips while it is still fresh and not too brittle

[9] & [10] I prefer to cut the sandwich into strips while it is still fresh and not too brittle because it is easier that way. I set a sharp marking gauge at 2.5 to 3mm, since I find that that depth is sufficient up to the size of a cello.

With the black now still the same thickness as the white, I like to scrape the individually cut strips, thus giving a subtle degree of unevenness in the thickness of the black.

The advantages of the sandwich method are that it allows you to achieve purfling with just the right amount of glue in it, and that the glue remains stable in the bending process, rather than peeling apart on the bending iron. ■

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