

Q. Fixing Voids in Engineered Flooring

A subcontractor glued down 4½-inch-wide plank engineered flooring on a concrete slab-on-grade using flooring adhesive applied with a V-notch trowel. But the instructions on the bucket indicated that a ¼-inch square notched trowel should have been used instead; consequently, the spread rate was about 25 percent less than it should have been. Now the floor has developed several 'hollow spots' where the flooring seems to be floating rather than firmly glued to the substrate beneath. The sub says he'll use a small drill and inject some adhesive into the hollow spots, but the homeowners have misgivings about this approach. What should I have the subcontractor do to fix this?

A. *Michael Purser, a second-generation wood flooring contractor in Atlanta, responds:* While it's reasonable to suppose that the trowel's spread rate has caused the problem you describe, it's more likely that this situation is the result of unevenness in the concrete's surface.

Regardless of how much mastic is put down, if a poured concrete slab has significant low or high spots, these are probably the source of voids between the flooring and the subfloor. The engineered product is not going to stay in place unless the surface is reasonably flat; if it isn't, the flooring breaks free from the mastic. And in this case, the flooring's 4½-inch width would only make the situation worse; flooring with a thinner — and therefore more flexible — profile would be

a bit less likely to separate from the glue.

Injecting glue into the affected areas is a very common solution. Although some installers resort to epoxy, DriTac (800/394-9310, www.dritac.com) makes a repair kit — consisting of an injection gun, adhesive cartridges, mixing nozzles, applicator tips, and drill bits — designed specifically for this situation.

To use the kit, you start by drilling a pair of small, ⅜-inch-diameter holes into the wood flooring, preferably in a low-profile spot like a head joint, a V-joint, or wherever there is noticeable graining. One hole is used to deliver the glue, and the other allows air to escape as the glue is injected into the cavity (more holes may be necessary for larger areas). The adhesive is self-leveling, so after the cavity is completely filled (you'll know because glue will start to come out of the second hole), you can fill the holes with a tapered dowel trimmed to fit and matching putty.

According to the manufacturer, there's no need to apply weight to bed the flooring in the new adhesive, and the flooring can be used immediately after repair.

This is not an unusual problem for engineered flooring, and it's easily remedied. Your subcontractor's solution is very typical and shows that he has successfully dealt with this situation before.

Q. Are Bubble-Wrap R-Value Claims Accurate?

Am I the only one confused by the claims of manufacturers of foil-covered bubble wrap and foil-covered flexible thin plastic foam? Apparently, if one is to believe the advertising, a ⅜-inch-thick roll of foil-faced bubble wrap can give you the same thermal performance as 2 inches of rigid foam insulation. How is this possible?

A. *Martin Holladay, editor of Energy Design Update, responds:* The R-value of ⅜-inch-thick foil-faced bubble wrap is about 1.3. The R-value of ⅜-inch-thick foil-faced expanded polystyrene foam is about 1.6.

By contrast, 2 inches of extruded polystyrene insulation has an R-value of 10.

Bubble-wrap manufacturers who claim their product matches the performance of 2 inches of rigid foam are breaking the law.

In 2004 and 2005, the Federal Trade Commission sent out a series of letters to manufacturers of foil-faced bubble pack, warning, "The FTC staff is aware that certain claims have been made in the marketplace for foil-faced bubble pack products (or similar reflective or radiant barrier products) installed under concrete slabs.

In the staff's view, it may be misleading for industry members to suggest that such foil products will reflect radiant heat when installed under concrete.

"It is well accepted that reflective insulations and radiant barrier products must have an air space adjacent to the reflective material to be effective. Such air spaces are unlikely to exist under concrete slabs.

"Accordingly, it is unlikely that the reflective qualities of these products will yield any significant benefits when they are installed under slabs. ...

"In the staff's view, advertising that suggests otherwise could harm the ability of builders and other consumers to make appropriate insulation choices."

Foil-faced bubble wrap is a product in search of an application. The product has too low an R-value to provide much benefit under a concrete slab; moreover, the foil facing provides no benefit under a slab beyond that of a vapor barrier.

Although some manufacturers of foil-faced bubble pack recommend installing the product under roof sheathing to reduce summer heat gain in an attic, there are cheaper, foil-only products that serve that purpose just as well.

In other applications — crawlspaces, above-grade walls, and attic floors — the R-value of conventional insulation (for example, rigid foam, fiberglass batts, and cellulose) per dollar invested will be considerably higher than that of foil-faced bubble pack.

Q. Hinge Mortise Templates

What's the advantage of using a router fitted with a template guide bushing to cut hinge mortises? Why not just use a flush-cutting pilot bit and a flush-type template?

A. *Gary Katz, a finish carpenter in Reseda, Calif., and moderator of jlconline.com's finish-carpentry forum, responds:* Whenever I'm duplicating a shape with a pattern template, I generally like to use a pilot — or pattern — bit guided by a top- or bottom-mounted bearing that matches the diameter of the cutters.

An advantage of this setup is that the template can be made to exactly match the size and shape of the workpiece; there's no need to calculate offsets. And because the bit is going around the outside of the pattern, sawdust buildup interfering with the cutter is rarely a problem.

