

A Better Shower Waterproofing System?

by David Sorg

Though it's the tile that usually gets all the attention, the key ingredient in a custom shower is really its waterproofing system. When I built a tiled shower in my own renovated 1898 Victorian home, I had a couple of major concerns: I was worried about the effectiveness of standard membrane-type systems, and I wasn't eager to hang a lot of backerboard or to mix and haul a quarter-ton of deck mud. Thus, I was receptive to any alternative approaches that could save me time and hassles on the job while delivering reliable long-term waterproofing.

My research led me to Schlüter-Systems (800/472-4588, www.schluter.com), a manufacturer of several innovative tile-installation products that have received wide acceptance in Europe. Of particular interest to me was the company's Kerdi-Drain (\$89 list), which is designed in such a way that the floor's waterproofing membrane attaches to a bonding flange at the top of the drain. Unlike a standard clamping ring drain, there's no fussy connection at the middle of the drain and no weep holes to clog. Available in PVC or ABS plastic, the drain has a stainless steel grate (other anodized finishes are also available) that mounts to vertical and lateral adjusting collars. This makes it easy to accommodate different tile thicknesses and align the grate with your tile layout. Also, the grate can be tilted, so you don't have to worry if the drain gets installed slightly out of plane. Because the grate is square rather than round, fewer tile cuts are needed, and they're straight instead of curved.

The drain is designed to be used in conjunction with Schlüter-Kerdi (about \$1.65 per square foot), a soft, relatively thin 8-mil polyethylene membrane covered on both sides with a spun fab-



It may look traditional, but this 4-by-8-foot shower was built using lightweight EPS floor panels and an innovative drain and waterproofing membrane system from Schlüter-Systems.



The Schlüter Kerdi-Drain is designed to be used in conjunction with a waterproofing membrane that adheres to a fleece-covered bonding flange at the top of the drain. The drain's square grate can be tilted and adjusted both laterally and vertically.

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ric. Unlike other waterproofing membranes, which require solvents to connect sections, Kerdi is simply bedded into regular thinset mortar. Joints are made by lapping the membrane by at least 2 inches, using unmodified thinset mortar as the bonding agent. The 1-meter-wide membrane, which comes in 10- and 30-meter lengths, can be installed horizontally or vertically; when used with the Kerdi drain, it is bonded to the top of the mortar-bed floor instead of sandwiched within it. Another advantage of the product is that it can be installed right over regular drywall — it doesn't require a cement-based backerboard substrate.

This system definitely simplified wall construction in my shower. After framing, I used standard drywall in all the areas to be tiled; for the wall areas above the tile and for the ceiling, I used Georgia-Pacific's DensShield (800/225-6119, www.gp.com), an acrylic-faced gypsum panel that acts as a moisture barrier. DensShield's gray acrylic face can be tiled or skim-coated with plaster and painted. Like drywall, it's lighter, easier to handle, and less expensive than cement-based backerboards.

A lightweight shower floor. Instead of a heavy multilayer mortar bed, I used a set of Fast Floor presloped expanded polystyrene panels (Curb Blocks, 801/572-9394, www.curbblocks.com) as the substrate for my shower's floor tile. I chose the Fast Floor brand because it was the only one that could accommodate my shower's 8-foot width. Available from a number of manufacturers, these lightweight EPS panels cut to size easily with a handsaw, yet have enough density and compressive resistance to support a tiled floor. (They're rated at 50 psi.) While a conventional membrane can be placed over the panels and a mortar bed floated on top, I planned to simply bond the Kerdi to them before setting my tile.

