Q The article "Sealing a Chimney Chase" (Oct/17) pertains to a brick chimney. How would I seal the chase for an existing double-wall metal chimney?

A Matt Damon, owner of Penobscot Home Performance, a weatherization company based in Bucksport, Maine, responds: The procedure for sealing around an existing cylindrical double-wall metal chimney is similar to that for sealing around a brick chimney. Be aware that metal-chimney companies make materials to air-seal *new* chimneys, but using them would require dismantling an existing chimney.

Start with a rectangular piece of 26-gauge sheet metal large enough to cover the framed chase. On the sheet, locate and draw a circle that has the same diameter as the outside of the pipe and cut it out.

As with a masonry chimney, take care to seal any gaps in the chase that are more than 2 inches away from the pipe, using rigid foam and one-part foam sealant. Note that double-wall pipe manufacturers may rate their products for zero clearance to combustibles, but I would try to maintain a gap of at least 2 inches to be on the safe side.

Cut the sheet metal in half and slip it around the pipe, as shown below. Screw the metal to the framing, sealing it with high-temperature caulk at the framing and where the metal contacts the pipe. To seal the edge of the metal where it was cut in half, bridge the caulked seam with a small strip of the same sheet metal.

Even if the pipe is rated for zero clearance, I would recommend wrapping it with 2-inch Roxul batts. Blown-in cellulose treated with borate is fire-resistant, but the fireproof Roxul would provide some additional peace of mind.

Air-Sealing Retrofit for a Double-Wall Metal Chimney

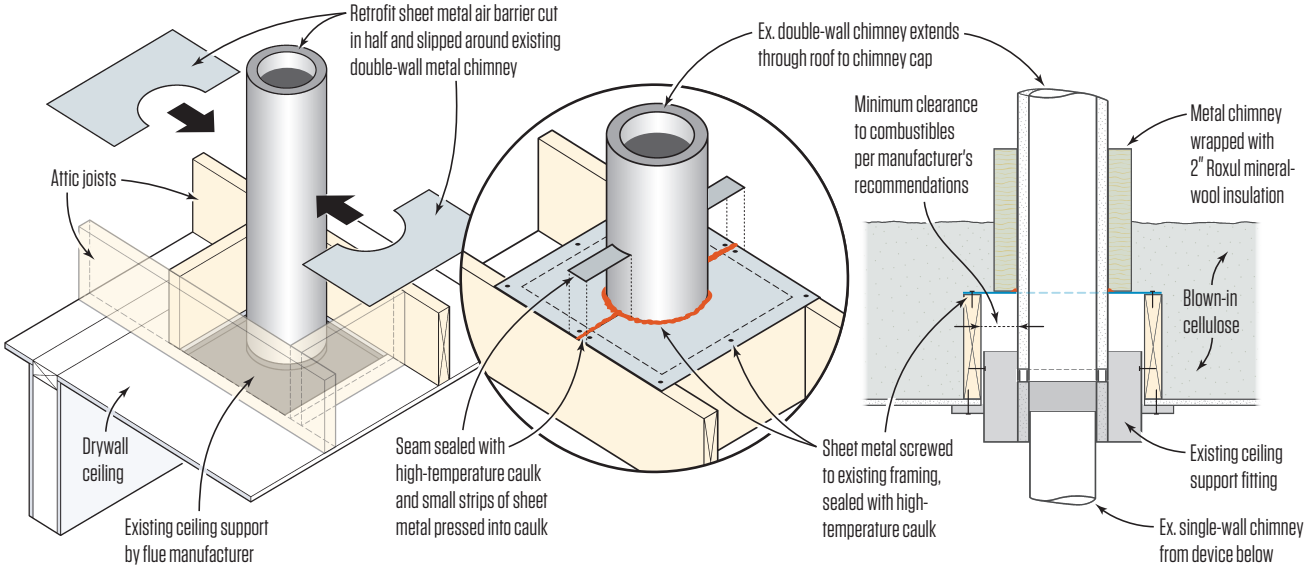

Illustration by Tim Healey

Q What are the pros and cons of a block foundation vs. a poured foundation?

A Nate Eldon, owner of Eldon Builders, a custom home-building and remodeling company in Cape May, N.J., responds: A lot depends on your region. In southern New Jersey, I've built both block foundations and poured foundations, but the most common foundation in this area is of concrete block (CMU). Concrete block is readily available and doesn't take much of an investment on the part of the foundation contractor—a mixer for the mortar, some shovels, trowels, and levels seem to be all that's needed.

Block foundations have good load-bearing strength, but their lateral strength is limited unless the block is fully grouted with rebar (which is rarely done). Because of high water tables and flood zones, most of our foundations are crawlspaces with short walls, although certain lots in some flood zones require taller walls. In these flood zones, local building codes do not allow much of a change in elevation from the inside of a foundation to the surrounding grade, so fully excavated basements are not possible.

Outside of flood zones, I have done a few poured-concrete basement foundations. Poured walls in this area are typically 10 inches thick with rebar 2 feet on-center, so they have much more lateral strength than a typical block foundation. When walls are tall, pouring is much faster than using block. Block is more labor intensive—especially as the height of the wall increases. For a poured wall, extra height just means taller forms and more materials. Also, the porosity of CMUs makes waterproofing more difficult in a full foundation.

Costs vary from region to region, but in this area, poured stem-wall foundations cost about 20% less than block foundations of the same height. In my most recent experience, an 8x16 CMU foundation went for about $6.25 per square foot of wall compared with about $5 per square foot for 10-inch-thick poured walls. Tall CMU walls would likely require grout and rebar, so any cost comparison for them would go out the window.

Although poured concrete makes for a superior foundation wall, in my area, few foundation contractors have invested in the forms. A poured-wall contractor based nearby told me that he had $200,000 invested in forms; it's not an easy business to get into without financing. Also, the complex foundations in flood zones require flood and air venting, pre-formed beam pockets, and penetrations that are more easily executed in a block foundation; a poured foundation would call for more diligent layout and installation management.