



Woodworkers Guild



of

Southwestern Michigan – <http://www.woodguild.org> December 2015

Next Meeting

December 8, 2015 7:00pm

**Rob Chamberlin's Shop
309 E. Water St. Downtown Kalamazoo**

The door on Water street is locked at 4pm so we will need to use the service door by the freight elevator on the North side of the building (Kalamazoo Ave.). This works well since our parking will also be on Kalamazoo Ave. in the gravel lot (see map).



Rob specializes in handmade furniture, architectural woodwork, and antique repair / restoration. **We need to bring our own chairs, since a portion of the meeting will be a slide presentation.**

The November may have well broken an attendance record. At last count fifty-one people were in attendance, including six guests.

Bill Crown opened the meeting with a welcome and introduction to our guests. He reminded the guild that toys for the Gospel Mission and Portage Community center are due ASAP. There is still time to get those to Bill.

The American Legion extended a thank you to the guild for the flag box donations. There are still a few flag boxes available for a worthy cause.

There was a quick around the room discussion to allow ample time for our evening's presenter.

George Armstrong was putting an outdoor decking down and considered composite, but upon further review he went with wood. He found that to run the composite at a 45° required special ordered composite with joists on 12" centers. One will also want to use clips or hidden fasteners because of the differing expansion rate of the composite and wood joist.

Bill Urfer described an auto repair business he and a friend rehabbed at 3812 E. Michigan Ave. It has a three stall garage and the mechanic will offer a 15% discount to woodguild members. The former business was Rose Pest Control. They upgraded the interior with high tensile concrete floor. They added insulation that took the heating bill from around \$1K per month to \$150.

Don Smith brought in segmented bowls that he has been learning to turn.

Ron Princing brought in a basswood carving of a rabbit and a name tag the he crafted from veneer pieces, inspiration for the tag came from our last meeting.

The meeting was turned over to our guest, Bob Behnke, Senior Technical Specialist Construction Products Division with Titebone Glues-Adhesives-Sealants. Bob has a chemist background and works with the group at Titebond that takes customer service calls. He has vast knowledge on problems experienced during glue ups and their solutions. He began discussing the challenge of gluing any wood is the fact that wood is not a constant material. The properties that vary are density, moisture content, dimensional changes, oils and contaminants such as dirt.

The lower the density of the wood, the quicker the glue will dry.

Same applies to moisture; low moisture equals quicker dry time. Titebond targets 6% moisture content for their testing. Moisture about 12~15% will not allow the adhesive to dry.

It pays to condition the wood to the environment well prior to use.

He spoke of the sunken glue joint that can occur if edge joined boards are surfaced too quickly after glue up. Initially the joint has swelled slightly from the moisture of the glue. If surfaced right away, there will be a sunken joint when the moisture leaves the dried joint. To avoid this problem, let the glued joint dry 4~7 days or use a polyurethane glue that has cured for 24 hours. He noted that the foam from polyurethane glue has very low strength around 9 – 30 PSI. Hide glue was another option.

Pitch, oil and other contaminants need to be cleaned away. Acetone is a good choice to remove oil from woods like IPE. Use a white rag to remove the contaminants. Repeat the cleaning process until the rag removes nothing more and remains white. It's not unheard of to spend an hour cleaning oils off a surface. Once the surface is clean, glue right away because the oil will eventually seep back from within the wood core.

Sometimes PVA glues can react with the iron in the wood and leave a dark glue line. A PVA glue line can react differently with woods like Brazilian cherry based on when the tree was harvested, summer vs winter. Another reason to consider polyurethane glue.

Epoxies come into play when there are gaps to be filled. It is also a good bond between wood and metal. A question was asked if it was acceptable to use table salt in a glue joint to prevent slippage and the answer is yes. Food coloring can be added to the epoxy as well with no detriment. Also noted that Titebond II bonds well with metal.

Question came up about gluing in biscuits in a joint. Bob pointed out that the strength is in the bonded joint, not the biscuit. However, biscuits are great for alignment.

It was asked if an iron can be used to activate glue on a veneered surface and yes that is ok to do. Use caution with hide glue as it can scorch and burn. Use a steam setting to activate the hide glue.

Be mindful when clamping of the cone of force under created by the clamp. Overlap the cone of force.

When sanding, rather than roughing up a surface with 80 grit sand paper, it is better to sand with 120-220 grit paper to achieve maximum bond strength.

Watch for charring or burnishing of a surface to be glued. A drop of water will sit on top of a burnished or charred surface, otherwise it will soak into the surface.

There is not a lot of cellulose on end grain, so Titebond No-Drip glue is a good choice for end grain.

PVA glues can go through 5~10 freeze thaw cycle without harm. It may be necessary to stir the glue.

The shelf life printed on the PVA glue is two years from date of manufacture. However one can expect a longer shelf life based on how well the glue is stored. Titebond I has been good after ten years. Titebond II and III can be stored for four years. Up to 5% water can be added to the PVA glues. The glue is no good once it has passed the chalk point. This is when the plastic balls in the glue will no longer melt or bond together to form a film.

Do a dry fit
Prepare glue and adhesives
Prep and clean the wood
Glue up
Allow to cure

A solution of water, acetone and vinegar can be made to help soften up a PVA joint.

Use masking tape to capture glue squeeze out if a residue free joint is required.

The evening had to be brought to a close as Bob still had plenty of information to present. He stayed late to answer individual questions, took names and addresses to send out sample products on request. It was information packed evening and we thank Bob Behnke for coming out to Kalamazoo and giving his time and sharing of information. He can be reached at BobBehnke@FranklinInternational.com

Note: Bruce DeDee provided the following information on some available lumber:

4/4 Rough Sawn Cherry & Walnut
6-8 years air dry in barn
Less than 9" width \$2.00/ Ln Ft
9" and greater width \$3.00/ Ln Ft
Max Miner 269-673-5885

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