

Ask Jon Eakes

BASEMENT: BATTS OR RIGID FOAM BOARDS?

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Fiberglass batts, mineral wool batts and all kinds of rigid foam boards are commonly used to insulate basements both inside and outside.

One of the critical rules when insulating basements on the inside is that there must be no air space between the insulation and the wall. (see no air space behind indoor basement insulation.) If the wall is uneven, this will eliminate the use of rigid foam boards. If you build a stud structure, be sure that the batts are tight up against the foundation wall with no air space -- not even an air space behind the studs.

If you want to build a stud structure, you will be insulating with batts, because it is just not practical to cut foam boards to fit between studs. You will be able to insulate to any R level you want -- just stand the studs far enough from the wall to accommodate the necessary batts.

Two systems of rigid foam panels are now available that make a cost effective competition with batts because they eliminate the stud structure. One has metal "U" channels that screw to the concrete wall, holding the foam in place -- the other has 1x3 lattes that fit into a recess in the panels, screwing to the concrete wall as well. Both methods provide a "stud" structure on 24" centres for attaching the drywall. My preference is for the wooden lattes because it is easier and more sturdy for hanging heavy cupboards or shelving later. Both of these systems use extruded polystyrene, giving more R per inch than the batts and eliminating the need for a vapour barrier.

Bead board can be glued to the wall (with latex adhesive) and drywall can be glued to the beadboard -- but you still need a top and a bottom board screwed to the wall to give the drywall a mechanical attachment in case of fire. This material has the same R value as batts and requires a vapour barrier as well. To my mind the other alternatives are much more interesting.

On the outside of the basement wall, extruded polystyrene, high density bead boards or special fiberglass or mineral wool rigid panels can be used. Low density bead board is not recommended as it will collect water. The fiber panels have the added advantage of being specially constructed to act as a drainage layer as well. If you do not go all the way to functioning weeping tiles, do not use the fiber panels, they will fill up with water, but you can use the plastic insulations. If you do go all the way to the weeping tiles, you can use any of the materials intended for "in-ground" use. (check out Interior or exterior insulation? for above-ground protection for any basement insulation)

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