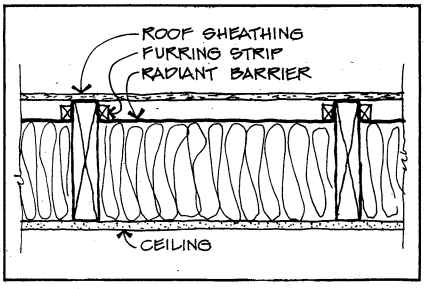
QUESTIONS & ANSWERS

Cold Shoulder on Foil

Q: In my proposed cathedral ceiling detail [drawing] I want to use a reflective foil between the insulation and the roof sheathing to double as a radiant barrier and vent liner. Is the barrier in a useful place?—*James French, Suffern, N.Y.*



A: The foil is in the right place to block radiant heat across the airspace. But there are some other problems. First, radiant barriers are not really cost effective in cold climates such as yours. Their primary use is to reduce cooling loads in hot climates. Second, in winter a continuous layer of foil above the insulation creates a cold-side vapor barrier, vulnerable to condensation on the underside.

Most builders and designers feel that a lining material is not necessary in the airspace except at the eaves. At the eaves a rigid baffle is recommended to keep the insulation in place and keep the wind out of the insulation. For extra protection from wind, some builders line the space with Tyvek (see *Better Building Details*, 6/86).

Foundation Foam Protection

Q: I will be insulating a foundation with Styrofoam. I understand there are masonry finishes available that can be applied directly to the foam or to an intermediate mesh, and that such a surface will hold up to weather exposure. What finishes are available?—*Thomas F. Harter, Oakland, Calif.*

A: There are several ways to protect rigid foam foundation boards, ranging from pressure-treated plywood to factory-applied stucco finishes. One pre-finished panel is Thermboard, a ¾-inch Styrofoam panel coated with a fiber-resin compound that has a a stucco-like appearance. It costs around $1.47 per square foot in the Wisconsin area where it is made. Thermboard is distributed by Georgia Pacific Corp., 133 Peachtree St., Atlanta, GA 30348. Another pre-finished foundation insulation is StyrofoamFP Panels, distributed by Dow Chemical and available at many lumberyards. The finish is a cementitious coating that looks something like concrete.

For a field-applied finish, you can trowel on your own stucco to the foam over expanded metal-lath (see Building It Right, 7/83), or brush on a finish designed for this purpose, such as Styrofoam Foundation Brush-on Coating (also available from Dow). It comes in a kit consisting of a dry polymer cement mixture, liquid additive, and fiberglass reinforcing tape. You mix the components with water and apply directly to the foam, which is scratched up to promote good adhesion. It dries to resemble concrete. The cost is about 40 cents per square foot.

Superinsulation Retrofit

Q: Where can I obtain data on adapting superinsulation techniques to existing structures?—*L. Benson, Woodland, Maine*

A: The goals of superinsulating an existing building are the same as for new construction, but the problems are different. The biggest challenge is making the vapor barrier and insulation continuous between floors and between rooms.

Probably the best source of information we've come across is *Super Insulated Retrofit* by Brian Marshall and Robert Argue, published by Renewable Energy in Canada, 107 Amelia St., Toronto, Canada M4X 1E5. Also good, particularly on theory, is Charles Wing's *From the Walls In*, Little, Brown and Co., Boston. A third source, a collection of related pamphlets bound into a three-ring binder, has one very good pamphlet on retrofitting: *Major Energy Conservation Retrofits*, National Center for Appropriate Technology, P.O. Box 3838, Butte, Mont. 59702.

Address your questions about articles and issues covered in *Progessive Builder* to Q&A, *Progressive Builder.*, P.O. Box 470, Peterborough, N.H. 03458-0470. If you want a reply, send a self-addressed stamped envelope and a member of our staff will respond. Questions and answers of general interest will be printed in the magazine.