

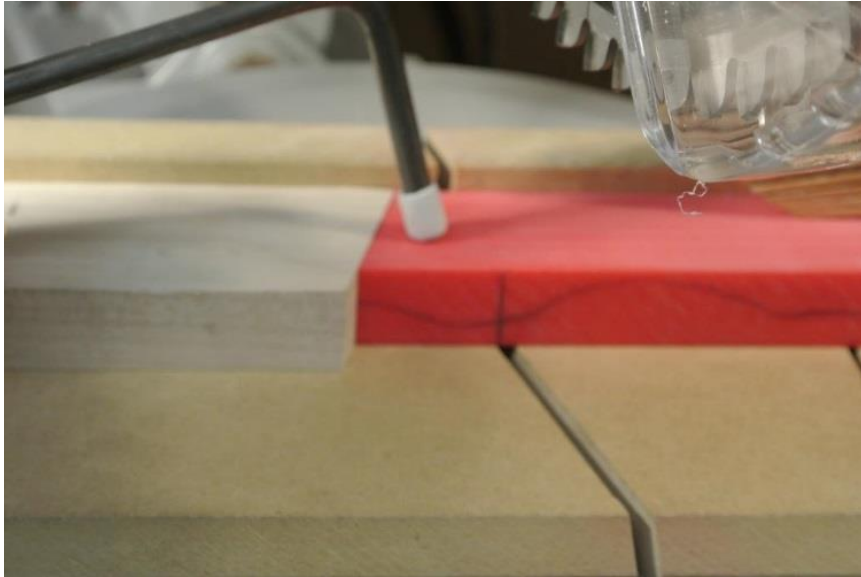
RAW MATERIAL



Cutting Segments

- Cutting segments required some trial and error. This material softens when it gets hot. I cut my segments on a Festool Kapex which has a speed control. I cut at the slowest speed which seemed to minimize the distortion of the surface caused by the heat. I also used the Kapex Aluminum/Plastic blade which has a different tooth configuration. That also seemed to help. If you don't have these items I would try resting between cuts or whatever it takes. I found that with my method I was able to get perfect angles and surfaces.

CUTTING SEGMENTS

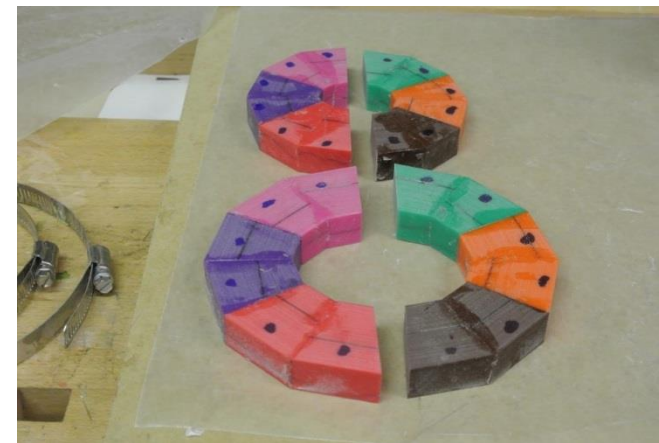


NOTE THE FEATHERBOARD AND HOLD-DOWN. MATERIAL WILL CHIP IF NOT HELD SECURELY

RING ASSEMBLY

- Assembly of the rings was different because of the open time of the adhesive. My final method was to dry fit the ring into a band clamp. I then loosened the clamp and applied glue to one surface of one segment. I did a rub to the mating surface as I re-inserted it into the clamp. I then tightened the clamp for about 60 seconds and proceeded in sequence around the ring. I found it helped to remember my place by marking the segments with a Sharpie as I went around the ring. I left the completed assembly in the clamp for 24 hours for 80% strength bonding. Even though the rings were perfect when dry fit, I chose to make half rings. The material moves while gluing and is hard to keep round.

