

# POLYURETHANE GLUE

When it comes to building any outdoor project, you want to use an adhesive that stands up to the weather. Here in Iowa, that can mean lots of rain in the spring, humid heat in the summer, and dry, frozen winters.

I've tried a number of different glues on outdoor projects in the past (plastic resin, resorcinol, and epoxy). But this time, I decided to use one that's relatively new: polyurethane glue. (This glue is readily available at woodworking stores and catalogs and many home centers.)

When you hear "polyurethane," you probably think of the popular finishes first. But polyurethane glue has little in common with these finishes. In fact, it doesn't even have much in common with other outdoor glues.

For one thing, the outdoor glues I'm used to working with are all two-part concoctions. But there's no mixing necessary with this glue, it's ready to go right out of the bottle.

**APPLICATION.** But more importantly, polyurethane glues cure differently than other glues. Instead of curing by evaporation or by a reaction that takes place when two chemicals are mixed together, these glues simply react with the moisture in the wood (which should be at least 8%). To be on the safe side, I usually add a little water to one of the workpieces, misting it on with a spray bottle.

I apply the glue to the mating workpiece. Here again, polyurethane glue requires a different approach. With other glues, you don't want to "starve" the joint (not apply enough glue). But polyurethane expands as it cures, and the tendency is to apply too much. In fact, figuring out how *little* glue to apply takes some getting used to. I found it easiest to spread the glue thin with a plastic spreader, see photo. This way, I was sure the wood was covered without too much excess.

**WORKING TIME.** With most other glues, things start to get a little fran-



tic as I try to get the clamps in place before the glue sets up. That's another reason I like using this glue. There's no rush. You have 20-30 minutes to get the clamps in place and to make sure the assembly is square.

Of course, the down side to this is you have to leave the clamps on a while longer. I typically like to keep them on anywhere from 4-6 hours.

As I mentioned earlier, these glues expand as they react to moisture. But "foam" may describe it better, see inset photo. When I saw this bubbly mess oozing from the joint line, my first reaction was to wipe it off right away — before it hardened. But actually, polyurethane glue is much easier to remove *after* it has dried. Unlike other glues, this glue will scrape or sand off easily. (I like to use a cabinet scraper.) That's because the glue doesn't cure rock hard. You can even dent it with a fingernail.

**DRAWBACKS.** Polyurethane glue definitely deserves a place on the woodworker's shelf. But don't leave it there too long. After the bottle has been opened, the glue has a shelf life of about 6 months to a year.

That's not too unusual. Other glues have a limited shelf life too. But polyurethane glue is a bit more expensive than other glues. So when buy-



▲ One unique characteristic of polyurethane glue is that it foams as it reacts with the moisture in the wood.

ing some for a project, I try to get just what I think I'll be able to use.

There's one more drawback to note. Because this glue reacts with moisture, it will react with the moisture in your skin, so it's a good idea to wear gloves when applying the glue, see photo. And even though polyurethanes have little or no solvents in them, you should have adequate ventilation, too. (Also, if you have respiratory problems, be aware that these glues contain isocyanates.)

So what's the bottom line? For most projects, I'll probably still rely on trusty old yellow glue. Polyurethane glue is a little too pricey to replace it. But I'll definitely be using polyurethane glue again — on my next outdoor project or when I need a little extra assembly time. **W**