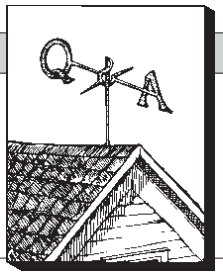

R-Value Queries

by Henry Spies

Q. *What is the R-value of a wall consisting of brick veneer, half-inch waferboard sheathing, full-thickness fiberglass batts, vapor retarder, and half-inch drywall? What would it be with vinyl siding?*

A. The construction would have an R-value of about 14. Unless an insulating backer was used with the vinyl, the insulating value would be almost the same as that of brick. The nominal R-value for face brick is 0.11 per inch of thickness, giving 0.44 for a nominal brick. Vinyl siding without a backer is in the range of 0.7 or 0.8. Because of the thermal bridges involved in any construction, differences of less than R-1 are negligible and would be very difficult to measure.

Moisture and Thermal Bridging

Q. *My calculations on R-value per dollar tell me that, even including the lost square footage, a 2x8 wall is more cost-effective than a 2x4 or 2x6 wall with some rigid insulation. But will I end up with moisture problems on the interior of such a wall due to thermal bridging?*

A. There should be no problem with thermal bridging, because the minimum R-value at the 2x8 should be about R-10, which is far higher than that of the windows. Building the eight-inch wall with staggered 2x4s would eliminate the problem and certainly be easier to work with, and it might be less expensive than using the 2x8s as well.

There should be no problem with thermal bridging in a 2x8 wall, because its minimum R-value should be about R-10, which is far higher than the R-value of the windows.

Vinyl-Siding Problems

Q. *I've been hearing a lot about problems caused by foil-faced sheathing under vinyl siding — that the foil can reflect the heat to the vinyl and cause it to pull off. How big a problem is this, and what can be done about it?*

A. We have not had any reports of this type of problem with vinyl. If the siding is pulling off, the probable cause is the use of nails that are too short to penetrate at least one inch into the stud, or the nails may be missing the studs entirely. The foam sheathings are not a nail base. Vinyl does expand and contract with temperature changes more than other siding materials, and if the nail is not into the stud, it will buckle and pull the nails.

Terminating Termites

Q. *Termites are becoming more of a problem in our area. What should I look for in an applicator in terms of technique and chemicals used? Are there any termite-shield systems that work well enough to avoid the use of chemicals?*

A. A good applicator should be a member of the National Pest Control Operators Association, licensed by the state to handle the chemicals involved, and have appropriate insurance. The choice of chemicals will vary with soil type and the situation. Many of the chemicals that have been used for years now are banned by the Environmental Protection Agency.

Chlordane, aldrin and dieldrin may still be used in certain situations. Dursban is one of the safer ones, but its effects may last only a few years. Different chemicals are used to treat the soil prior to and during construction than those that are used to treat existing homes. For example, many operators will refuse to treat an existing slab house that has heating ductwork under the slab because of the possibility that the chemicals might enter the ducts and contaminate the house.

Termite shields are great breeders of false confidence. A termite can go through a crack as small as 1/64 of an inch, and all laps and holes (around foundation bolts, etc.) must be sealed. A proper shield should extend two inches beyond the interior and exterior finishes; not only would most home owners consider this unsightly, but it is almost impossible to accomplish at porches and adjoining slabs. The only function of termite shields is to force the termites to build a tunnel *around* the shield so they can be seen and treated.

Finally, I should point out that all these comments refer only to subterranean termites — not the flying termites prevalent in the South or the Formosan termite that is making coastal inroads. ■

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