Q&A

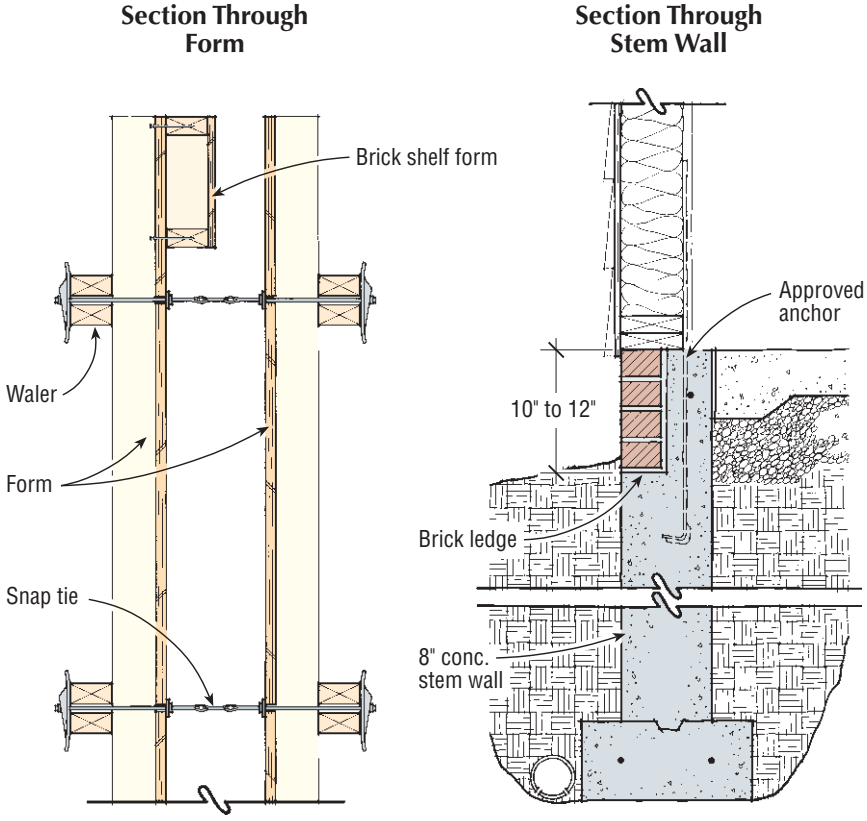
Forming a Brick Shelf in a Concrete Foundation

Q. *I'm planning to form a simple 4-foot stem wall foundation for a single-story garage using plywood, snap ties, and walers. It needs to have a brick ledge for the top 10 to 12 inches, which will show above grade. What's a simple, effective way to do this? Should I transition from a 10-inch wall, or can I use an 8-inch wall and reduce the thickness at the top? Would rigid foam board make a good form?*

A. *Jay Meunier responds:* Sometimes Styrofoam is used for forming pockets in complicated areas because it's so easy to shape. But it's fairly costly and has to be handled very carefully when you remove it from the formwork if you plan to use it a second time. A simple, inexpensive way to form your brick shelf is with 2x4s and 1/2-inch plywood (see illustration, below). Make a short "wall" with a top and bottom plate and uprights every 18 to 24 inches and skin it with the plywood. It's easiest to build the shelf form separately, then nail it into place as the forms are set.

Unless you have design or loading requirements necessitating a 6-inch stem in your wall, an 8-inch wall will work fine to carry a 4-inch brick shelf. The 4-inch stem makes it a little more cumbersome to place concrete in the wall, especially if it contains a mat of rebar, so plan on the pour taking a little longer than usual. When placing the concrete, consolidate the concrete underneath your brick shelf by using a concrete vibrator or rapping your formwork with a mallet. This will give the shelf area a clean, square edge and setting surface.

Jay Meunier *ran his own concrete contracting business for many years, and is now an estimator with Pizzagalli Construction in Burlington, Vt.*



Buildup in Shower Drains

Q. *Recently I've run into a couple of incidents where a crystallized white substance has formed on the shower floor and in the drain. In both cases the showers have mud-set floors and are entirely tiled. The water is from a public source. In one case, the drain was almost entirely blocked. To clean it, we had to take a screwdriver and chip it away. Is this a chemical reaction of the tile grout with cleaning or shampoo products?*

A. *Michael Byrne responds:* There are a couple of possible culprits. The first is efflorescence, which occurs early in the life of a mortar bed installation when minerals from the sand-cement-lime mix get deposited on the tiles. It usually happens because too much of a particular ingredient — hydrated lime or Portland cement, for example — has been used. The shower water brings salts and minerals to the surface of the tile, and a white deposit is left behind when the water evaporates. If materials within the mortar bed, adhesive mortar, or grout are the problem, the efflorescence should go away after 28 days — the curing period for Portland cement products.

Efflorescence can also be caused by salts or minerals being carried by an outside source of water. This happens frequently when ground water seeps through a foundation wall or slab. The

cure here is to stop water before it can enter a structure.

The buildup you're seeing might also indicate that the weep holes in the shower drain are clogged. If the water moving through the mortar bed to the weepholes can't exit, the mortar bed will become saturated with water that will wick upwards into the wall setting bed materials, or through the floor tile grout joints where it evaporates and leaves its mineral cargo behind on the surface of the tiles.

