

# IS YOUR BASEMENT WET?

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*Here is how to dry it out...*

By LON GROSSMAN  
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WHAT IS A TWO-SYLLABLE word that means dry as a bone? If you can't say basement — especially after the May deluge we've experienced — read on. Basement leaking can come from a very slight trickle or seepage of moisture. It can result in standing water so deep you need waders. The good news is that homeowners can correct most leaking basements inexpensively. All it takes is some sweat equity and a relatively small amount of cash. Here's what to focus on:

## **Around your house**

The most common cause of basement leaking is the ground around the perimeter of your house is sloped toward the house. The grade or terrain should slope away from your house for at least 4 to 6 feet with a 1 inch-per-foot decline. What you need to correct this problem is a wheelbarrow, work gloves, shovel, rake, and topsoil. Topsoil can be delivered right to your yard and dumped in a pile at the end of your driveway. Landscaping & Garden Centers will deliver topsoil for under \$150. The yards you purchase, the cheaper the per-yard cost will be. To determine how much you will need, figure 1-cubic yard of soil will cover 108 square feet 3 inches deep (that's about 5 feet wide by 20 feet long). Before you put any topsoil against your brick or foundation wall, you should, brush the wall with a wire brush and seal it with water-proofing mastic. You don't have to dig down to the footings. Just go down until you see the top of the existing black tar mastic and overlap that surface.

## **Gutters and Downspouts**

Overflowing gutters and downspouts discharging rainwater next to the foundation are major contributors to wet basements. Inspect your gutters periodically to make sure they are clean and not plugged with leaves and debris. Make sure they are secure and not pulling loose from the fascia board. The gutters should be sloped toward the downspout. If not, that could also cause them to overflow. The downspouts should not be connected into storm conductor boots. If so, it puts a major strain on your basement drain tiles. Disconnect them by cutting the downspouts with a hacksaw; add an elbow section and put a 4- to 5- foot piece of downspout pipe on the elbow. That should take any roof discharge away from your foundation walls. If you disconnect the downspout from the storm conductor boot make sure you seal the top of the unused boot to stop objects from falling in the opening. Install a splash block at the end of the extended leader to prevent grass, leaves and debris from plugging the pipe and obstructing the flow of roof water, which in turn could cause your gutters to overflow. Ten-foot sections of aluminum downspout cost approximately \$4. Elbows are under \$2 and splash blocks are approximately \$4 each. Gutters that are clogged or loose contribute to a number of problems. In addition to allowing overflowing water to leak into basements, they cause the paint on the fascia and soffit trim to fail prematurely. Ineffective gutters put a strain on the roof and even trim and siding along the entire house.

# Finding problems underground

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These are things to look for in a basement if you don't know whether it leaks:

- When you open the door to the basement take a whiff. Do you smell a musty, moldy odor? If you don't trust your nose, trust your eyes. Examine the bottom of anything stored on the floor. Do boxes have water stains? If so, they've been in contact with moisture.
- Look for staining on the bottom of finished walls. Sometimes the stains are concealed by plastic baseboard trim. If possible, pull the trim away to look behind it with a flashlight. Look for stains on the back of interior finished walls and under the stairway. Water stains on wood usually are recognizable. So check the bottoms of wood shelving, partition walls and paneling carefully. The darker the stain the more involved the water problems are.
- Loose floor tiles can be a sign that moisture is leaking into the basement. Are there one-eighth inch gaps between the tiles? They weren't laid with those gaps. Moisture caused the tiles to shrink. Often, you'll notice tiles with gaps at one end of the basement or just near perimeter walls but the tiles will be secure and tight fitting in the middle of the basement. That indicates areas that have been exposed to leaking.
- Look for efflorescence, the white, powdery, fluffy growth on masonry walls. It's a result of moisture mixing with the water soluble salts within the wall and leaking into the basement. Efflorescence itself doesn't mean the basement floods. The moisture could be evaporating once it wicks through your foundation and is exposed to the air.
- When purchasing a house, another clue that a basement might leak may be an absence of stored belongings. Have the current owners lived in the house for a long time, yet they're not using the basement for storage? Are they storing items only on one side of the basement?
- Are the foundation walls freshly painted? Fresh paint is a red flag to any home inspector. Realtors know stains and efflorescence may not look all that good, but fresh paint usually means a wall looked worse than minor stains and that could signal a problem.
- Look for rust stains around the furnace cabinet and the steel stanchions that support the house. Heavy rust could be a symptom of ongoing flooding. Around the furnace those rust stains could just mean the air conditioner or humidifier leaked, so examine the pattern of the rust.

