

LETTERS



Foam Forms Speed Curing

To the Editor:

"Foam Foundation Forms" (12/93) was an excellent article and answered many questions raised by one of my current projects. I have just one minor clarification regarding curing.

Insulation does not cause concrete to cure at a slower rate as the article states. In fact, because the foam insulation traps the heat of hydration, the concrete cures faster and more importantly, retains moisture to cure longer, resulting in (as stated) greater strength.

Robert Randall, P.E.
Mohegan Lake, N.Y.

Cost-Plus Query

To the Editor:

I enjoyed your article on cost-plus contracts ("Working Cost-Plus," 9/93), but I felt unclear about the "guaranteed maximum cost" part of the article.

Where does this figure come from? Since the owner will want it low and the builder will want it high, is there a formula for arriving at a reasonable figure? Or is it totally arbitrary? Having a firm grasp on why a specific amount is reasonable for guaranteed maximum cost would help to sell the whole idea of cost-plus.

Doug Rowe
Sacred Space Construction
Davenport, Calif.

Sal Alfano responds:

In most cases, my guaranteed maximum cost (GMC) was a little higher than a fixed price for the same job, mainly because of the extra administrative costs. But cost-plus work is "sold" more on service than price, so it's important to explain to your customers everything that their money is buying.

In the first place, the GMC provides the same security as a fixed price, but the 50/50 split opens the door to possible savings, something that's not available with a

fixed price. And the invoices you submit with your requests for payment show your actual costs, eliminating the owners' fears that you are getting ahead in payments. Remember also that in a fixed price contract, contingency money built in to your price is payable by the owner whether or not the contingencies arise. But with a cost-plus contract, the owners save half of any contingency dollars not spent.

Finally, a cost-plus contract makes the owner a partner in the construction. It encourages the owner to cooperate with you to save money, instead of holding your feet to the fire every time you make a cost-cutting suggestion. And because cost-plus contracts are usually negotiated, not competitively bid, you can set a guaranteed maximum cost that everyone agrees with.

Greener Foam Great

To the Editor:

I am impressed that manufacturers of rigid foam insulation in this country have met or exceeded EPA guidelines for CFC releases into the environment ("Foam Insulation Grows Greener," *Eight-Penny News*, 11/93).

High R-values and a tight building are equivalent to less fuel used and dollars saved — a concept all customers love. However, our children need a friendly planet to live on and it is everyone's responsibility to contribute to that. Gold stars go out to the U.S. rigid foam industry and please, for the kids — keep hammerin' at it!

Jody Williams
Lambertville, N.J.

Use Blue Board For Skim Coat

To the Editor:

I would like to correct a small but important error in the article, "Interior Trim Tips" (10/93). Figure 1, "Using Plaster Grounds," shows a good idea for

top quality detailing on veneer or skim coat plaster walls. The drawing calls for "moisture-resistant drywall" for skim-coat plaster. Never use this product. The correct product is "veneer plaster base," such as Imperial gypsum base from USG or Kal-Kore from Gold Bond. Moisture-resistant drywall is used under tile in bathrooms and kitchens. Perhaps the confusion, which I have heard before, comes from the fact that moisture-resistant drywall has a green paper face and plaster base board has a blue paper face. The face papers and cores are very different and can not be interchanged.

Dean M. Russell
Mattituck, N.Y.

Tyvek Research Misinterpreted

To the Editor:

I am pleased you reported on DuPont's research in the article "Housewrap and Air Leakage: New Studies" (*Focus on Energy*, 12/93). I am concerned, however, that some of the opinions expressed by the author don't accurately reflect the substantial work that's been done in this area.

Housewraps like Tyvek address air leakage through walls. A builder, with the intent of completely sealing the building envelope, must also address leakage through floors and ceilings. Leakage in floors and ceilings tends to be through penetrations from light fixtures and hvac ductwork, so caulk, foam, and gasketing are probably the best tools to use. The article suggests that energy-efficient homes must have a continuous air barrier and be sealed on the inside with caulk and foam. While this approach is possible, the builder should consider the following drawbacks:

1. Sealing on the inside does not protect the wall cavity insulation from air infiltration caused by "wind-washing," where air enters the wall cavity from the exterior and exits at a different

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point to the exterior. Occupants don't feel a draft but the wall's thermal performance is reduced. To put this effect in very personal terms, it would be like wearing a sweater *over* a windbreaker, instead of the other way around. You might still block the wind but you wouldn't be nearly as warm and comfortable! Common sense tells people the right way to construct their personal "thermal envelope," and the same principles apply when building a house.

2. Wood framing typically has a moisture content close to 20% during construction and eventually dries to 8% to 10%. As moisture content is reduced, shrinkage occurs and can result in gaps in the caulk. Lumber that's wet from rain can also reduce caulk adhesion. So even if a high-quality caulk is used and applied properly, it is difficult to maintain the quality of the initial seal as the house "settles."

3. Efforts to measure the air leakage of homes sealed with caulk and foam have yielded a wide range of performance. This suggests that this method produces highly variable results that depend on the skill of the construction crew. While proper installation is also important with housewraps, the large roll covers many air leakage areas within its width and it is easy to see whether a housewrap has been installed properly prior to siding installation. In contrast, missing caulk in the wall will never be noticed until the first energy bill shows up.

I would also like to clear up some misconceptions around cost savings. The article implies that using a housewrap in Boston with 80% efficient gas heating doesn't offer much value. Our research proves otherwise.

The unwrapped houses in our study averaged 0.52 air exchanges per hour (ACH). But these homes are already relatively tight. Typically houses throughout the United States are more likely to leak in the range of 0.8 to 1.0 ACH, which is nearly twice as leaky as the houses in our test. On homes with ACH numbers like this, the benefits of using Tyvek are really significant. In fact, the leakier the house, the greater the benefits from using Tyvek. For instance, a user of Tyvek Housewrap on a 2,500-sq.-ft. home with a starting leakage rate of 0.8 ACH in Boston could expect an annual savings of roughly \$133 for

heating and cooling (with gas heating at 80% efficiency and 57 cents/therm). Using the same criteria with electric resistance heating produces an annual savings of roughly \$430 and 8.7 cents/kwh with Tyvek.

There were two other misinterpretations of our data. First, our research shows that air leakage in the walls occurred at several locations — through the baseboard area, at the electrical boxes, through the holes drilled in the studs for wire routing, and through the seams in the exterior sheathing. It is incorrect to assume that Tyvek Headerwrap alone would serve to significantly reduce air flow through the wall. Air leakage takes the path of least resistance, and once a path is blocked, the pressure is applied to other openings in the wall. When properly installed, Housewrap, without Headerwrap, can effectively stop air leakage across the entire wall surface as well as the bottom plate/sub-floor areas.

Second, the statement that the air-tight drywall approach (ADA) performed better than housewraps in our testing is not true. In some cases, ADA outperformed other housewraps, which have poor or low resistance to air penetration. But Tyvek always outperformed ADA and the other housewraps in thermal performance.

DuPont never suggests that a housewrap is all you need to protect a building from air leaks. We do believe that Housewrap is an important part of a thermal envelope system and our position is in line with the general recommendations of the building science community. We'll continue to work with other manufacturers, code bodies, and utilities to expand our knowledge of air infiltration, and to work toward the development of practical, effective construction practices based on sound technical data.

David C. Jones
Tyvek Construction Products
Wilmington, Del.

Keep 'em coming.... We welcome letters, but they must be signed and include the writer's address. *The Journal of Light Construction* reserves the right to edit for grammar, length, and clarity. Mail letters to JLC, RR#2, Box 146, Richmond, VT 05477.