

# Epoxy adhesion over stains

We have occasionally reported results of adhesion testing of WEST SYSTEM epoxy to wood coated with various stains. In "Varnish over epoxy" in *Epoxyworks 18*, we touched on the topic of wood stains under epoxy and warned that some oil-based stains would cause an adhesion problem for WEST SYSTEM epoxy. Since then, we have done some additional adhesion testing to a number of stains (*below*). These included paste wood filler stain, oil-based stains and water-based stains. This testing also compared adhesion of epoxy to stains that had dried one day to stains that had dried four days. We tested adhesion



using our variation of ASTM-3359-83, which involves scoring the epoxy coating with a razor blade. Two to three 2" long cuts are made parallel to one another about 1/4" apart, deep enough to pass through the epoxy. Another set of cuts are made to intersect the first at a 45° to 90° angle. The points of intersection create ideal places where the epoxy coating will peel off if adhesion is poor. In the ASTM test, a special 3M™ tape with high tack is applied over the scored area and pressed into the coating to assure thorough contact. We substituted quality duct tape with high tack strength for the 3M. Once applied, the tape is pulled back at a flat angle, quickly, with a firm tug. If adhe-

sion is poor, the epoxy will peel from the surface and remain attached to the tape (*right*). If adhesion is good, the epoxy remains attached to the stained surface.



## Test results

Stain brand/type	24 hr. dry	4-day dry
Pettit™ Paste Wood Filler Stain . . .	fail (see photo)	pass
Minwax™ Wood Finish (oil base) . . . . .	fail	fail
Minwax Gel Stain . . . . .	pass	pass
WD Lockwood™ water-base aniline dye stain . . .	pass	pass
Minwax water-base stain . . . . .	pass	pass
Pratt & Lambert™ Tonic oil-base stain . . . . .	pass	pass
Old Masters™ oil-base (wiping) stain . . . . .	pass	pass
Ace Brand™ oil-base stain . . . . .	pass	pass
Bare wood control . . . . .	pass	pass

These results show that WEST SYSTEM epoxy adheres to some oil-base stains after 24 hours of drying. Others require more drying time before epoxy will adhere reliably. Our epoxy did not stick to Minwax Wood Finish even after four days of drying under ideal drying conditions.

If you have a preferred stain not listed above, you can conduct your own adhesion test. Be sure to cut completely through the epoxy coating and use a high tack tape. If you have no preferred stain, consider WD Lockwood's (212-966-4046) water-based aniline dye stain. It has worked reliably under epoxy for many years.—Tom Pawlak ■