Bubbling Laminate

Q. *Over the past five years, I've built more than 30 laminate countertops, and I've never had any problems with them. Recently, however, one of my countertops started to bubble in a few places about five weeks after I built it. I tried taking an iron and heating the laminate, then flattening it with a J-roller until the laminate cooled. This worked, but for only about a week. What could be causing this to happen? And what can I do to fix this problem?*

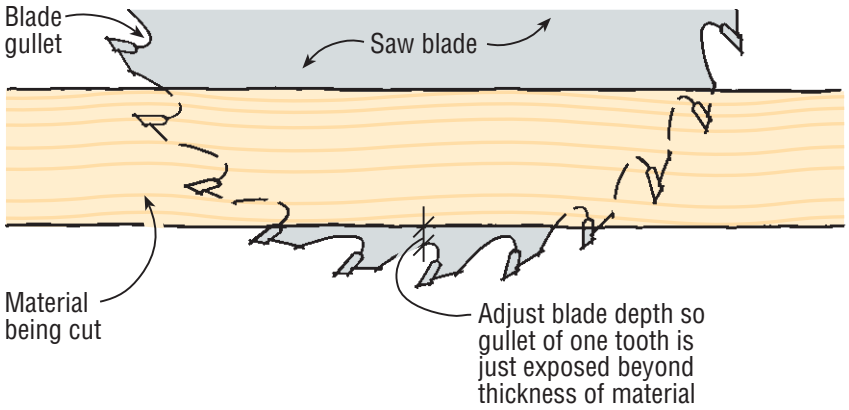
A. *Merrill Glos, engineer at Formica Corp., responds:* The most common cause of bubbling laminate is dimensional incompatibility between the laminate and the substrate. To prevent the problem, the substrate and the laminate must be compatible — they must respond to humidity changes by expanding and contracting at the same rates — and they must both be acclimated to the indoor environment before they are bonded.

If the laminate is dry and the particleboard is wet, the laminate will bubble when the laminate grows and the substrate either shrinks or stays the same size. It takes laminate about two days to acclimate, if air can get to both sides of the material. For a piece of 3/4-inch particleboard substrate, it takes about a week. The best substrate is particleboard, which has good dimensional compatibility with laminate. Plywood makes a poor substrate, because it is more dimensionally stable than laminate.

Solvent-based adhesives are preferable to water-based adhesives. When it comes to dimensional movement, wood reacts with moisture, not with solvent. Even with proper acclimation, if you use water-based contact adhesive, the water can disrupt the humidity balance by introducing water into the laminate or the substrate. Solvent-based adhesives tend to be more forgiving than water-based adhesives, and do not induce dimensional change problems.

To solve the problem, you'll have to heat up a larger area of the laminate than just the bubbled area. Heat up the bubbled area, as well as the entire area from the bubbles to the nearest laminate edge. This will allow the laminate to slip, adjusting to the change in dimension. After heating, use a 3-inch J-roller to rebond the contact adhesive, rolling until the adhesive is cool and has regained its strength.

Proper Blade Depth



Saw Blade Depth Adjustment

Q. *We have an ongoing debate on our job site concerning the proper way to adjust the blade depth on a circular saw. One group says that the blade should be set just slightly deeper than the thickness of the material being cut. The other group says that the blade should usually be left at the maximum depth, since this allegedly gives better control, is less stressful on the saw, and gives the longest blade life. Who's right?*

A. *Steve Dassoulas, a technical manager at DeWalt, responds:* Both groups are partly right. It really depends on what the user wants — better finish or better blade life. For a given cutting speed, setting a deeper cut depth does increase blade life. A deeper cut is less stressful on the saw and the blade, because fewer teeth are in contact with the wood at any one time. The downside to this approach is that it increases the entry and exit angles of the teeth with the wood, which reduces the quality of cut finish. So if it's finish you want, adjust the blade depth to slightly more than the thickness of the material.

Minimizing blade depth also improves safety. Keep in mind that kickback can occur when the back of the blade gets pinched. With less depth of cut, less blade area is exposed to the wood, decreasing the chance of kickback. Because there is always a risk that an operator can accidentally get in the way of the blade, reducing the amount of exposed blade improves safety. It also decreases the likelihood that the saw will cut unknown pipes or wires that may be hidden behind the material being cut.

For the best quality of finish and the greatest level of personal safety, set the blade so that the gullet of one tooth is slightly exposed beyond the thickness of the material being cut.

Too Much Thermal Mass?