But when I cut mortises with a router and a template — for hinges, locks, and other hardware or joinery — I prefer to use a template guide bushing and a regular mortising bit in my router rather than a bearing-guided bit. This mortising method offers several advantages.

First, when you're cutting a mortise, the router bit must be inserted inside the template, so a template guide bushing protects the interior walls of the template from being nicked. Also, when you're using a template guide bushing, the template opening has to be oversized to accommodate the bushing's outside dimension, which is a good thing because sawdust waste builds up inside a mortise template. Having a template that's 1/8 inch to 1/4 inch larger than the mortise allows a little extra room for this waste, making it easier to cut mortises quickly and cleanly.

In addition, the template kits of some manufacturers feature template guide bushings that are easy to remove in mid-operation, making it possible to switch quickly from one bushing to another of a different size. This is something I do frequently, particularly when I need a mortise that steps down deeper once the plate

size is cut (for pocket pulls and some flush bolts, for instance).

Q. Double Vapor Barriers

While building a new home in upstate New York, we installed R-15 kraft-faced insulation in the walls, but the local building inspector then made us install 4-mil poly over the kraft paper facing. We've been told by other builders and inspectors that this is not a good practice. Is this double vapor barrier likely to cause problems later on?

A. *Bruce Harley, technical director of Conservation Services Group in West-boro, Mass., and the author of Insulate and Weatherize, responds:* Your building inspector was mistaken. The New York code calls for a "... vapor retarder having a maximum permeance rating of 1.0 perm. ... The vapor retarder shall be installed on the warm-in-winter side of the thermal insulation."

A lot of people call this a "vapor barrier" requirement, and believe polyethylene is required by the code, but kraft facing on batt insulation (which has a permeance of about 0.4) meets this code requirement all by itself.

More than likely, installing an additional layer of poly over kraft facing won't cause any problems — it's no more risky than if the wall had only unfaced batts and poly — and the risk of using poly on the interior is relatively low in a cold climate like New York's.

The risk is mostly one of summertime condensation on the poly, which is unlikely unless you have air conditioning in the home combined with a highly vapor-permeable exterior, or a moisture-reservoir cladding such as brick.

In my opinion, the only real problem here is that it was probably a waste of

time and money to install both kraft-faced insulation and poly.

The common taboo against a double vapor barrier arises from a very real concern: If you have a Class I vapor retarder (less than 0.1 perm) on both sides of a wall, that wall has virtually no drying potential in either direction. So whether it gets wet from lingering construction moisture, a bulk water leak at a window or roof, a plumbing leak, or condensation, the wall will slowly turn into a soggy, stinking mess. That is why you should avoid poly on the interior if you are installing foil-faced rigid foam on the exterior of the wall sheathing.

Of course, if you have enough rigid foam, you don't need the interior vapor retarder — the foam keeps the sheathing warm, reducing the potential for condensation to form on the sheathing. How much foam you need depends on the climate.

In a hot climate — particularly a hot, humid climate — everything I've said above is reversed. The last thing you would ever want is polyethylene (or vinyl wallpaper, or any other nonpermeable membrane) on the inside of an exterior wall.

Q. What to Do About Wood Wasps?

We recently built a custom home in the Upper Peninsula of Michigan; construction began in the fall. During the warming months of spring, when the homeowners moved in, they began noticing perfect 1/4-inch-diameter holes in the drywall, as if someone had bored a hole with a drill bit. We discovered that the holes were being created from within the wall cavity by an insect chewing through the drywall. It was identified by the local extension service as a wood wasp.



Barbara Srinadova

We've found seven wasps in the 5,400-square-foot home, and all seven have emerged from the main floor's exterior walls. The information I've found about life span, methods of control, degree of damage, and the like is somewhat contradictory. Even local pest-control experts disagree about what should be done about the wasps. Some recommend a whole-house fogging, while others advise letting them run their course. What's the best course of action?

A. *Terry Brennen of Camroden Associates in Westmoreland, N.Y., a consultant who specializes in mold and pest issues, responds:* Wood wasps — also known as horntails — aren't actually wasps at all, but received their name because of their resemblance to their stinging relatives in the Hymenoptera family (see photo, above).

Found throughout the United States and in other parts of the world, the various subspecies of wood wasps are all fairly distinctive looking; I believe your extension service has correctly identified the insects discovered in your clients' home.

This is good news, because wood wasps don't sting or bite people, and they can't cause any significant structural damage with their chewing.

Furthermore, wood wasps do not col-

onize buildings. Most likely, lumber used in the home's construction harbored a few larvae, which are usually found in trees that have some damage or have been recently felled.

A single horntail lays only a dozen or fewer eggs, inserting them one at a time into damaged or decaying softwood. After the eggs hatch, the larval stages of the insect might spend between two to five years boring short tunnels in the wood.

Once they've reached the adult stage, however, wood wasps bore an exit hole and leave, and won't recolonize these holes. So if the insects you're finding are the result of one female, there will be only a few. In any case, it would be unusual to find many more.

Because the insects aren't harmful and are likely to be small in number, I advise against spraying or fogging. (In general, I avoid pesticide use whenever possible.) Let nature take its course.

Only if you end up with more than a dozen of these harmless insects, with no end in sight, would this mystery warrant further investigation.

GOT A QUESTION?

Send it to Q&A, JLC, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.