# WET – Quick fixes can dry basements

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## Basement window wells

Basements are deeper today than houses built in the 1920s and '30s. Back then basement windows were well above grade level. Today's basement windows are at or below grade and require wells around them on the exterior to keep the ground away from the window so light can come in. The wells can be made from concrete, bricks, blocks, wolmanized timber or corrugated steel. A common occurrence is that during heavy rainstorms, gutters can overflow and pour water into the wells.

### **BASEMENT WINDOW WELLS THAT HAVE DRAINS IN THEM SHOULD BE KEPT CLEAN. IF YOU DON'T HAVE A DRAIN, ONE CAN BE INSTALLED.**

And the water seeps into the basement. Inexpensive plastic covers can be purchased starting at \$10. Install them over the wells to divert the water away. Basement window wells that have drains in them should be kept clean so the drains remain open. If you do not have a drain in your basement window well, one can be installed using a posthole digger. Dig down until you get to the drain tile and then install a section of perforated drainpipe into the hole; fill the pipe and the area surrounding the pipe with pea gravel – small stones available at landscaping centers. Any water that gets into the well, drains quickly to your drain tile.

## Flower beds and borders

Railroad ties and rubber and steel garden borders keep flower beds around the perimeter of the house looking neat and clean but can contribute to a basement leak. They trap the water against the house. Borders should be installed lower in the ground or have breaks in them so water can drain away.

## Basement entries

Basement doors are notorious for leaking. There should be an awning over the stairwell to keep out as much water as possible. There should be a drain at the bottom, too. That drain can get clogged with leaves or debris and if so, the stairwell will flood. The water usually finds its way into the basement under and around the door. For that reason, keep the drain clean and periodically have it snaked out by a plumber.

## Clogged drain tile

Around the perimeter walls of your basement is a drain tile system. The drain tile used to be made from clay crocks wrapped with felt roofing paper. Today's drain tile uses perforated plastic piping wrapped in a cloth sock. The drain tile then is surrounded with pea gravel and it's installed at the base of the foundation walls adjacent to the footings. Drain tiles usually drain into a storm sewer or a sump pump. The drain tile can collapse or be damaged by tree roots. In either case it can be a costly repair because of the labor costs involved. Replacing damaged drain tile systems have put many basement water-proofing contractors' kids through college.

## Setting concrete slabs

Improperly sloped concrete patios and driveways usually have settled because the earth beneath them was not compacted properly. Erosion and gravity do their thing and your patio starts sinking. When it slopes toward the house, all the rain that lands on it flows toward the foundation wall and eventually finds its way into your basement. If the concrete slab is not cracking and broken you should check into a repair called mud jacking. Mud jacking (also known as concrete raising) is about half the cost of replacing concrete. The company drills holes in the settled section and pumps slurry beneath that slowly raises the concrete to the desired height or slope. Mud jacking contractors can be found in your local yellow pages listed under concrete.

