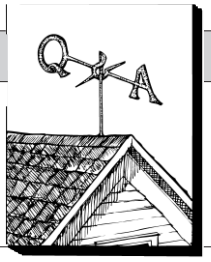
Insulating Walk-Out Basements



by Henry Spies

Q. *What is the best way to insulate the footing, foundation, and slab on the walk-out side of a basement?*

A. Probably the easiest way is to pour the footing and insulate the inside of the stem wall with 2-inch-thick extruded polystyrene foam (see illustration). The insulation should extend at least 2 feet below grade, and the top can be tapered to a thin edge so it is concealed by the interior trim. This works particularly well if there are heating ducts in the slab near the perimeter.

An alternative is to insulate the slab perimeter, extending the insulation at least 2 feet from the edge. Again, where the insulation turns up along the perimeter, it should be tapered so it can be concealed.

A third option, of course, is to insulate the outside of the foundation with extruded polystyrene. The portion above grade should be protected with stucco or foundation-grade pressure-treated plywood. However, this system should not be used if the walls have a masonry veneer.

Non-Asbestos Pipe Wrap

Q. *What material can be used to re-insulate steam pipes after the old asbestos insulation is removed?*

A. The most common insulation now used on steam pipes is molded fiberglass sleeve with a plastic or fabric cover. This material is widely available from plumbing and heating supply houses. The fiberglass sleeves come in precut lengths for different pipe diameters (measured as inside diameters), and usually have self-sealing tape attached to seal the cover.

To Felt or Not?

Q. *Is roofing felt necessary under asphalt shingles?*

A. Under asphalt shingles, #15 felt serves three purposes: it provides a temporary cover for the roof until the shingles go on; it protects the shingles from being damaged by any pitch that bakes out of the sheathing; and it provides a second line of defense if any shingles blow off. Considering the relatively low cost, it is cheap insurance for the last reason, even if the first two reasons don't apply.

In cold climates, where you are uncertain if the ceiling insulation and roof ventilation is adequate, there is a strong likelihood of ice damming. In this case, install an ice and water shield along the roof edge, or two layers of #30 felt bedded in asphalt.

Code Quandary

Q. *We are about to begin construction on an addition. Code requires venting the crawlspace under the wood floor. However, the foundation will be surrounded by concrete sidewalks on three sides, limiting the use of passive vents. Are there other alternatives for venting?*

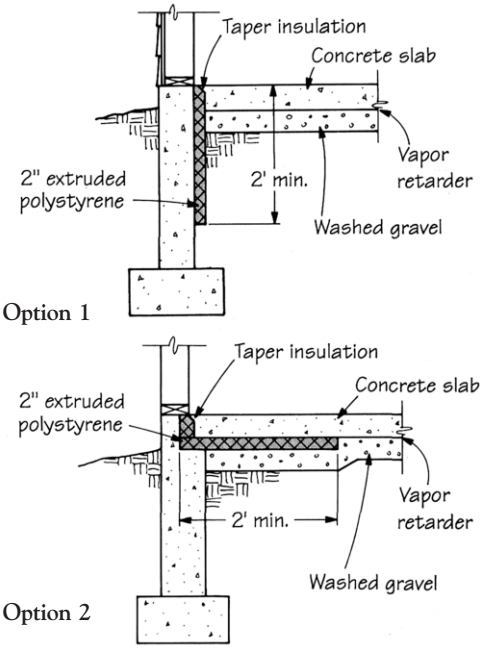
A. Everything depends on which section of the code you are reading. The 1989 and 1992 editions of the CABO One and Two Family Dwelling Code requires that foundation walls extend at least 8 inches above the finished grade to prevent moisture problems from splashback that can rot wood siding and framing. An exception can be made if the house is sided with a brick veneer. In this case the foundation must extend at least 4 inches above grade. So, if you are planning on wood siding, there should be enough room above finish grade (in your case the concrete flatwork) to install crawlspace vents. If you have brick veneer, you may have to vent into the band joist area with short ducts into the crawlspace.

Most codes require at least one square foot of free vent area for every 150 square feet of floor area. Remember, the floor framing must be at least 18 inches above the floor of the crawlspace, or treated wood framing is required.

Alternatively, the code often allows underfloor ventilation by an "approved mechanical means." However, approval of any system will require a lengthy code review, which will probably require design and certification of the ventilation system by an engineer. ■

Henry Spies is a building consultant formerly with the Small Homes Council-Building Research Council of the University of Illinois. Questions should be sent to him at JLC, *RR #2, Box 146, Richmond, VT 05477.*

Walk-Out Basement Insulation



Two insulation options. *To insulate the walk-out side of a basement, install 2-inch-thick extruded polystyrene on the inside of the stem wall after the footing has been poured (Option 1). An alternative is to insulate the slab perimeter at least 2 feet in from the outside edge (Option 2). In either case, the top edge of insulation can be tapered to a thin edge so it is easily concealed by trim.*