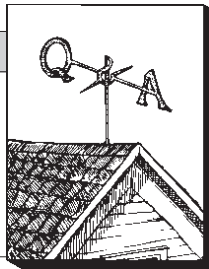


Vapor 'Barrier' Paints

by Henry Spies



Q. I accept the need for vapor barriers and realize that the only practical method in retrofit work is to use coatings. My paint distributor tried to sell me aluminum paint or alkyd undercoatings and threw the catalog at me when I started talking perm ratings. He called the technical-service people at Masury Paints, who said that Masury was working on a product (not yet released) that would meet government specs for perm ratings, but the company had nothing in the meantime. They also said that the product that Glidden markets as a vapor barrier does not meet these specifications. Could you please update us on the state of the art in vapor-barrier coatings and include a list of suitable products?

A. I am not sure what government specification for a vapor-retarder paint (new terminology—the lawyers have gotten to us) could apply to residential retrofit. However, any coating or material with a permeance of less than one perm is nominally regarded as a vapor retarder. From a practical standpoint, a coating with a permeance of 1.05 has about the same effect as one with a rating of 0.95, even though one "met the specifications" and the other did not.

We do not have the facilities for testing paints, and I do not know of anyone who has published test results of currently available paints. The reason we discontinued paint testing more than 25 years ago was that by the time any meaningful results were available, the formula on the market had been changed, even if the label hadn't.

The best recommendation I can make is to use two coats of semigloss or gloss alkyd-based enamel. The Glidden product also recommends two coats but is water-based for easier cleanup, and apparently produces about the same level of protection. ■

Is Superinsulation Overrated?

Q. I think infiltration control is overrated. Once a house is built to about one-half air change per hour, how much can the home owner save by going to superinsulation? Can this justify the expense?

A. In an 1,800-square-foot house, a half air change per hour accounts for about 233 therms of energy over the heating season. If the infiltration rate were one air change per hour, that figure would double. Therefore, the time and expense of building to the lower infiltration rate is usually justified.

In a house with "standard" insulation (which would have been considered superinsulation 20 years ago), the infiltration loss is about one-third of the total heat loss. In a superinsulated house, the heat loss through the

envelope is reduced but the infiltration loss stays the same, becoming more than half the total load in many instances. Is this justified? It all depends upon what you think the price of energy will be over the 50-plus years we expect the house to last. I think that a house that is not superinsulated may become unsalable in 20 years. ■

Gravity Loops

Q. In a two-story house with a full basement, there is a considerable delay in getting hot water from the water heater in the basement to the second-floor lavatory. I would like to install a gravity circulating loop to maintain the water temperature at the lav. Can it be done?

A. You can install a gravity loop by running a pipe up to a tee just below the faucet. The pipe should be at least 3/8-inch to minimize friction losses. The hot side should be connected as close to the water heater as is feasible, and it should be insulated. The return loop should connect near the cold-water inlet to the heater. The water at the lavatory should be at least warm after the first cupful, but the system probably will use more energy than the present system because of the continuous heat losses from the two pipes. Also, if the new pipe is copper and the old one is galvanized, dielectric unions should be used to connect the copper, to prevent electrolytic corrosion. ■

Energy Fortune-Telling

Q. How affordable do you think fuel will be compared to incomes for the next 15 to 25 years? Is fuel likely to become more or less affordable?

A. My crystal ball is just as cloudy as yours, but I think higher fuel prices in relation to other sectors of the economy are inevitable.

There is a finite supply of fossil fuels. As the ones that are easiest to obtain are used up, we will have to do more exploration and use more expensive recovery systems to extract those that remain. As we exhaust resources, prices will skyrocket unless—and until—new replacement technologies are developed. These new technologies are expensive in and of themselves. ■

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