

Insulating an Exposed Plank Cathedral Ceiling

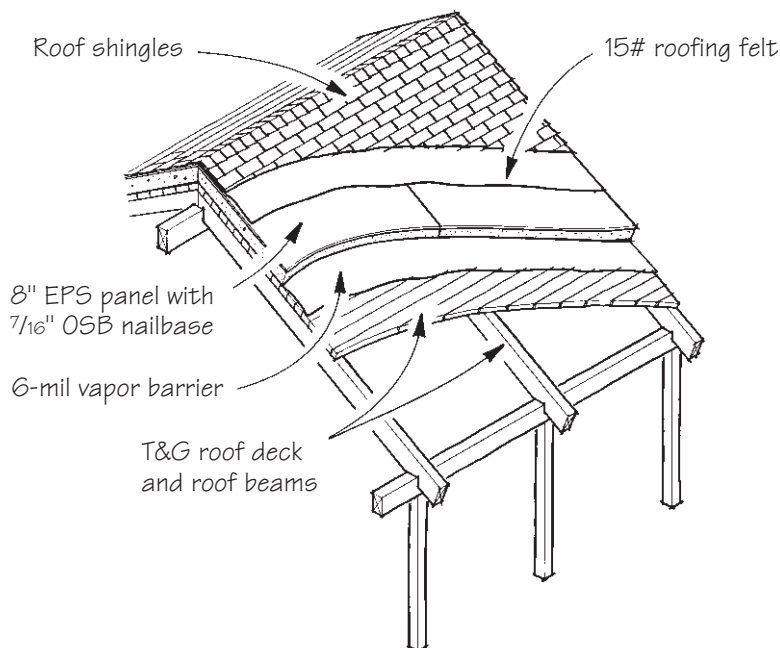
Q. *What is the best way to insulate a cathedral ceiling with exposed 2x6 T&G boards above the rafters? I'm in a 6,000-degree-day climate.*

A. *Bill Zoeller, an architect with Steven Winter Associates in Norwalk, Conn., responds:* Assuming the rafters and 2x6 boards are properly sized to handle the roof loads, a simple, cost-effective solution is to use a preassembled panel of expanded polystyrene (EPS) laminated to a single layer of $\frac{7}{16}$ -inch OSB (see illustration). This is essentially a structural insulated panel (SIP) with one layer of OSB missing. Install a 6-mil polyethylene vapor retarder over the tongue-and-groove roof planks. The EPS

panels attach to the roof structure with long spikes. You can then roof over the OSB surface with any conventional sloped roof application. The overall panel thickness varies depending on the desired R-value. A nominal 8-inch panel will provide an R-value of around 30.

This method complies with the CABO code. The poly meets Section 321, which requires a vapor retarder on the "warm-in-winter side of the thermal insulation" of all unventilated walls, floors, and ceilings. Section 806, requiring roof ventilation, applies only to enclosed attics and enclosed rafter bays, not to a solid panel roof system.

An alternative is to have the tongue-and-groove decking laminated to the



interior OSB surface of a structural insulated panel. In this case, since the panel itself is designed to carry the roof loads, you can save money by using 3/4-inch T&G planks instead of the 1 1/2-inch thickness. These panels are available in 4-foot widths and lengths up to 24 feet (long panels require a crane to set). For a SIP manufacturer in your area, call the Structural Insulated Panel Association at 202/347-7800.

Preventing Grout Stains on Kitchen Counters

Q. *I often hear clients complain that they like the look of their tile kitchen counters, but that it's too hard to keep the grout lines clean. Is there any kind of grout that resists staining, or a sealer that works?*

A. *Michael Byrne, director of the Ceramic Tile Education Foundation, responds:* The problem with discolored grout in kitchens is all too common, but it doesn't have to be that way. There are three main issues: Choosing the right grout and grout color, installing it correctly, and sealing it with the right product. Tile choice can also make a difference.


Before choosing a grout color, you need to know how heavily the kitchen will be used. In a kitchen that sees only light cooking and cleanup, you should be able to use any color. Use pink if it makes the client happy. But if a lot of cooking is going to go on, you should probably choose a grout the color of dirty dishwater — gray — because that's the color the grout will want to turn. If you put a white grout in that kitchen (the worst choice), you're essentially making the homeowner a slave to keep it clean. Black and other very dark colors are also bad because they show up light stains and deposits. Steer your client toward cement gray. The most durable grout is an epoxy, which is available in gray. But if your client just has to have that dark green grout she's seen in a friend's kitchen, use a latex grout — you'll have a better color choice.

Next, you have to apply the grout properly. Make sure you mix it accord-

ing to instructions, and make sure to use a grout trowel so the material is forced into and completely fills the joint. A step that is usually neglected is striking the joint. Most installers use only a sponge for grouting, which has the effect of removing the fine Portland cement and sand filler and exposing the sharp edges of the silica aggregate — leaving a very rough and abrasive grout surface. Imagine dropping a peanut butter sandwich on a piece of sandpaper and trying to clean it — this is what the homeowner will be faced with in trying to clean that grout surface. Striking the joint, with a tool like a brick mason uses, compacts and smooths the grout, making for a much smoother, less absorbent, and easier-to-clean grout line.

If you don't install the grout properly, sealing is a useless exercise. But assuming you've tooled the grout correctly, now apply an impregnating sealer. A good choice is 511 Porous Plus (Miracle Sealants, 800/350-1901). This is a solvent-based sealer used on stone buildings to make it easy to clean off graffiti. It requires 72 hours of curing, but once cured, it's food-safe. Two other good choices would be Sealer's Choice 15 or Grout Sealer from AquaMix (800/366-6877). Grout Sealer is an acrylic product that leaves a smooth, easy-to-clean surface; Sealer's Choice is a commercial-duty product with a 15-year service life. I would avoid using silicone sealers, which are ineffective.

Sealers will have to be maintained, depending on use. And tile needs to be cleaned for staining just like any other surface — if you spill some wine in a grout line, sponge it up.

Tile choice is not usually the contractor's decision, though if your client wants a tile counter but is concerned about grout staining, you might recommend using oversized tiles on the counter to reduce the number of grout lines. 

GOT A QUESTION? Send it to On the House, JLC, 932 West Main St., Richmond, VT 05477; or e-mail to jlc@bginet.com. 