Q. *When designing a radiant floor, can there be such a thing as too much thermal mass? Here in Alaska, we sometimes see the temperature jump from -10°F up to 40°F above in just a few hours.*

A. *Doug Mossbrook, president of Eagle Mountain HVAC, responds:* Thermal mass can be a double-edged sword. With too little mass, the boiler runs more often, and there is an increased likelihood of indoor temperature swings. With too much mass, the system can be slow in responding to sudden outdoor temperature changes, resulting in spikes and valleys in the indoor temperature.

In the case of high-mass systems, there are ways to reduce this effect. Outdoor temperature controls, which are common in Europe, can be used in what is called a "constant flow" system. With this method, also called "flat lining," the temperature of the fluid is modulated based on the outdoor air temperature. If the heat loss calculations are accurate, you won't notice any variation at all in a building's indoor temperature, no matter how quickly the outdoor temperature changes.

Should EIFS Extend to Grade?

Q. *Is it acceptable to terminate EIFS at grade? I'm worried that this might provide easy access for termites, or might allow moisture to wick into the wall.*

A. *Architect and EIFS specialist Richard Piper responds:* EIFS should be terminated above grade for the two concerns you mention — termites, and the possibility of moisture entering the wall by capillary action. Snow and ice can also cause water to back up into the wall in winter. Most building codes require the top of the foundation to be 6 or 8 inches above grade for the same reasons. If you want the color and texture of the EIFS finish to extend to grade, the exposed portion of the foundation can be skim-coated with EIFS base material and finish.

Ideally, the lower edge of the EIFS extends approximately one inch below the top of the foundation and is sealed to the foundation to prevent air infiltration. If the resulting thermal gap is your primary concern, it is better to address it from the inside, even though interior insulation is generally not as effective as exterior insulation. The possible damage by moisture and termites outweighs, in my opinion, any advantage of continuous exterior thermal insulation.

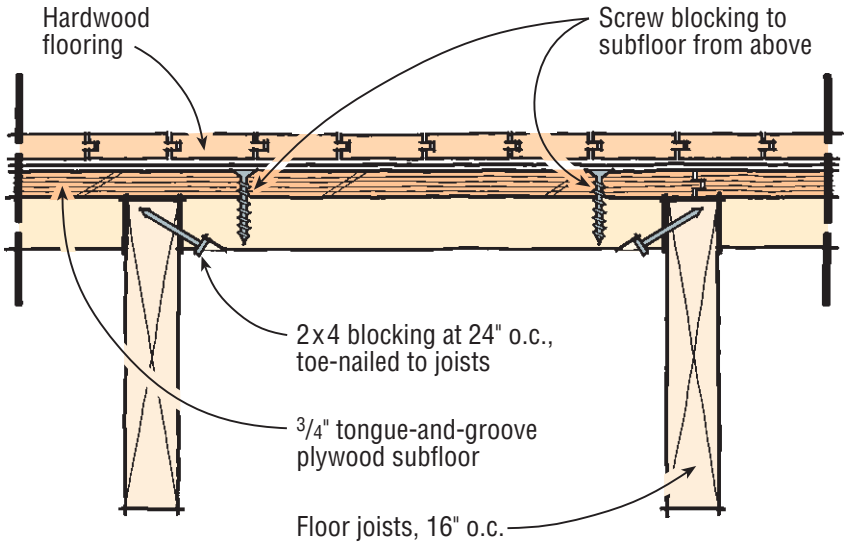
Laying a Hardwood Floor Parallel to the Joists

Q. *For aesthetic reasons, I would like to run 3/4x3-inch oak strip flooring parallel to the floor joists, instead of perpendicular as is typical. Is there any reason I can't do it? The subfloor is 3/4-inch tongue-and-groove plywood.*

A. *Flooring contractor Howard Brickman responds:* If the subfloor is stiff enough, there is no reason why solid nail-down strip flooring can't be run parallel to the joists. First, renail the existing plywood subfloor, so that the old nails are tight, and add new nails to achieve a maximum nail spacing of 6 inches.

Where floor joists are spaced 16 inches on-center, whether or not a 3/4-inch plywood subfloor is adequate for this type of installation is a judgment call. Some plywood subfloors deflect more than others. If the plywood feels stiff, you will probably be okay. If you can feel some deflection, you have two options. If raising the floor height is not a problem, you can install a layer of 1/2-inch plywood over the existing 3/4-inch plywood. The other option — assuming you have access to the open joists from below — is to install 2x4 blocking between the joists, 24 inches on-center. Once the blocking is toe-nailed in place, it should also be fastened from above with screws through the plywood.

In the unlikely event that the existing floor joists are spaced 12 inches on-center, your 3/4-inch plywood subfloor is certainly adequate, and you should have no problems.



GOT A QUESTION?

Send it to On the House, *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to *jlc@bginet.com*.