Strongbacks in Floor Trusses

Q. *Should strongbacks in floor trusses be placed next to the top chord or the bottom chord? I've seen it both ways.*

A. *Frank Woeste, P.E., professor of wood construction at Virginia Tech, responds:* Strongbacks serve two purposes. They provide for load sharing between trusses and they help to reduce annoying floor vibrations. For load sharing, it doesn't matter whether the strongback is at the top or bottom, but for stiffening the floor against vibration, the strongback should always be placed right against the bottom chord.

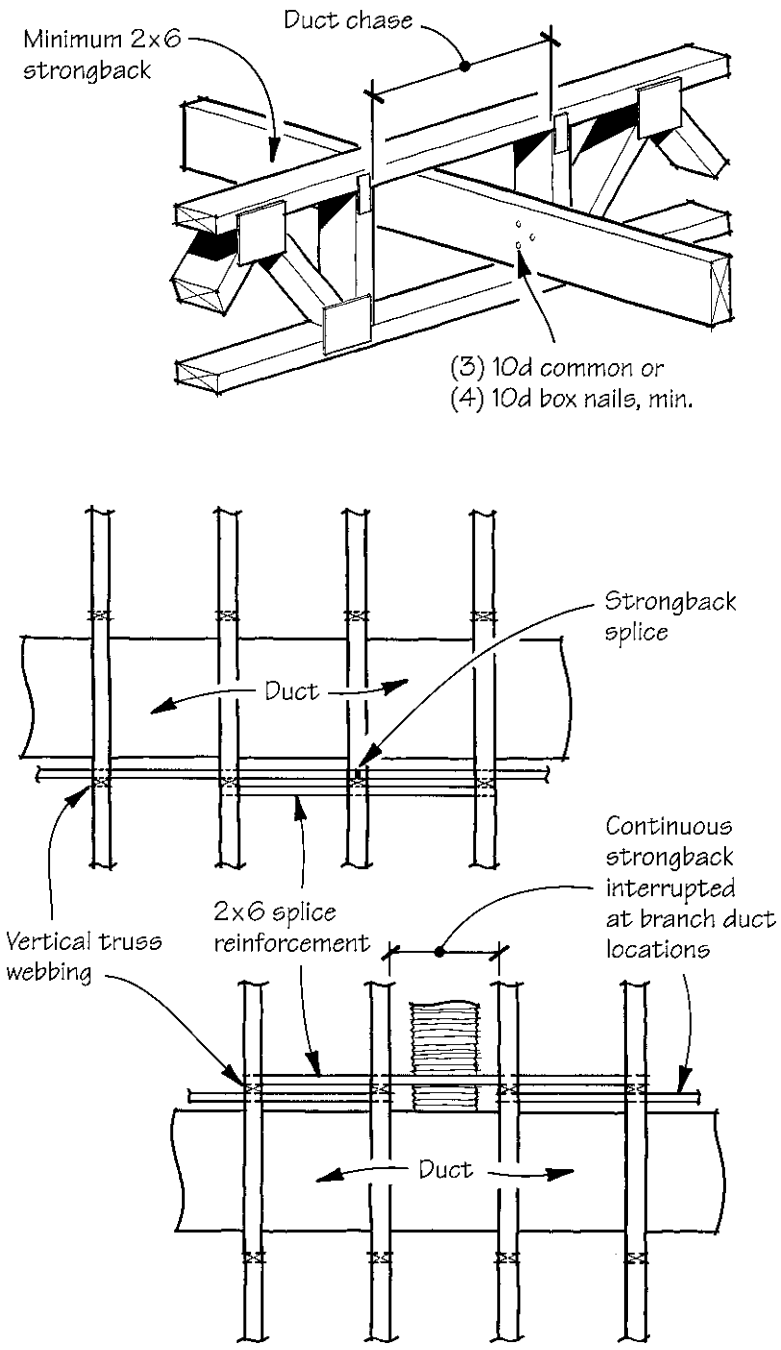
When someone walks across a floor, the floor joists don't just vibrate up and down; the bottom chords also vibrate from side to side (assuming no drywall ceiling is attached to the underside.) The plywood or OSB subfloor stops the lateral vibration at the top of the joist, but the bottom can still vibrate back and forth. Placing the strongback at the bottom of the floor truss vertical web stops this side-to-side movement and should improve the overall perceptible performance of the floor.

