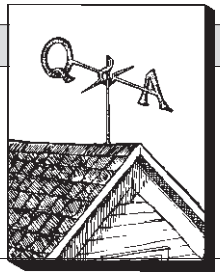
Exorcising Drywall Ghosts



by Henry Spies

Ghosts From the Attic

Q. *We have had trouble with cathedral ceiling rafters showing through the drywall after very cold winters. How can we prevent these ghost lines?*

A. The ghost lines show cold areas in the ceiling. A microscopic film of condensation occurs on these areas, and dust then sticks to the slightly damp surface. The ghosts should wash off if the ceiling is washed. Maintaining a lower relative humidity in the house will also reduce the problem.

If the rafters are showing through as dark lines, the insulation is probably not fitting tightly to the sides of the rafters, allowing cold air to flow down the sides of the rafters. This is difficult to cure in an existing structure, because the insulation is not accessible. In new construction, the ghost lines can be prevented by installing the insulation carefully. A continuous layer of rigid insulation installed between the rafters and the drywall will also eliminate the problem.

If the rafters show up as light lines, then cold air is getting between the insulation and the ceiling. This often happens at the eaves edge, when air from the soffit vents blows the insulation out of place or short circuits through the ends of the batts. Baffles at the bottom of the rafter bays will usually prevent the problem.

OSB Shear Panel

Q. *Can OSB be used for seismic and wind-resistant shear panels?*

A. While the building code official always has the final word, there should be no reason why OSB panels cannot be used in shear panels. They are structural panels, often with higher ratings than plywood of equivalent thickness. Of course, the manufacturer's specifications for the length and spacing of the fasteners must be followed.

Renovating Double-hungs

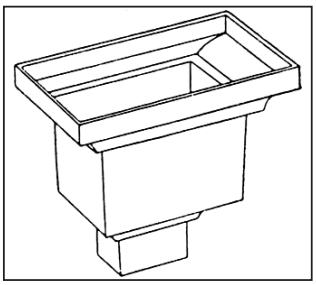
Q. *Do you know of any jamb liners for double-hung windows that would accommodate a balance system and weatherstripping? I would like to retain as much of the original appearance and detail as possible.*

A. The Window Fixer system, by Quaker City Manufacturing Co. (701 Chester Pike, Sharon Hill, PA 19079; 215/586-4770), uses an aluminum jamb liner with stainless steel spring weatherstripping for standard 1 3/8-inch double-hung windows. They have a spring balance system which can be used with their jamb liners, or the liners could be cut out to permit the old sash pulleys to be used. To install these liners, the inside stop and parting stop are removed, the jamb liners slid onto the sash, and the sash and liners put back into the finish frame against the outside stop. The inside stop is then reinstalled against the liner. The only place the liner shows is inside the jamb and at the parting stop.

Gushing Gutters

Q. *What is the best way to drain the water off a roof where two valleys (three planes) come together? Conventional downspouts don't seem big enough to handle the large volume of water that can run off here.*

A. A standard 5-inch or 6-inch gutter will probably not be able to handle the flow, even with splash guards. A leader box (see illustration) can be constructed to catch the flow from both valleys and the roof plane above. The downspout should be sized to provide 1 square inch of area for every 100 square feet of roof. A standard 2x3-inch downspout can drain 600 square feet, and a 3x4-inch spout can handle 1,200 square feet.



A leader box at the head of a gutter downspout can be used to collect runoff.

A second possibility is to allow the water to run off to the ground, where it is caught in a plastic-lined trench filled with coarse gravel and drained through an underground tile.

Foundation Vapor Barrier

Q. *We are planning to finish the interior of an old rubble stone basement. The inside of the foundation wall has been plastered. But to get a flat, insulated interior wall we are building a second wall using steel studs with rigid foam in each bay. Do we need a vapor barrier as well? If so, where should it go?*

A. I always recommend a vapor retarder, such as polyethylene film or foil-backed drywall, on the warm side of the wall. Since the interior wall will always be warmer than the stone foundation wall, there should be no problem with moisture evaporating from the foundation condensing on the back of the drywall or insulation. However, there could be condensation on the stone wall if interior moisture entered the cavity, so a vapor barrier is needed. If you are installing rigid polystyrene, this will act as a vapor retarder if it is well sealed to the studs with expandable foam. But this would be more difficult and costly than simply hanging polyethylene over the studs and securing it when the drywall is installed. ■

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