Q&A

Rebuilding Rotted Windows

Q. *As a handyman, one of the problems I see most often is rotted wood trim on windows and doors (for example, brick moldings, sills, and the bottoms of side jambs). Moldings are not usually a difficult fix, but repairing or replacing wood members that are integral to the window or door unit (particularly if it's a double window or a door unit with sidelights) is difficult without weakening the unit. Can you provide guidance about when to repair or replace the rotted wood and how to do it, or whether to simply replace the unit?*

A. *Veteran carpenter Mike Shannahan of La Porte, Texas, responds:* It's an excellent question. Since specifics could fill a book, I'll offer some generalities. Economics will guide most decisions. By and large, unit replacement is the less expensive course of action wherever possible. It's a straightforward job, so the labor costs are usually reasonable.

That said, rebuilding is sometimes the only option, especially when you're dealing with historic, discontinued, or custom-fabricated members. A well-equipped woodworking shop should be able to duplicate just about anything. My working philosophy is that if something can be built once, it can be built again. To avoid future rot, I mill window and door parts from well-seasoned .40 CCA-treated yellow pine. As long as it's dry, treated wood takes paint well. I leave the use of consolidants, epoxies, and fillers to others. They have their place, but my experience with them has not been overly positive.

For milling, a high-quality shaper and bench-mounted production router are musts. There are almost unlimited numbers of over-the-counter bits available, or they can be custom made by specialty tool manufacturers. I buy cutters from Southeast Tool Company in Conover, N.C. (877/465-7012, www.southeasttool.com).

Typically, I'll charge the customer for any custom tooling needed and bill on a time-and-materials basis. Since setup can be tedious, I try to mill parts for all the units at once.

Your investment in time, skill, and equipment to successfully execute this kind of work is significant, so don't be timid when billing. This is not work for the "we'll beat any price" crowd. Good luck.

In Search of Exterior Trim

Q. *I would like to find an alternate crown molding for exterior use. I can't get my local suppliers to advise me if primed MDF crown can be used outside. I have thrown scraps of this product in the trash pile, where it was rained on for a month, and was amazed that it was unaffected. However, I don't want to install it outside, only to find out that it's the sun or something else that destroys it.*

A. *Finish carpenter Gary Katz of Reseda, Calif., responds:* There are crown moldings that are meant for exterior use, but MDF is not one of them, and neither is MDX, counter to the widely accepted belief. Your best material choices for exterior crown moldings are either wood or high-density polyurethane. If you use wood, I'd suggest redwood, cedar, Douglas fir, or yellow pine. However, I find that polyurethane moldings are superior to second-growth wood moldings because they hold paint much longer and never warp, twist, cup, or crack. If the material is installed properly, the joints remain tight indefinitely. Several companies manufacture a variety of crown moldings in polyurethane; I'd suggest trying Fypon (800/955-5748, www.fypon.com), Focal Point (800/662-5550, www.focalpointap.com), Chemcrest (800/665-6653, www.chemcrest.com), or Style-Mark (800/446-3040, www.style-mark.com).

Buckling Soffit Boards

Q. *I have been a contractor for over 25 years, but I recently ran into a new problem. We installed a 1x8 T&G pine soffit at the eaves and under the gable overhang on a new home here in Washington State last summer. The material is select tight-knot Ponderosa pine, kiln-dried and of good quality; it's coated on both sides with Messmer's stain. The work was done with summer temperatures ranging between 85° and 100°F. The pine was very dry. The boards were blind-nailed by hand with 6d galvanized shake nails.*

This winter, the boards have somehow expanded and buckled to the point that they're about to fall down in several places. There is no possibility of roof leaks. The house has vaulted ceilings throughout, but some of the worst areas are in the roof over the entry deck. The roof is vented at both the top with a ridge vent, and the bottom with a continuous vent. What is happening?

A. *Paul Fisette, a wood technologist at the University of Massachusetts at Amherst, responds:* There is one thing that will make wood swell, and that is adsorption of moisture. By contrast, expansion of wood resulting from an increase in temperature is insignificant. Your boards were installed flat and are now buckling. That tells us that they have gained moisture since they were installed. The question is how.

You have ruled out roof leaks. One possible scenario is that warm interior air, which contains more moisture than cold outside air, is somehow leaking into the soffit cavities and

condensing on the cold boards. The moisture content of the boards would rise, and they could swell as a result of increased relative humidity or the presence of water.

But a second scenario seems more likely. The boards are installed on the underside of protected gable overhangs and an attached porch, parts of the house that are disconnected from the interior air. It seems most likely that the boards gained moisture through exposure to water vapor in the outdoor air. Though you bought the boards kiln-dried, you probably don't know what their original moisture content was.

My guess is that they were installed too dry for the current ambient conditions. Wood typically equilibrates to around 12% moisture content for outdoor applications. Perhaps the manufacturer dried the boards to 8% MC, making them more suitable for interior use. Or perhaps the boards were mistakenly over-dried to an even lower moisture content. That happens.

Another factor may have contributed to the buckling. T&G boards up to 6 inches wide can be properly blind-nailed as you did. However, 8-inch-wide T&G should be face-nailed twice per bearing point. Using a tighter nail schedule would not stop swelling, but it would restrict movement and help minimize buckling.

Waterborne vs. Oil-Modified Floor Finishes

Q. *Which type of floor finish provides the most durable coating, oil-based polyurethanes or water-based polyurethanes?*

A. *Second-generation floor finisher Michael Purser, of the Rosebud Co. in Atlanta, responds:* Both products are good, but my preference is for waterborne urethanes, which were introduced for residential use around 1987. They stumbled out of the starting blocks with a few problems, but those were dealt with fairly quickly. Since then, waterborne urethanes have consistently gotten better and better. I have no qualms about saying that some of the waterborne products available today are the finest coatings ever formulated for use on wood floors. And the technology continues to improve.

Specifically, these waterborne products wear better and are more easily maintained than oil-modified urethanes. They have excellent drying and curing times, and good color stability. And, for me, the lack of noxious and hazardous vapors makes them a no-brainer. I admit that there can be problems if you aren't careful about the moisture content in wood, application technique, temperature and relative humidity, and air movement during the curing, but I will gladly pay attention to those variables to work with such good products. Waterbornes are also more expensive than oil-modified urethanes but not prohibitively so.

I occasionally look at new products and manufacturers in the market, but by and large, I use waterborne products by companies with a proven track record and product line. I have had good results over the years with products from Basic Coatings (800/441-1934, www.basiccoatings.com) and BonaKemi (800/574-4674, www.bonakemi.com).

Got a question?
Send it to Q&A, *JLC*, 186 Allen Brook Ln., Williston, VT 05495; or e-mail to jlc-editorial@hanley-wood.com.