

# What To Do About Wet Basements



The ASHI inspector includes the examination of basements and accessible crawl spaces in his inspection. He looks for signs of water penetration in the basement or crawl area such as rust at the base of the heater or steel posts, stains, discoloration or decay on wood partitions, paneling, wood posts; damaged floor tiles or mildewed carpeting; efflorescence on foundation walls; stains or mildew on objects stored on floor.

But, it is not always possible for the inspector to see these signs. Sometimes the evidence of water or condensation is missing. There may have been several dry years when no water has entered. Sometimes, new building in the neighborhood or on the street will change conditions enough to cause a water problem. Sometimes a blockage in a drainage system will create water conditions which did not exist before. Gutter and leader blockages may cause a basement water condition.

**ALL BASEMENTS ARE VULNERABLE!** Start with the assumption that all basements or areas below grade are vulnerable to water at one time or another. Not all basements were designed to be dry. Old dry-laid stone foundations, for example, were only intended to hold the house up. After several days of rain, tropical storms or flash floods, even basements that have never had water may get wet. Never store anything directly on the basement floor. If you are planning to finish the basement, make sure that water problems are well under control. Guaranties of basement waterproofing should be treated with healthy scepticism. The presence of a sump pump in the basement floor is often a good thing, but it does not mean that the floor never gets wet. It is only one means of getting water out of the basement. Many sump pumps are inadequate to handle large volumes of water in severe storms. They may burn out or be swamped, or the power may go off.

**BEWARE OF MISLEADING CLAIMS!** There are no miracle cures for wet basements. Promises are made of unique waterproofing methods. These often end in failure despite so-called guaranties. Costs may be high. Occasionally the solution may be simple (read on). It is frequently a matter of trying different remedies: proceeding from the simpler to the more elaborate in dealing with the problem.

**HOW WATER GETS IN!** A house with a wet basement is not necessarily poorly constructed. Water can appear occasionally in the basements of the best built homes. Water gets into a basement in three ways — by **direct leakage**, **seepage** and **condensation**.

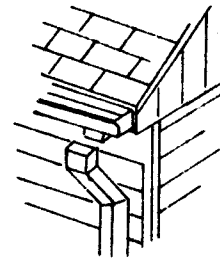
**DIRECT LEAKAGE.** Measurable water is usually due to leakage which may be difficult and expensive to control if the house is already built. Water may flow through obvious openings, through unnoticed cracks, or through the joint where the floor meets the wall. Poor drainage outside the house or a high water table or both may be the source of this basement water. Sometimes poor drainage conditions can be corrected by regrading; sloping the ground away from the foundation. Oftentimes more costly and more complicated methods are needed.

**SEEPAGE AND CONDENSATION.** These usually are easier to control than leakage. Mild seepage can sometimes be stopped with properly applied waterproofing finishes on the inside basement walls. Condensation can be controlled by ventilation, dehumidifiers and vapor barriers on walls and floors. Dripping can be eliminated with insulation on cold water tanks and piping.

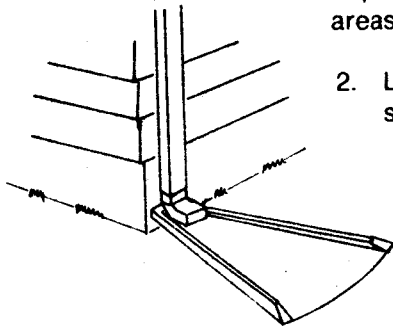
# How To Keep Water Out — Start With Small Things First

## OUTSIDE

1. Gutters and leaders (down spouts) are very important. Repair, maintain and clean them regularly. Large roof areas demand large gutters properly drained.

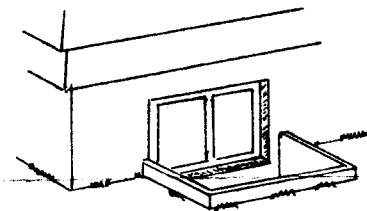


2. Lead water away from the foundation with splash blocks (shown) and extensions.

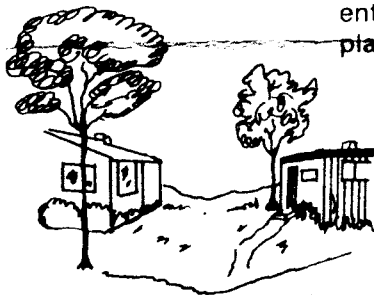


3. Abandon clogged or broken underground drainage pipes and install elbows with above ground piping or splash blocks.

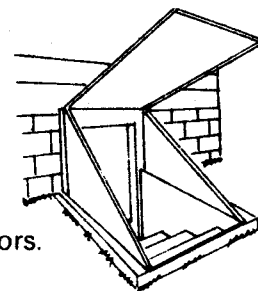
4. Clean and maintain window wells. Stop water entry through basement windows. Cover with plastic bubbles if necessary.



5. Slope ground away from the house. Poor grading is a common cause of seepage and leakage.



6. Protect outside cellar stairwells and doors.



## INSIDE

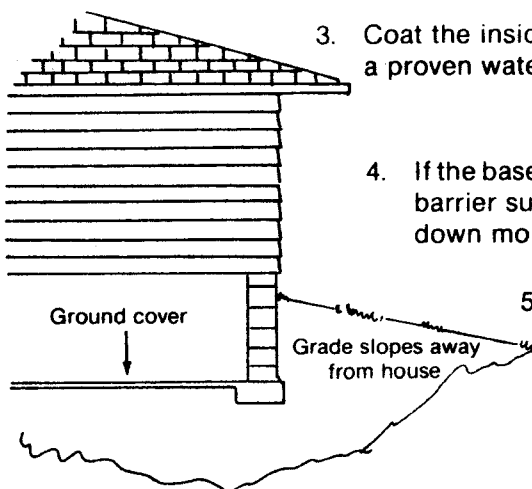
1. Seal cracks inside and out against leakage and seepage.