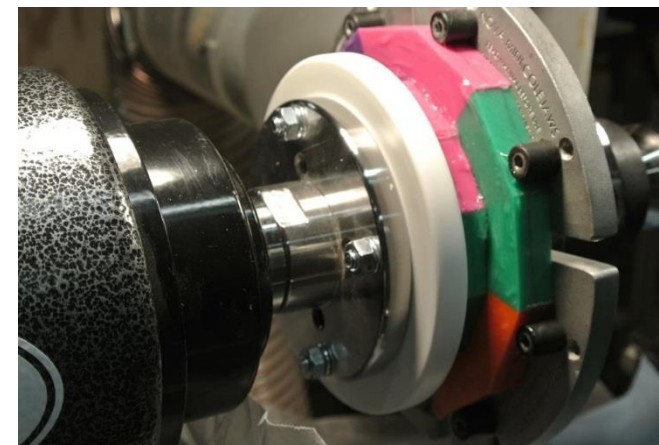
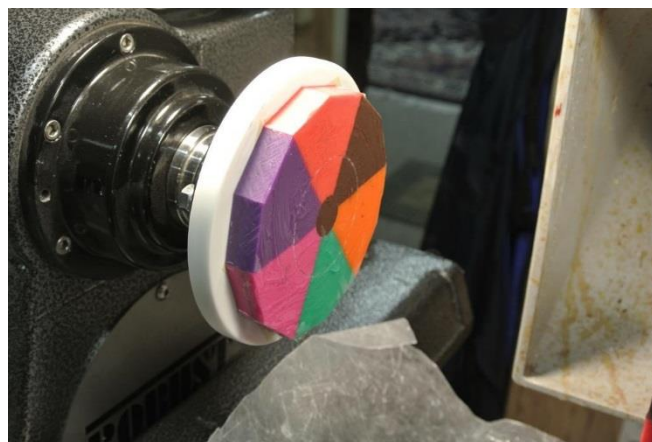
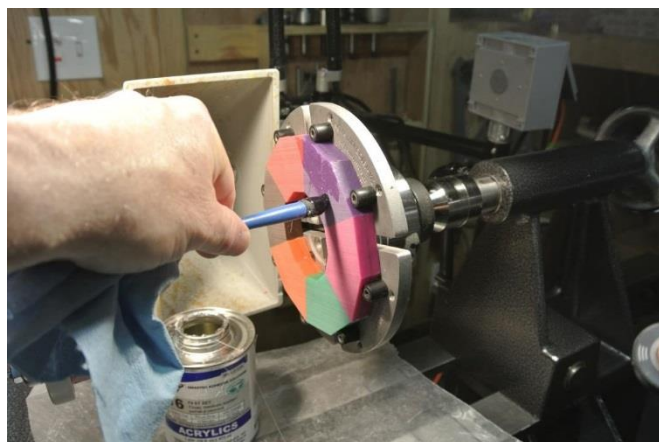
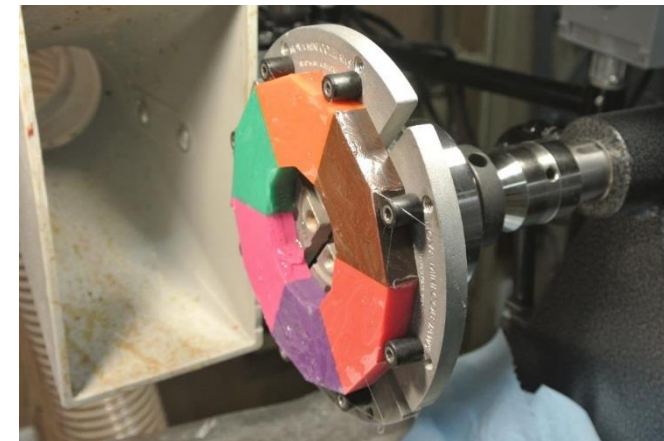
RING ASSEMBLY



RING STACKING

- Stacking the rings was done on the lathe for centering. I made a plug for the bottom by gluing short pieces together and turning them round to fit the bottom ring. I glued the plug quickly using the adhesive. All the rings were flattened and uniformly sized on my drum sander. The bottom ring with the plug installed was held to a wooden glue block and face plate using 5 minute epoxy. I used centering disks for centering and clearly marked the brick lay for quick assembly. I found that applying adhesive liberally to both faces worked best. On other projects I have used a Corian Faceplate with heavy duty double sided tape. This was easier to remove and finishing the bottom was easier.

RING STACKING



TURNING

- I experimented turning the material by making some pens. I found that you cannot be aggressive or it will shatter. Eventually I found that using a gentle finishing cut using the radius of the wing curve in a steady gently cut gave me long strands of cut. I think that as the tool gets hot it cuts better as it softens the material. Sharpen often because dull tools have more friction and make it harder to get a smooth cut. It also seems to help to have your tool rest below center to get a better angle on the gouge wing.

SANDING/FINISHING

- I power sanded starting at 320 grit. I sanded to 1500. I suspect that the mesh disks would be better for loading. The Hut puts a beautiful finish on it.

FINISHED PROJECTS



MATERIAL SUPPLIERS

- Stock is from Bear Tooth Woods www.beartoothwoods.com. Give them a call. They will sell almost everything they have in 1 meter lengths. I had them cut it into 24" (my shelf size) and the balance. This allowed shipping by USPS which was inexpensive.
- Adhesive is from IPS Corp www.ipscorp.com. The product I used is from their SCIGRIP Division. It is #16 adhesive. I chose this product after consultation with someone in their engineering department. The can says 5-6 minutes working time. I had hoped that I would be able to glue a complete ring in that time. It really is only workable in this application for about 10 seconds. They supply it with an applicator. The needle was too small for this viscosity material. I applied it with one of the small size new plastic glue applicators. The adhesive does not stick to the plastic brush. You can clean as you go or let it harden and just pull it off.
- Final finish is Hut brand Ultra Gloss Plastic Polish. I used it exactly as directed. I applied it on the lathe and used a rag at 2,000 RPM.