Water Damage Prevention

Most people think water damage only occurs from flooding after days of heavy downpours. Yet even on a sunny day, water damage can occur, leaving your property soaked. Whether the culprit is a broken plumbing pipe or a leaking roof, the damage can be devastating and costly.

Where Is All This Water Coming From?

Several modern-day conveniences can develop problems that lead to water damage. Some of the most common trouble spots are:

Appliances -- Common sources for water damage include the water heater, clothes washers, dishwashers, refrigerators, and air conditioning units. The age of the appliance is a major factor. For example over time, water heaters rust on the bottom. Water damage caused by leaky water heaters located upstairs or in attics can be particularly destructive.

Water supply hoses on washing machines and dishwashers may develop leaks. Hundreds of gallons of water can escape and significant damage can occur to the building and property inside.

Pipes and Drains -- Plumbing systems are susceptible to clogs and stoppages, which can lead to overflowing appliances such as toilets, sinks, and clothes washers. Grease buildup in kitchen sinks, lint accumulation in clothes washers, and roots in sewer lines are some of the reasons for clogs and stoppages.

In the wintertime, pipes can freeze, burst and damage the building and the occupants' personal property. An eighth-inch (three millimeter) crack in a pipe can release up to 250 gallons (946 liters) of water a day.

Roofing -- Deteriorated, missing or damaged roofing materials, and ice dams can allow water to enter through the roof and damage ceilings, walls, and floors. Inadequate attic insulation and ventilation can speed up a roof's decay and contribute to the formation of ice dams in the wintertime. Exposure to wind, snow, ice, rain, and foot traffic can also affect a roof's ability to keep water out.

It doesn't take a lot of effort to prevent damage from water. A regular inspection and maintenance schedule for the exterior building structure and interior appliances and fixtures may help reduce or prevent costly water damage.

Your local water utility or a qualified contractor may be able to offer additional information and suggestions.

Exterior and Common Areas

- Prompt repair of deteriorated or damaged roofing materials by a professional roofing contractor will help prevent interior water damage.

- Deteriorated soffits, siding, trim, or flashing may allow water to enter the structure and damage the interior of the building.

- Gutters, eaves, and downspouts that are free of debris will allow water to drain freely. Downspouts should extend away from the building to carry water away from the foundation.

- Adequate insulation and ventilation in the attic can extend the life of the roof and reduce the chance of ice dams that can cause water to back up under roofing. The insulation should be in good shape and attic vents clear.

- Dampness or standing water in basements and crawl spaces may be evidence of a plumbing leak or improper drainage, which can lead to structural problems.

Insulating water pipes that are exposed to freezing temperatures or drafts, such as those

- located in garages and basements, will help reduce the chance of leaks from frozen pipes.

Disconnecting the outside hose connections each fall will help minimize the chance of burst pipes due to freezing.

Inside

- Look for signs of existing leaks on ceilings, walls, floors and near appliances that use water.
- Make sure hose connections are secure on water supply lines to washing machines, icemakers, dishwashers, and other appliances that use water.
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- Recaulk and regrout around sinks, showers, and tubs. Leaking shower pans and loose or missing tiles should be repaired.
- Check and replace washing machine hoses regularly, especially if there are signs of cracking, bulging, or other deterioration.
- Follow the recommended maintenance procedures for all appliances and equipment. This includes periodically draining a portion of the water out of the water heater to flush out the sediment in the bottom of the tank. (Be sure to follow the manufacturer's instructions.)
- Regular maintenance by a qualified HVAC contractor will help keep air conditioner pan drain lines clear of deposits that can clog the line.
- When the weather turns cold, a trickle of water from both the hot and cold faucets may help prevent frozen pipes. Another good idea is to open cabinet doors to allow heat to get to pipes under sinks and appliances near exterior walls.

A drip pan can be placed under the hot water heater so that small leaks will be contained and damage to the floor is minimized or prevented.

Hardware That Can Help: Water Leak Detection Systems

To help keep an eye on these or other trouble spots, you may want to consider installing a water leak detection system.

Leak detection systems can be either active or passive.

Passive leak detection systems or "water alarms" are intended to alert you to a possible water leak. They generally sound an audible alarm tone and some may also feature a flashing light.

Passive systems are frequently battery-operated, stand-alone units. They are inexpensive and easy to install. Some simply sit on the floor while others may be wall mounted. A moisture sensor is located on the bottom of the unit and activates the alarm when it becomes wet.

Battery-operated devices need to be tested regularly and the batteries should be replaced on a periodic basis. Most devices will "chirp" when the battery is low, similar to many smoke detectors. Passive systems only help reduce water damage if someone hears the warning tone and acts to stop the leak.

Passive systems generally cost from $8 to $45 per unit.

Active leak detection systems usually generate some type of alarm, but also perform a function that will stop the water flow. They feature some form of shut-off valve and some means to determine that a leak is occurring.

Most devices use moisture sensors to detect a leak. Other systems utilize a flow sensor and a timer to determine that something is leaking and the water needs to be turned off. An active leak detection system can either operate for an " Individual Appliance" or it can control a "Whole House".

"Individual Appliance" systems are designed to detect a leak from an appliance, such as a washing machine or water heater. When a leak is detected, an alarm is activated and the water supply is automatically shut off to that appliance.

Depending on the type of device, you may be able to install these systems without any special tools. However, in some cases a qualified plumber may be needed. "Individual Appliance" systems range in cost from $50 to $150.

"Whole House" systems may prevent or reduce damage to your property by shutting off the main water service when a leak is detected. A shut-off valve is installed on the main water service piping. This valve usually requires 115-volt electrical service. Some models feature a battery back up to operate during power failures.

Systems that operate with moisture sensors have small detectors that are installed on the floor below appliances and fixtures. These detectors may be "hard-wired," meaning a wire must be routed through the home between the sensors and the control valve.

Wireless systems utilize battery operated sensors that send a radio signal to the control valve if a leak is detected. The wireless systems are usually easier to install, especially in existing homes, but as each sensor is a small radio transmitter, these systems often cost more to purchase. The batteries in wireless systems also must be replaced regularly

Systems that utilize a flow sensor and timer are programmed to accommodate the water usage patterns. Anytime water usage exceeds the programming, the device sends an alarm and shuts off the water service. Most of these devices feature "at-home" and "away" settings for when the building is or is not occupied.

Generally, "Whole-House" water leak detection systems take between four and six hours to install and cost between $500 to $1,500 depending on labor rates and the size of the system.

Convenient Features of Some Leak Detection Systems

Some models of leak detection systems can be connected into a building's security or fire alarm panel. If it detects water, it can send an alarm to an off-site monitoring company.

Some systems that utilize leak sensors also have temperature sensors. If the temperature at the sensor(s) in the home drops below a specified temperature, the detection system will send an alarm and close the service valve to lessen or prevent damage if a frozen pipe bursts.

Periodic testing and cleaning of the device or system is recommended.

http://www.statefarm.com/consumer/waterdam_prev.htm