When there's a ceiling on the bottom of the trusses, the drywall will reduce this lateral movement. Putting the strongback at the bottom of the truss will further restrict the side-to-side vibration.

Place the strongback at the center of the span, on one of the vertical web members provided at the hvac chase opening. Nail it at every truss with a minimum of three 10d common nails or four 10d box nails. (Three 16d common nails would be better because of the larger diameter, but the protruding nail point may be a problem for some builders.) To do its job effectively, the strongback must be tight against the vertical web.

At a minimum, use 2x6 lumber in the

Strongback Details



The strongback for a truss floor should be fastened to one of the vertical webs at the hvac opening provided at centerspan. Reinforce splices with a 4-foot-long member on the opposite side of the vertical web (middle). If you need to make room for a branch duct, you can leave a gap in the strongback and reinforce it with a 6-foot piece that catches four trusses (bottom).

longest size available to avoid splices. (You'll get added protection against vibration by using a 2x8, but you'll need to *double* the number of nails per truss.) There are no code details I know of for splicing strongbacks; one suggestion is to add a 4- or 6-foot 2x6 on the opposite side of the vertical web member in the area of the splice, as shown in the illustration.

Although strongbacks are not always necessary from the standpoint of structural strength, their benefit in reducing vibration far outweighs the cost to install them.

What Is Dry Rot?

Q. *I'm confused by the term "dry rot." It seems contradictory since rot occurs when wood is wet. Or is there a kind of rot that happens to wood that is too dry?*

A. *Preservation consultant John Leeke responds:* You are right; rot does indeed require water. Wood rots, or decays, when fungus organisms eat it. Three conditions must be present for the fungus to thrive: temperatures between about 40°F and 100°F, food (which is the wood itself), and a wood moisture content above 20-25%.

The presence of the fungus is a given because fungus spores are everywhere, carried about by the wind. Two common types of wood-eating fungus are "cubic brown rot" and "white rot." Cubic brown rot eats the cellulose component of wood, leaving the darker brown lignin component, which shrinks into characteristic blocky formations. White rot eats the lignin, leaving the light gray cellulose and covering the wood surface with a white mat of fungal fibers. Both types of rot are found throughout most of North America.

Rotten wood is often found in a dry condition and so is called "dry rot." But the wood had to have once been wet for the decay to occur. Another possible confusion arises with "water syphoning fungus." This fungus spreads by forming tubes through which it carries water to wood that is too dry. Syphoning fungus is common in the tropics and sometimes appears in the southern states along the Gulf Coast.

Housewrap Behind Vinyl Siding

Q. *Is it necessary to put housewrap behind vinyl siding on new construction?*

A. *Wood technologist Paul Fisette responds:* Many builders and material suppliers think that using housewrap under vinyl siding is a waste of money. I disagree. Housewrap is cheap insurance, for two reasons: It protects the building shell from the weather and it helps save energy.

Vinyl siding is a good siding material, but it is loose fitting and somewhat permeable to weather. Wind-driven rain can penetrate at overlapping ends, around windows at J-channels, at corner posts, at the intersections between siding and rake trim, and any other places where joints are involved. A smart installer should expect water to penetrate the siding at times; the housewrap provides a backup weather barrier that allows water to run down and out without penetrating the structure. Proper flashings should be used at doors, windows, and other penetrations, and the housewrap should overlap the tops of these flashings.

The second issue relates to energy performance. Studies have shown that air leakage is an important factor in heating and cooling losses; installing taped housewrap directly over wall sheathing is a good way to greatly reduce air leakage. If your budget allows, a layer of taped foam insulation, instead of housewrap, will not only reduce air leakage but also improve the conductive resistance of the wall.

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