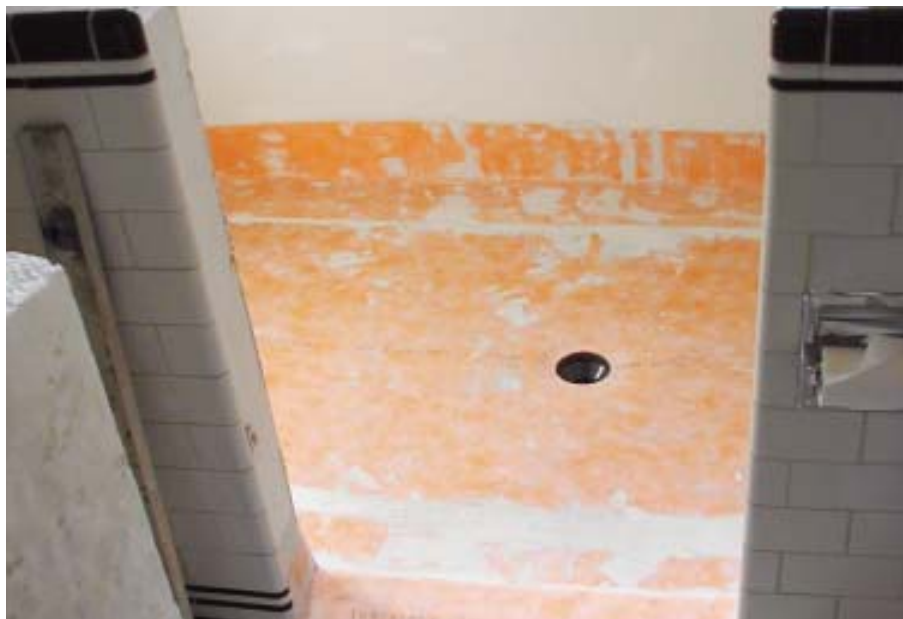
I started with a flat subfloor of 3/4-inch plywood screwed and glued to



The Kerdi waterproofing membrane installs directly over standard drywall, so tiled showers don't need backerboard or a separate membrane. The author installed presloped EPS floor panels instead of a site-built mortar bed, bonding 1/4-inch-thick backerboard to the subfloor with thinset to provide a stiff, smooth base for the panels.



After bonding the Kerdi drain to the EPS base with thinset mortar and allowing it to set (left), the author applied thinset to the rest of the shower floor, then bedded the Kerdi membrane firmly in the mortar, lapping up onto the walls about 6 inches (below).



floor joists on 12-inch centers. Since I didn't need to worry about building a sloped subfloor for drainage, I bonded 1/4-inch Hardibacker (James Hardie, 888/542-7343, www.jameshardie.com) to the plywood subfloor with thinset and fasteners. This added a little extra stiffness to the floor system — and it allowed me to perfectly level the surface to provide uniform support for the EPS panels, which I glued to the backer-board with thinset.

To install the drain, I placed a small mound of thinset mortar in the center of the installed EPS panels, then embedded the drain in thinset and tamped it level. (You can also use the Kerdi drain with a mortar-bed floor, in which case you would embed the drain in deck mud at the same time you were floating the floor.)

Next, I spread mortar onto the wide drain flange and the floor with a 1/4-inch by 3/16-inch notched trowel, being careful not to knock the drain out of position, and then laid a section of Kerdi membrane on top. Using the smooth edge of the trowel, I bedded the fabric into the mortar, working air pockets from the center out toward the edges. When I was working on top of the EPS, I knelt on scraps of rigid insulation so that I wouldn't dent the foam or pull the fabric away from the wet thinset.

I precut the membrane so that I could run the fabric up the walls about 3 inches above the height of the curb, same as you would with other types of shower pans. However, given the fact that the floor had seams (the membrane wasn't wide enough to cover the entire shower floor), I'm not convinced this step was necessary.

Because the thin fabric folds nicely, it was easy to form inside corners, and with the thinset behind it and between the folds to hold it in place, no stapling was necessary. (Schlüter also offers pre-cut inside and outside corners, pipe collars, and special rolls of membrane for



floor-wall joints and expansion joints; I didn't use any of them, but they would be useful in building more complex showers.)

At this point, I could have continued laying the membrane on up the walls, but instead I decided to lay the floor tiles first, so that I would have a rigid surface to walk on while working on the walls.

Quick wall work. After the floor tile had set up overnight, I covered the shower floor with a protective plastic sheet and continued laying more Kerdi on the walls. This is when I discovered that the leg of my stepladder had dislodged one of the floor's 1-inch hex mosaic tiles and put a small dent in the EPS. While the mishap didn't damage the membrane and was easily patched, it made me more cautious about point loads on the tile, particularly before it was grouted.

As I worked my way upward, I was careful to overlap seams by at least 2 inches, as the instructions advised, and made sure the membrane was always fully bedded in mortar so there weren't any air bubbles. Schlüter makes pipe

The Kerdi polyethylene membrane is covered on both sides with fleece webbing and can be bonded to itself or other surfaces with thinset mortar. That makes it easy to waterproof complex shapes — like these window wells — before tiling.

collars, but for my two shower heads and shower valves, I simply slit the fabric, filled the openings flush with thinset, and troweled it out smooth around each penetration. Despite the fact that my shower features a couple of wall niches and a pair of deep window wells, the wall membrane went up very quickly.

