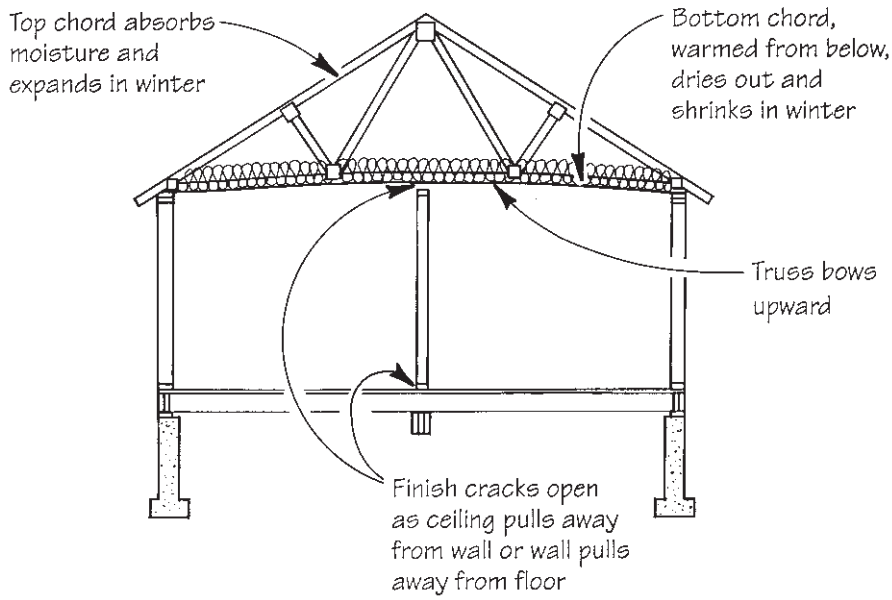
Truss Uplift Solutions

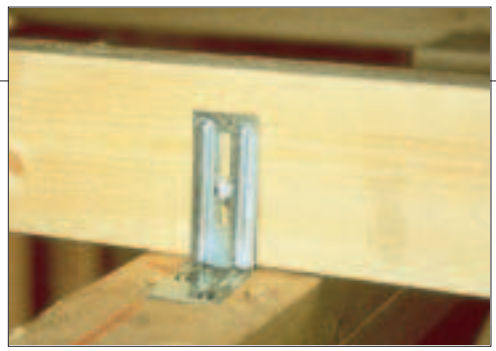
Q. *What would cause the sole plate of a nonbearing partition wall to pull away from the subfloor? The wall is nailed into roof trusses where they cross it above. There is no sag in the floor system below.*

A. *David Utterback responds:* If your floor is framed with green lumber, shrinkage of the floor joists could contribute to the problem you describe. But the primary cause is probably truss uplift. Lower truss chords that touch the warm ceiling dry out and shrink during the heating season, while the cold upper chords gain moisture and expand. The whole truss then curves like a bow, rising at the center. If the truss is nailed to the wall, it pulls the wall with it. The moving truss can also create drywall finish cracks in the corners where walls and ceilings meet (see illustration, below).

Whether floor joist shrinkage or truss uplift is causing the problem, the way to prevent it is the same: Instead of nailing trusses to wall plates, use truss clips as shown in the photo below (available from Simpson Strong Tie, 4637 Chabot Dr., Suite 200, Pleasanton, CA 94588; 800/999-5099). The clips allow each truss to flex up and down freely, while preventing it from moving side to side

Truss Uplift





Shrinkage in bottom chords and expansion in top chords cause trusses to flex upward at the center, lifting walls and ceilings with them. Prevent the problem with truss clips (left), which allow the truss to move up and down with seasonal moisture changes, while restraining movement in any other direction.

Also, don't screw the ceiling drywall to the truss where it passes over the partition. Instead, hold your screws 12 to 16 inches back from the partition and screw the edge of the ceiling drywall to 2-by nailer blocks that have been fastened to the wall top plate between the trusses. This gives the drywall enough room to flex at the joint and prevents a crack from forming.

We usually see these movement problems in the first couple of heating seasons. After that, the houses seem to settle down and the problems lessen. In any case, the wall should drop back down in the spring, so wait until then to fix the problem. Whatever you do, don't shim under the wall during winter when the crack appears — if you do, when the roof settles back down in spring, you'll have created a bearing situation in the center of the truss where there isn't supposed to be one.

Dave Utterback is a district manager and code expert for Western Wood Products Association. Before joining WWPA, he was a contractor specializing in residential and commercial wood-frame construction.

Bending Wood Shingles

Q. *I'm about to take on a wood-shingle roofing job on an unusual roof with a lot of sinuous curves. I'm planning on steaming and bending strapping to provide a nailing base for the shingles, then steaming and bending the shingles, too. But isn't there an easier way?*

A. *Martin Obando responds:* You can make slight bends in shingles by just soaking them. But for serious curves, you've got to steam them. Get a book on wooden boat building or visit a boatyard if you want to learn how to steam wood — the same techniques that work for big timbers work for shingles. I've seen people rig up a steaming apparatus from an old beer keg, a piece of waste pipe, and a propane heater — if you're handy, it's not too hard.

Ten or 15 minutes of steaming will soften up shingles. Once they're soft and you've bent them into the shape you want, douse them with cold water and they'll hold that form.

However, when you start to get creative like this with shingles, you're departing from their original purpose as a water-shedding roof and emphasizing their visual effect instead. It's prudent not to push it. I've done a lot of decorative roof shingling, and in my experience, the best way is to start by building a submarine (that's my term for providing a reliable waterproof layer under the shingles). In the old days, I would use two layers of 15-pound roofing felt with a layer of cold roofing mastic sandwiched between. Once products like Grace's Ice and Water Shield came out, I started using those instead (doubled up and lapped — I don't trust a single layer in freezing climates).

With a reliable waterproof substrate in place, you've got a lot more leeway with how you trim and arrange your shingles. For instance, in places where you reduce your reveals and leave just a few inches exposed to the weather, there's no need for all that extra shingle that's buried under succeeding courses in a standard triple-coverage application. For sharp bends, I'll often cut quite a few inches off the thin end of the shingle to make it easier to work with. This way I can avoid some of that steaming and soaking.

Cutting down your shingles that way can make this job a lot easier (in tight spots, almost everybody gives in and does it). It may compromise the water-shedding capabilities of the shingles somewhat, but that decision was already made by the designer who put all the whoop-te-doos into the roof plan (that's why I recommended a waterproofing membrane).

Compromising function for style means relying more on the membrane as your final defense against the rain. But the shingles will still shed almost all the water, and they'll protect the membrane from the sun, too. ■

Master roofer Martin Obando is director of applications specifications for the Cedar Shake and Shingle Bureau.

Got a question about a building or renovation project? Send it to On the House, *JLC*, RR 2, Box 146, Richmond, VT 05477.