

Fasteners demonstrate G/flex® toughness

It all started when I got a tech call from somebody asking if WEST SYSTEM® 105/206 would accept a nail pounded in, after it was cured, with no pilot hole. I confidently said that it would not work well and in most cases cause a fracture in the epoxy. Just for fun, I went out in the shop and tried it because even though every tech advisor agreed it wouldn't work, nobody had ever actually done it. Well, we were right—the nail caused a “brittle” failure.

Then I saw a 1/8" thick piece of cured G/flex 650 epoxy sitting on my work bench that I had left over from another test. Once again, just for fun, I pounded a finish nail into the surface only to find out that it took the nail and didn't crack. Thinking it was a fluke, I did it again with no failure. At this point, I decided to do some tests with more controlled attention.

I cast a sample that varied in thickness up to 1/2" onto a piece of 3/4" plywood. The sample took 8p nails at five different thicknesses along the sample without cracking. The sample also took #6 drywall screws at different thicknesses with no pilot hole. To rule out the chance of this property going



away as it cures further, I put the samples in an oven at 120°F for the weekend. I took the samples out and let them cool back down to room temperature. When I tried again, all was the same as before—no epoxy failures.

Looking for the next step, I visited my uncle's furniture reupholstering shop. All of the samples took a 7/16" staple from an air gun, plus #4 and #6 tacks (think square cornered wedge) without cracking. G/flex is now used to fill frame members on furniture that has been reupholstered so many times that the wood is falling apart and won't hold a fastener.

Not only did these tests provide valuable data on the toughness, flexibility, and impact resistance of G/flex Epoxy, they gave us a great visual demonstration of what toughness is. —*Randy Zajac*