## Cracks in walls

Hydrostatic pressure is the term used to describe the pressure water can exert when it accumulates and is pushing against a wall. When enough water accumulates, it will either push the entire earth on its axis away from your basement wall or push your basement wall inward. I'm betting your wall gives in first. Commonly, a hydrostatic crack is found in walls made of cement blocks. Evidence of movement will be a horizontal crack that is 3 to 5 courses of block from the top. The crack usually will be along a mortar joint and the joint will be open. If

it's been filled with mortar, it will be wider than all the other mortar joints in the wall. The wall will, with time, bow inward. If the movement is not severe, the movement can be stopped by making sure the exterior landscaping and concrete are sloped away from the house. Individual cracks that leak can be repaired by basement waterproofing contractors. Prices are \$200 and up, per crack.

### **Rod hole leaks**

Poured basement walls use steel rods to hold the forms in place while the concrete is being placed (poured). After the concrete cures or hardens, the rods and forms are removed. Many contractors install a cork and mastic to fill and seal those rod holes. Oftentimes, the cork cracks and the rod hole leaks. The homeowner can repair rod hole leaks easily by chiseling them out and rinsing and filling them with hydraulic cement. Twenty-pound buckets of hydraulic cement cost about \$10. One bucket should be enough to do dozens of rod holes. While wearing protective eyewear, chisel out the center of the damp area where the leak is occurring. Chisel in about 3 inches. Take a garden pump sprayer filled with water and rinse out the hole. While wearing gloves, quickly mix a small amount of the hydraulic cement and roll the cement in your hands into the shape of a cigar. Push the cement into the rod hole as far back as you can and smooth the surface even with the basement wall. Hydraulic cement is easy to work with but it heats up and expands in your hands. Before attempting to fill the first rod hole, practice with the cement so you can determine how fast you need to work.

### **Condensation**

Most basements feel cool and damp. That's because they are. To determine whether you have a condensation issue or the basement leaks, tape a piece of aluminum foil or plastic to the wall or floor. Leave it in place for a day or two. If moisture is on the surface, you have a condensation issue. If moisture is behind or under the plastic then you have a seepage problem. To reduce condensation you should insulate all plumbing pipes with pipe wrap. Turn off, drain and clean the humidifier in the spring. Repair dripping faucets. Cut shrubs away from the foundation walls and make sure everything is sloped away from the house. Do not hang clothes to dry in the basement and make sure your clothes dryer is clean and vented to the exterior. You can open the basement windows to air out the basement but don't do it on a hot, humid day. That will only add to the basement's humidity. If all else fails, purchase and use a dehumidifier.

### **Sewer problems**

Sewer problems causing the drains to back up can be extremely costly. You can rent a 100-foot snake at tool rental companies for approximately \$80 per day or about \$45 for 3 hours. Plumbing and sewer cleaning companies are specialists at snaking out sewers. Some companies can run a camera through the sewer pipe and determine where an obstruction occurs and whether the pipes need replacing. It usually costs under \$150. Backflow or gate valves can be installed where the sewer connection leaves the house. When city storm sewers back up into basements, as they did recently in Dearborn and Downriver communities, the homeowner could close a gate valve and prevent a flooded basement. Bob Fowler of Roto Rooter in Dearborn Heights said the system is expensive (about \$4,600) because you need to install a backup sump pump that will pump water to a dry well in your yard. The problems with backflow gate valves are that they need periodic maintenance to keep them working properly and you'd need to be home and aware that the sewer is backing up in order to close the valves. Finally, you cannot use any plumbing in the house until the problem has passed and you open up the valve. One final thought, Fowler suggested you install a cleanout downstream of the valve. Without the cleanout, it's possible that a sewer snake could get tied up in the valve itself.

### **Basement water alarms**

Basement water alarms are available for \$15 up to about \$50. They help prevent costly water damage by alerting you that water is on the floor or starting to back up. They usually operate on a 9-volt battery and should be placed by floor drains, near the laundry area, by a sump pump or wherever there is a potential for water damage. The Sonin Co. has a wireless model for \$29.99. The sensor can be in the basement while the receiver can be up to 50-feet away. It's available online at [www.sonin.com](http://www.sonin.com).