2. Seal the joint between the floor slab or footing and the foundation walls with a waterproof cement or sealant.



3. Coat the inside basement walls with a proven waterproofing material.

4. If the basement or crawl has a dirt floor cover it with a vapor barrier such as roll roofing or polyethylene, to keep down moisture.

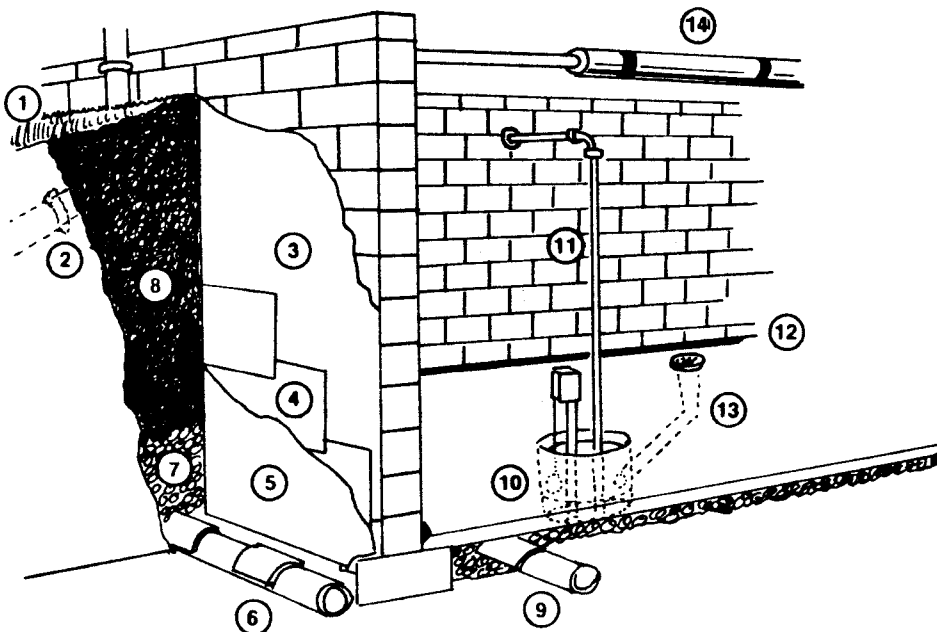


5. Prevent sweating or dripping from condensation by wrapping cold water pipes and well pressure tanks with insulation.

6. Ventilate the basement or crawl or use a dehumidifier when humidity is high.

NOTE: The simple, inexpensive measures on these two inside pages "fix" the majority of wet basement problems. Before you turn to the expensive "Last Resort" measures on the next page you may wish to consult an ASHI member for an objective opinion. They can be found in the Yellow Pages under "Building Inspection Services".

**LAST RESORTS — EXTENSIVE AND EXPENSIVE!** The following steps may be needed either singly or in combination: curtain and French drains, swales, trenches and recontouring on the outside; or inside perimeter drainage below the basement floor may be required if the simple methods suggested here fail. Professional guidance is recommended.



Slope land away from house (1). Discharge downspouts through non-perforated pipes (2). This will improve general drainage. Serious leaks in walls may require excavation and application of waterproof barrier shown: mastic (3), fiberglass fabric or polyethylene (4), second layer of mastic (5). Drain tiles or perforated pipe (6) are laid at footing, tarpaper, felt or plastic over joints. Gravel (7) covers tiles, excavation is backfilled (8). Floor leaks call for pressure-relief system: Drain tiles (9) direct water to sump (10). Pump expels water out pipe (11) to sewer or away from foundation. Floor joint is sealed with asphaltic cement (12). Drain (13) carries off any water on floor. Insulation on cold-water pipe (14) prevents condensation.

### Common Terms

**Backfill** - The earth replaced in the space around a building wall after the foundations are in place.

**Crawl Space** - A shallow, unfinished space beneath the living space of a house used for visual inspection, storage and access to pipes and ducts.

**Curtain Drain, Interceptor** - A drainage trench away from the house, filled with crushed stone and perforated pipe which leads water around or away from the house.

**Downspout or Leader** - Piping which carries rain water from roof or gutter.

**Efflorescence** - White salts that form on the surface of masonry after moisture evaporation.

**Footing** - The base, usually concrete, on which the foundation sits.

**Foundation** - Lower supporting walls, columns or slabs on which the structure is built.

**Foundation Vent** - An opening which permits passage of air.

**Grade Line** - The point at which the ground rests against the foundation.

**Gutter** - A channel at the roof edge for collecting rain water.

**Hydrostatic Pressure** - The pressure exerted by water under a basement floor or against the foundation from the outside.

**Moisture Barrier** - Treated paper, plastic or metal that retards the passage of water vapor. (Also Vapor Barrier)

**Parging** - A rough coat of cement mortar applied on a masonry wall as protection or finish.

**Pointing** - Refilling of masonry joints.

**Sump** - A pit in which water collects to be pumped out with a sump pump.

**Swale** - A shallow depression in the ground for storm water drainage.

**Water Table** - The natural level of water in the earth around a house. This changes according to seasons of the year and climatic cycles.



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