Drying Up Wet Basements

by Larry Jones

Uncontrolled seepage. I became a seepage expert shortly after I purchased my old house, stacking loads of boxes in the basement and landscaping the yard.

The first heavy rains brought buckets of water through my foundation and into the basement. My research confirmed what I'd already suspected: that there were no miracle cures, and that waterproof coatings and patches slopped onto the interior basement walls probably would fail miserably.

The only answer was to excavate down to the bottom of the foundation wall. Out came the shrubbery, grass, walks and everything else in the way. It was like digging the Erie Canal. It took all summer to parge and waterproof the foundation walls, install drain piping and gravel, and cover it all up again.

But it worked, and it's still the best, most cost-effective technique for permanently reducing groundwater seepage through foundation walls.

There is another option that treats the symptoms rather than the cause: Let the water leak through the foundation and then collect it in an interior gutter system.

The "Channel Drain" and "Beaver Water Control" systems are two products suited for the job. They are enclosed baseboard gutters that are glued to the floor along the bottom of the basement wall. They trap incoming water and channel it away to a drain or sump pump.

The Channel Drain System consists of four-foot white plastic channels that are sealed to the floor and wall with No. 2 G.E. silicone caulk, then mechanically anchored to the floor and wall or simply to the floor.

This system has several potential drawbacks. The wall and floor must be reasonably smooth to anchor and seal the channel to them. And surfaces to be caulked must be dry for the sealant to adhere properly.

In addition, the channel appears to be designed to trap only the water that enters at the juncture of the floor and wall (arid perhaps several inches up the wall). If the wall leaks higher than that, you're out of luck; the company suggests you paint those areas with a moisture-barrier paint—which is not often effective.

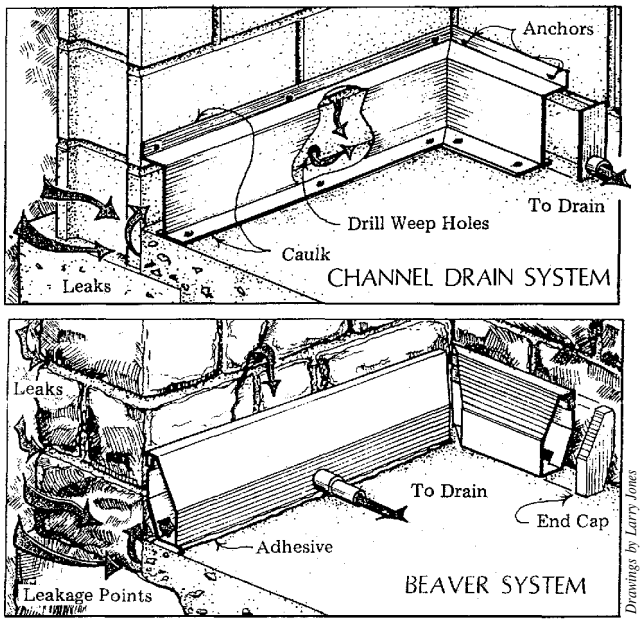
You apparently can attach the channel to the floor only, leaving the top unattached and half an inch out from the wall (to catch water from above), but such an arrangement looks flimsy.

Drilling all those anchor holes (and the suggested weep holes for concrete blocks) can be quite a job. It also leaves you with a lot of holes should the owner decide to remove the system later.

Installing the anchors themselves can be messy, considering you have to drill through the channel and wet caulking. But with anchors every 12 inches, there's little chance of shifting. Over-driving them, however, could cause distortion in the channels and possible sealant failures,

The Beaver Water Control System consists of five-foot-long, fully enclosed baseboard units made from PVC, with small openings along the back to admit water. The baseboard is glued into place with a special two-part adhesive that sets up even on damp surfaces. (But play it safe and dry out the surface with heat lamps or a heat gun prior to gluing.)

It's necessary to glue down the baseboard unit only to the floor, although it can be attached to the wall as well. The contour of the baseboard unit is such that it will catch and funnel away moisture that enters the wall from above.



Drawings by Larry Jones

This unique feature also allows a plastic moisture barrier to be applied to the wall surface and tucked in behind the baseboard. Such a vapor barrier directs all wall moisture down into the baseboard, reducing evaporation and the resulting humidity. A waterproofed (also with a vapor barrier) stud wall could then be built over it.

Beaver System baseboards have a vinyl, hinged front section that can be opened for inspection and cleaning once the unit is in place. The paintable baseboard units can be used with smooth or irregular concrete, concrete block, brick or stone walls. Should the system have to be removed, you'd have to cut away the guttering and sand or grind the adhesive off the concrete floor.

Both systems have a relatively neat appearance when installed. The Beaver System has pre-mitered inside and outside corners and joint connectors. Both systems will discharge water into one-inch PVC or ABS couplers and can be drained by ¾-inch plastic pipe.

Precautions

Building codes in certain areas don't allow basement drain water to be discharged into the sanitary water system, so consult your local codes.

It's often fairly easy to tie the drain pipe into a clothes-washer drain or an existing floor drain. Water flows by gravity, so see that the drain is lower than points of collection.

Be sensitive to the old house. Holes can be drilled through the foundation so pipes can drain outside, but this should be a last resort. Weep holes drilled into foundation walls also are useful only in hollow cavity (cinder block) walls to relieve water pressure. Try several test weep holes to see if they're necessary at all.

Cutting up a concrete floor to hide the drain pipe is definitely not worth the trouble. But cutting a hole in the floor near the wall with the greatest leakage, and placing a good quality sump pump there, can be helpful.

The baseboards can be drained into the sump, and such an installation may even help reduce the moisture beneath the floor slab, You'll need a pipe for the pump to carry water to a suitable drain.

Important Considerations

There are several things to consider before installing a drain system. First determine what type of moisture problem you are dealing with: leaks, seepage, condensation, or a combination of these. The American Society of Home Inspectors notes that:

- Most basement foundations will let in water under the right circumstances.
- Many stone foundations laid with mud mortar (no cement or lime) were designed just to support the house, not to keep out water.
- Basements that have never leaked before may leak after long, heavy rains, thorough yard watering or flash flooding.
- Condensation and humidity can be reduced with good ventilation, dehumidifiers and/or vapor barriers.

You also should consider that these drains won't help if the floor leaks, and that drying out walls that have been wet for years can result in settling.

A few other things to keep in mind:

- New leaks could signal serious structural movement. For example, the weight of a car parked too close to the house may have moved the foundation out of plumb.
- Altering the contour of the site and landscaping can cause seepage.
- Gutters may need repair or alterations.
- Plastic drains can be damaged or unseated by hard bumping.
- Drains alone seldom will solve all moisture problems, but they can reduce humidity and keep the floor dry.

For more information, contact Channel Drain, 401 Olive St., Findlay, OH 45840; 419/422-6521; or Beaver Drain Systems, 1375 Laurel Ave., St. Paul, MN 55104; 612/646-7444. ■

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