Once I had allowed the thinset to dry overnight, I proceeded to tile the walls conventionally, troweling thinset directly on top of the Kerdi membrane.

Although I didn't do a materials cost comparison of the Schlüter/Curb Blocks system vs. a cement-board/deck-mud system, I am certain that the labor savings were significant. I don't notice any difference in the feel of the tile underfoot, except that the floor seems to warm up quite quickly. Best of all, I believe this system offers an easy-to-install alternative to conventional waterproofing membranes, which seem to be notoriously difficult to get right.

David Sorg is a professional wood finisher in Denver.

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by Dave Holbrook

STORAGE SOLUTIONS

Sort and Stash. One of the habits of highly effective people, I imagine, is to have a place for everything and to put everything in its place. For those folks, SieMatic's cabinet organizers could become downright addictive. The door-mounted, height-adjustable *MultiMatic* foil-wrap dispenser and adaptable shelf storage system are two of the 22 highly effective storage aids designed for this maker's S-Series cabinetry. Priced by component.

SieMatic, 800/765-5266, www.siematic.com.



Steal and Stow.

If your clients are willing to retire a broom closet or borrow space from an adjacent room, a custom walk-in pantry is a great kitchen-storage idea. Trick out the interior with custom shelving and distinguish the deal with a *Pantry Series* door, available in several styles and widths, at retail prices (set by dealer) between \$340 and \$450.

Simpson Door,
800/952-4057,
www.simpsondoor.com.



Stack and Stuff.

Pantry cabinet design has evolved over the decades from endlessly unfolding tall cabinets to giant-capacity, open-sided roll-out shelves. Case in point: the innovative *Base Super Chef Pantry*, which packs a lot of organization in a relatively compact case. The semi-custom units are available in different widths and can be stacked into customized configurations. The cabinet shown retails for \$1,268.

Wellborn Cabinet, 800/762-4475, www.wellborn.com.



Slide and Slice. In my house, we store the cutting board by leaning it against the backsplash wall. Every once in a while, it falls over with a nerve-racking bang. We just put it back. Maybe a *Pull-Out Cutting Board* — one of Crown Point's many intelligent solutions to small, nagging storage dilemmas — would solve our problem? Nah, that's too easy. Prices vary for components of the company's semi-custom cabinet lines.

Crown Point Cabinetry, 800/999-4994, www.crown-point.com.

TOILETS AND BIDETS

Super Bowl. Great clients deserve greater-than-average fixtures. The *Great John Toilet* answers the call with an extra-elongated, extra-wide seating area that can be used by a person of any size. (The two-piece ceramic unit has been tested to 2,000 pounds.) Rough-in is a standard 12 inches and flushing volume is a compliant 1.6 gallons, making replacement applications a snap. The product lists at \$1,899, but check the Great John Web site for sale pricing.

Great John Toilet, 877/268-2396, www.greatjohn.com.



Future Finish. Prediction: In the year 2525, every American home will have a bidet — and no one will think they're weird anymore. Today, most of our bathrooms are too small to accommodate another fixture. Enter the *Bio Bidet*, a retrofit toilet seat in five models (more are pending) ranging in function from a basic cold-water hookup to feature-packed units that boast heated seats, warm-water jets, water filtration, and warm-air drying. Prices range from \$79 to \$389.

UCI, 877/339-5214, www.biobidet.com.



Long Bowl, Standard Footprint.

The *Newport 17-Inch Space-Saver One-Piece Toilet* measures 28¹/₂ inches from wall to front rim and 26¹/₄ inches from floor to top of tank. The elongated bowl's 17-inch rim height is ADA-compliant. Available in a range of standard and premium colors, the fixture lists at \$565.

Eljer Plumbingware, 800/423-5537, www.eljer.com.

Smooth Operator. Speaking from intimate familiarity, I can tell you that the exterior of most toilets presents a much more complicated cleaning surface than the interior. I'd rather not have to get quite so

involved, which is one reason I admire the sleek, skirted *Nexus Toilet*. The elongated, two-piece commode is a taller-than-standard "universal height" and features Toto's G-Max system, which allegedly provides quiet, commercial-grade flushing power. At \$634 to \$951 retail, depending on color, the unit is not cheap (which is why I haven't yet tossed my elbow-length rubber gloves).

Toto USA, 917/237-0665, www.totousa.com.

