

# How Rain Water Does Damage to the Home

**Rotted Wood: Rain water can flow to and behind numerous structures in the home. Treated wood is resistant to insects, but is vulnerable to wood rot under certain conditions. Wooden components of the house become rotted by retaining moisture, becoming warm, and then growing fungus. Other problems are introduced with the rotted wood.**

We have known for quite some time the destructive force of falling water. One of the early attempts to protect our homes was extending the roof past the main portion of the home (eaves) to provide some protection from the sun and precipitation. The eaves system failed to provide enough protection from the rain. Rainwater can travel along the eaves through the process of water surface tension to other vulnerable structures of the home.

Then along came the eaves-trough or gutters, which was designed to get the water off of the roof, through the gutters, and away from the home. Gutters helped to protect the structures by not allowing water to flow on to these areas. Unfortunately, gutters commonly fail by clogging, and damage results.

Going back to the analogy of the bowl of water filled to the brim, when an ice cube is dropped into the bowl, water goes everywhere. This is what is happening with your gutters whether they are partially or fully clogged in a downpour. Water ends up going behind the fascia, soffit, on window and door frames, and siding. If the structures don't get a chance to dry off, then the wood will start to rot. Warmth and moisture are two ingredients to breed fungal spores. Fungus has very strong enzymes that can break down treated wood very quickly.

April showers may bring Mayflowers, but they bring wood rot issues as well. Compounding the issue is increased volume of debris dropped from vegetation during the rainy seasons. Adding to this situation is spring going into the summer creating the warmth that fungus needs to grow.

Fall brings just the inverse. Again there is increased leaf debris in the gutters. The water flows behind structures and doesn't get a chance to dry out. Winter follows, and protective aluminum wrapping in such areas as soffit and fascia are pried apart by the expanding ice, exposing the wood for the next cycle of destruction.

Rotted wood can compromise the structure of your home, take away from the esthetics, and is very expensive to fix. In turn, wood rot attracts the next wave of destruction; uninvited guests.

**Insect Infestation: Standing water and rotted wood provide food, drink, and homes for insects. They are the next waver of destruction to your home.**

Gutter installations are one of the fastest growing home improvement segments in the South. For many years, gutters were considered unnecessary due to the lack of foundations in residential buildings. However, there has been growing consumer awareness of the correlation of termite and carpenter ant infestation and moisture next to the home.

Early colonists tended to settle near sources of water and food. It's no different with insects. On top of it, moisture not only provides drinking water, but food as well. Insects cannot attack treated wood until it gets water logged and begins to rot.

Flying insects such as mosquitoes are attracted to standing water for another reason and that is reproduction. Mosquitoes only need a thimble full of water to reproduce and usually don't go more than 200 feet from their breeding grounds. Standing water, whether in the gutters, on the roof, or next to the foundation, provides a safe haven for these pests.

**Mold: The downside of tighter built homes is the potential for mold to grow. Mold needs darkness, moisture, and warmth. Mold spores are toxic. The solution involves removal and replacement of infected structures by abatement crews. This is a costly process and is not covered under conventional homeowner's insurance.**

With the improvement in building technology, there has been a negative impact. Homes are much tighter than they used to be, which has been a boom for mold. Mold needs to have a dark, warm, and moist environment to grow. Our new homes no longer have the gaps that let in excessive light and cold. If water gets into the home, then mold can grow.

Mold gets into the home quite often through the gutters growing onto the fascia board ending up in the attic. Cracks in the foundation allow an entry point for mold to get into the home.

Most people have heard of "Sick House" syndrome. Certain types of mold give off micro toxins in their spores. These toxins can be lethal to small children and older adults. The symptoms include nasal stuffiness, wheezing, shortness of breath, and headaches.

Mold cannot be killed due to the releasing of spores. It would be the equivalent of spraying poison gas. The structures containing the mold have to be physically removed by abatement crews. Any time that you involve abatement crews (typically involved with

removing hazardous materials such as asbestos and lead), you can be assured that it is going to be an expensive project. For example, when the hurricanes hit Florida, there was a condominium building in which each owner had to contribute over \$75,000 a for mold removal.

Insurance companies are well aware of the issues of mold, and now require a separate policy to cover mold. In some communities, such as Toronto, there is no such coverage available.

**Cracked Foundation: Seepage and Cracked Foundations are expensive to fix and can cause excessive damage especially if the basement is finished.**

Standing water next to the home is one of the biggest causes of cracks in the foundation. Standing water occurs because as homes settle, they sink creating a reverse grade going back to the home. The eaves provide some protection by deflecting the water away from the foundation. Some water will fall next to the foundation no matter what is done, but you want to take steps to minimize water collecting at this point. Extenders on down spouts should extend 4-6 feet to allow the grade of the home to finish draining the water away. Some homes have drain tiles (black plastic corrugated tubing attached to the down spout) which drains to a safe portion of the lawn with adequate grade or directly into a sewer.

When the gutters are clogged, the water overflows the gutters and drops directly next to the foundation. This will be readily seen by debris hanging on to the gutters and splash back next to the foundation. Commonly, a divot or trough may be cut into the lawn next to the foundation. This makes the standing water issue greater as it creates a pond or creek.

Your foundation is made of concrete which is very porous. Just like a sponge, it sucks up the water. During a freeze, the water in the concrete freezes and expands and pushes apart the concrete. That is where the cracks start. Small cracks can be patched usually for \$300 per crack. Large ones may require jacking up the house to repair the foundation. This expense can run several thousand dollars.

**Landscaping and Walkways: Landscaping and sidewalks can be washed away by rainwater. The damage is very expensive to fix. Dirt and mud can tracked into the home creating damage on the interior of the home.**

The Grand Canyon was carved by running water. The same thing can happen with water cascading off of a second story roof. The run-off not only ruins lawns and landscaping, but it is very unpleasant to step into a hidden marsh in your yard.

In some cases, mud is washed on to walkways and then tracked into the home. Many a carpet has been ruined by kids and pets tracking mud and other debris into the house and then grinding it into the carpet.

In severe cases, the water may wash away the gravel base that is supporting the sidewalk leading to your door and the driveway. If enough of the base is washed away, then considerable damage can occur. Cracked and sunken walkways are usually attributed to inadequate drainage caused by a failed gutter system.

**Ice Damage: In the northern climates freezing and expanding water pry apart critical structures of the home. The melted water causes more damage when it goes to vulnerable parts of the home.**

In the northern climates, ice causes considerable damage. Gutters do fail in this case because frozen water doesn't flow. Roof damage is very common because of ice build-up. Ice builds up in two ways: Ice will work its way up the down spouts especially if they are narrow 2 x 3 configurations. The ice in the down spout blocks the gutters and overflows in the gutter portion. Snow accumulates in the gutter. Ice melt flows on top and refreezes. The ice will eventually overflow. The gutters form an anchor for the ice to get up under the first row of shingles, which is the first line of defense for the roof. Ice pries up the shingles wrecking them, and water works its way through the roof into the attic and other structures.

Gutters commonly fall off during the winter due to water getting in between the gutters and the fascia. When the water freezes, it pries the gutters away from the home and they fall off.

Sometimes water will get behind the fascia and trickle down on top of the soffit (metal covering of the eaves) and freeze. Repeated layers of ice can actually form a block and then collapse the soffit panels creating a hazard and additional damage to the home.