

Woodworkers Adhesives at The Krowe's Nest

At The Krowe's Nest we use the following adhesives or glues:

- PVA (polyvinyl acetate)
- Epoxy
- Weldbond
- Resorcinol
- CA (Cyanoacrylate)
- Polyurethane
- Hide Glue
- Contact Cement
- Hot Melt Glue

PVA is used most frequently. It is easy to use, bonds well, and cleans up with water. For most applications clamping is required. The exception is when gluing up segments for a segmented bowl/vase. I take two segments, apply glue to mating end grain surfaces, rub together until quite tacky then make sure they are aligned properly, then set aside to dry. It holds quite well. Of course the segments are staggered one above the other in the assembly with long grain to long grain which will hold the final assembly exceptionally well.

PVA comes in several types. My favorite brand is Titebond. For most applications I use regular or original. For parts with occasional exposure to moisture I use Titebond water resistant and for parts with outdoor or high moisture exposure I use Titebond Premium which is waterproof. When I have needed a long open time for complicated assemblies I have used Elmers white glue. Although it doesn't have quite the strength of yellow glue it has worked well for me. Titebond now has glue with an extended open time. Elmers brand also has similar types of PVA glues.

PVA glues are designed only for porous surfaces. It is usually not very good for repairs unless all the old glue is removed including some of the wood at the joint. It is not a gap filler, but mixed with wood dust can be used as a gap filler. It remains somewhat plastic and can creep if heavy loads are applied over time.

Epoxy is my next choice. I use a five minute epoxy for some repair jobs. It will stick well to non-porous surfaces, like failed glue joints. It also works well for filling voids in turned pieces, bowls/vases. I mix some stain in with the epoxy, such as coffee grounds, gel-stain, etc. I think it works best visually to have the patch slightly darker for turned parts. I also use 20 minute epoxy when a longer glue-up time is required. For example I will mix colored flakes for a decorated finish in a groove around a bowl and the 5 minute variety will dry too fast to complete the job. The 20 minute open time variety works much better.

Weldbond (Trade name) I haven't found out what type of glue this is but it sure works well for a variety of jobs. It is white but dries clear. It will stick to most any surface from glass to leather. I sometimes use it to repair old glue joints. It's more expensive than PVA glue but has a wider application. I don't think it's quite as strong as epoxy but haven't really tested it yet. It's made in Canada and I get it on E-Bay most of the time, but have found it in Florida. I have not seen it in Connecticut where I reside.

Resorcinol is a glue I have only used for one job. We needed to glue up three ¼" maple steam bent hoops into a circle for a banjo. The glue had a long open time and held quite well. It is a two part mixture. One part granular the other liquid.

CA (Cyanoacrylate) Trade names Krazy Glue, Superglue and others at woodworking stores. It is very tenacious and loves to bond skin to anything, so be careful. It comes in a thin, medium and thick consistency. I use it mostly for stopping cracks and for filling small voids in turned projects. Since it has a low shear strength some use it for temporary glue blocks for turning and other projects. My wife uses it to glue many small household objects.

There is an accelerator for an "instant bond". It will however, turn the glue a milky color. Ok for temporary projects but not for turned projects where it may show. It is some times used for a finish on turned pens and pencils. It has a very strong odor until fully cured. Turning it partially cured hurts my nose and eyes. It sets in about a minute but takes two hours for full strength.

Polyurethane I used to use this for outdoor projects since its water proof. Now that Titebond has a water proof glue that is all I use for outside projects. I found several problems with its use. It jumps of the glue stick onto my hands and clothes with out any provocation? It does clean up with mineral spirits until cured. It must be clamped tight and will not fill gaps. It relies on moisture in wood to cure properly so if the wood is too dry it must be dampened. Some of my chair making friends found it to be much weaker than PVA and Epoxy glues in their tests. They now use 20 minute epoxy on end grain gluing, the 20 minute type is applied to the end grain and let to penetrate before applying more for assembly. This makes for a very strong joint. Chairs can take quite a beating especially if there are households members under 20. **Polyurethane** is no longer in my shop.

Hide Glue. This glue is older than old. It has been used for thousands of years and was the most used glue before the advent of **PVA** glues and other synthetic glues. It has its plusses and minuses. The joints are reversible and repairable. It will glue to its self, an advantage in repairing joints that used it. It doesn't creep like PVA glues. It is somewhat brittle so it will often break loose with a sharp blow. A distinct advantage for violins that require periodic disassembly for repair and maintenance. The glue is used hot around 140 degrees. When it starts to cure it will pull the parts tighter. The open time is a minute or less.

I have used liquid hide glue. It has an additive to keep it liquid at room temperatures. I used it to re-adhere an oak veneer that had debonded from an old dresser top. It had a good open time that allowed me to correctly position the veneer before it cured. I did have to put some weight on the veneer for a strong bond.

Contact cement. I have rarely used this glue. Both surfaces must have the cement and let to tack up before mating the surfaces. There is no room for error as there is an instant bond with zero open time. It is used for laminated and some veneers. Cut the laminate over size for trimming after glue-up.

Hot Melt Glue. This is great stuff for temporary glue jobs. Such as glue blocks on turning projects and temporary clamps for other projects.