Hard water is another possible explanation for the buildup. You mentioned the water is from a public source, so if the water is hard, it would be common knowledge. Evidence of hard water is easy to find: Look for deposits and crust on showerheads and tub spouts, and for visible waterline marks around the inside of toilet bowls. The best solution is to install a water softener; otherwise, the buildup will continue and may eventually clog the shower drain's weep holes.

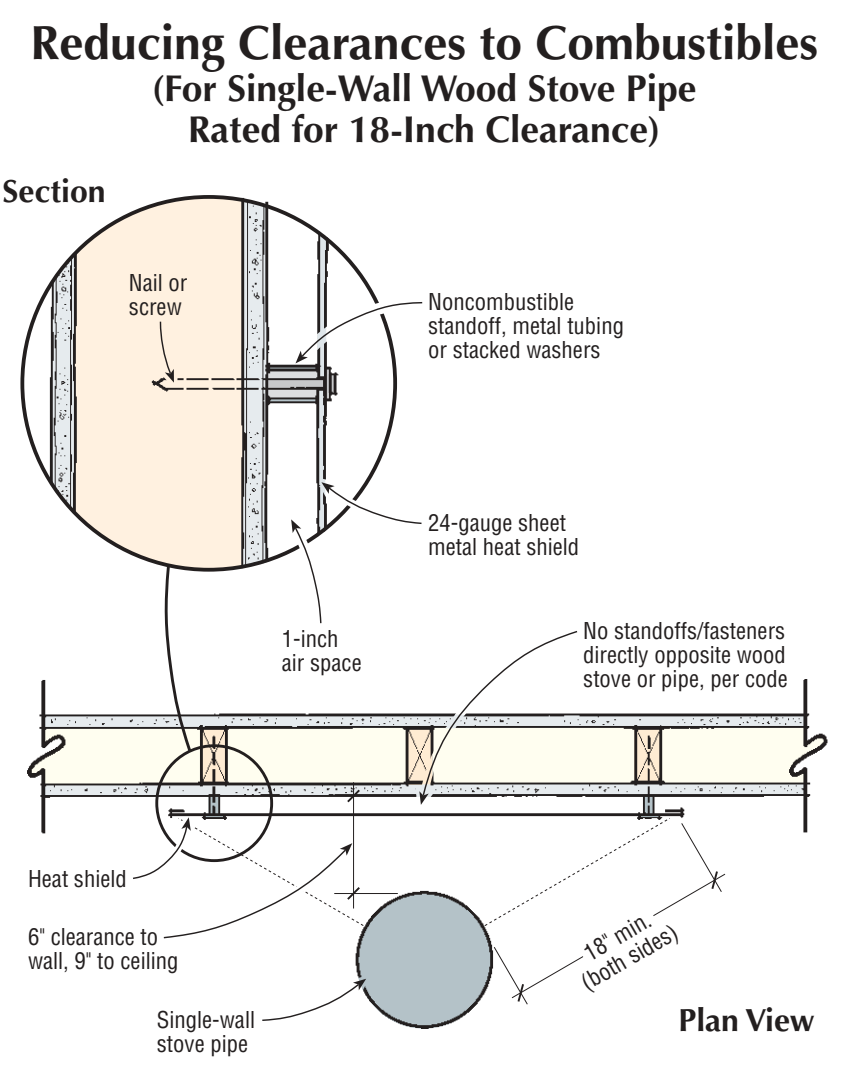
Cleaners strong enough to remove lime, salt, or other mineral deposits, yet safe enough for use with tiles are available from most tile supply stores.

Contributing editor ***Michael Byrne*** *is an expert tilesetter and consultant in Los Olivos, Calif.*

Reducing Clearance to Woodstove Pipe

Q. *Can I use type X "fire code" gypsum board to reduce clearances to combustibles for a woodstove pipe? For example, could I attach a layer or two of gypsum board to the side or bottom of a nearby cabinet to reduce the required 18-inch clearance?*

A. *Don Jackson responds:* No, you can't use gypsum board to reduce clearances from combustion appliances and vent pipes. You may be thinking of the use of drywall in firewalls and other fire-resistive assemblies, which are intended to slow the spread of fire, not to prevent initial combustion.



You'll need a heat shield to reduce clearances to a woodstove pipe. One of the most common is a piece of 24-gauge sheet metal, attached to the nearby wall or ceiling with standoffs so that there's a 1-inch air space behind it (see illustration, above). If properly installed, this can reduce an 18-inch single-wall pipe clearance to 9 inches overhead and 6 inches on the sides and rear, according to the *IRC*. You can also add a protector shield to the pipe itself.

Another option would be to upgrade to a double-wall pipe. For example, Simpson Dura-Vent (800/835-4429, www.duravent.com) makes a double-wall stainless-lined pipe that is rated for 6 inches to combustibles on the sides and 8 inches above. This is available in a black finish and might look better than a heat shield.

Most codes include a chart (see *IRC* Table M1306.2, for example) that lists several options in addition to the sheet-metal shield, but none of the other options is as simple. Check your local code for specifics, and make sure you look at the listed clearances for your woodstove. To have an approved installation, you've got to meet those requirements, too.

Don Jackson *is editor of* JLC.

Got a question?
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