

# WHAT IS LEAK DETECTION?

## **Water leak detection is one of the easiest ways to reduce water waste.**

Did you know the average home can leak 25 to 30 gallons of water a day? Slow drips of water can add up quickly. Even small leaks can add up to thousands of gallons of water waste annually. If the drip is on the hot water side, you are also paying for wasted energy. By not repairing leaks, you not only waste water and energy, but you may also be subjecting your home and personal belongings to severe water damage. Identifying and repairing water leaks is a great way to reduce the amount of water that is wasted in your home. And remember, repairing water leaks will always save you money.



## **USING YOUR WATER METER TO CHECK FOR WATER LEAKS**

1. Locate the water meter. It should be near the street under a metal, plastic, or concrete lid. Remove the lid, brush away any soil or dirt, and be very careful of spiders! Water meters have numbers or spinning dials, which record usage. When water is not being used, none of the numbers or dials on the meter should move. Most meters also have a small "leak detector" arrow, which spins to record the low volume of water use that is common with leaks.

2. Turn off every water-using item inside and outside the home or building. Remember to shut off your swamp cooler and irrigation or sprinkling systems, and don't use your icemaker for a while before the test.

3. Watch the water meter for a minute or more. If the leak detector dial is moving, you might have a leak. In some cases, the leak detector dial might move back and forth very slightly - this is usually caused by water pressure fluctuations and is not a sign of a leak. If the leak detector dial moves forward continually, even at a slow rate, you have a leak. You may also want to check the main meter reading (numbers) at a set time, and then come back an hour later to check the reading - ensuring that no water has been turned on during the hour. If the meter reading has increased, there is a leak.

4. To determine whether the leak is inside or outside of your home or building, find the main shut-off valve for your home or building. It can be indoors or outdoors, but should be near the location where the water line enters the building. If you don't know where the shut-off valve is, follow a straight line from the water meter to your building, and look for it (if you have a very large building, it is possible you have more than one main shut-off valve - they should all be turned off).

5. Turn off, or close, the main house shut-off valve and check the water meter. If when the main house shut-off valve is closed - the meter has stopped, the leak is inside your home or building. If you need help with repairs, or in locating the interior leak, call a plumber.

If the meter continues to run with the building shut-off valve closed, your leak is in the lateral line (between the meter and the building) or it is in the irrigation system. If a leak between the meter and the building is suspected, carefully walk the path again from your meter to where the line enters your house or building to locate the leak. Look for obvious signs of an outdoor water leak, such as some sinking, wet shoes, or lush grass in an area where the rest of your turf looks dead. Call a plumber to fix underground outdoor leaks.

## **CHECKING THE IRRIGATION OR SPRINKLER SYSTEM FOR LEAKS**

6. If you do not find the leak is inside your building, you need to check the irrigation or sprinkler system. To check for irrigation leaks, you need to isolate the irrigation system from the main water line. Turn the building's main valve back on, and turn the irrigation valve off. If the irrigation valve is turned off and the meter has stopped, the leak is in the irrigation system. Spotting leaks in irrigation or sprinkling systems is similar to troubleshooting internal plumbing - you have to look for signs of a leak. When you have a system installed, it's a good idea to retain a copy of the system's layout. This will provide you with a map so you can "walk the system" to identify leaks. Any wet spots or pooling of water should be investigated.



In general, irrigation systems should be checked weekly to ensure they are operating properly and your plants are getting the water they need. Also, inspect drip emitters and sprinkler-heads to ensure they are intact. Broken heads or emitters can release a lot of water, driving up your bill.

## **HOW TO CHECK FOR A LEAKY TOILET**

Have you ever been sitting in your home, alone, when all of a sudden you hear your toilet flush and you were nowhere near it? No it's not gremlins - you've got a toilet leak. Toilet leaks can range from small to large, constant to random. Many are silent. Even a small, silent leak can waste \$50 per year, or more, in water and sewer costs. Large leaks waste much more. The good news is, if you can change a light bulb you can probably fix your toilet.

1. If your toilet is functioning properly, no water should move from the tank to the bowl, unless it is manually flushed. Remove the tank lid (don't worry, the water is clean until it enters the toilet bowl). Add just a few drops of food coloring to the tank water or purchase a test kit with dye tablets at your hardware or plumbing supply store and follow the directions. Do not use any other kind of dye - it can permanently stain your toilet bowl. Replace the tank lid.
2. After 15 minutes or so, look in the toilet bowl. If you see colored water, you have a leak. If the water is clear, water is not leaking from the tank to the bowl. Remember, if you do have a leak the toilet can flush on its own, so make sure it hasn't or wasn't manually flushed while you were waiting.

The most common reason a toilet loses water from the tank to the bowl is a malfunctioning flapper. The flapper is a rubber control valve that opens when you flush your toilet. (The fill valve can also cause some leakage problems when the valve doesn't completely close after refilling the tank - but most toilet leaks are caused by a malfunctioning flapper.) If you remove the tank lid and can easily identify the cause of the leak, correct the problem and try your leak test again. Bending the float back or adjusting the rubber flapper should be considered temporary "fixes"- they won't solve the problem.

## **FLAPPER REPLACEMENT**

When replacing your toilet flapper, always use an identical factory replacement. There are many types and sizes of flappers available, and some are quick closing, while others are not. Using the wrong flapper could cause you to lose more water. If in doubt, check with your local plumbing supplier. Always bring along your old flapper, and the toilet model and manufacturer's name if you know them. You and the sales clerk will be glad you did!

## **A WORD ABOUT TOILET BOWL CLEANERS**

A damaged toilet flapper is the number one cause of all toilet leaks. The problem often occurs when in-tank chlorine toilet cleaners are used. While these products are keeping your toilet bowl clean, the chemicals can damage or destroy a rubber flapper in as little as 30 days, ultimately causing a leak. There are some good solutions to this problem. Manufacturers are now making new composite rubber flappers with "extended warranties" that protect against leakage for up to five years. These flappers are resistant to the chemicals in traditional toilet cleaners. However, the composite rubber flappers are more expensive than the usual replacements. A good solution is to use in-bowl toilet cleaners - after all, that's where it's needed. In-bowl cleaners provide the same cleaning power, but there is no contact with the flapper.

## **LEAKING FAUCETS**

A leaking faucet is frequently caused by a rubber washer or o-ring that has worn out. You can extend the life of your washers by not over-tightening the valve. Over-tightening causes the washer to compress and crack. Once it's cracked, you've got a leak. Over tightening can also cause the seat, the place where the washer sits, to become deformed. If that happens, you're looking at a more serious repair job. The washer on a sink is typically located under the handle. A washer is relatively easy to replace, if you have the right tools. You will need to shut off the water under the sink, and remove the faucet handle to replace the washer or o-ring. Home repair manuals, plumbing suppliers, or the Internet (keywords "repairing leaky faucets") can provide instructions on how to repair a leaky faucet. If you don't feel comfortable doing the repair yourself, a plumber may be your best option. Remember, even if you have to pay a plumber to fix the leak, you should end up saving money in the long run.

## LEAKING PIPES

Identifying a leaking pipe can get a little tricky because they are mostly concealed in walls or are under the foundation of your home or office. When looking for pipe leaks, you have to look for the symptoms of a leak - such as discolored drywall, ceiling tiles, or carpet. The good news is a pipe leak is relatively rare and is usually at a joint, which makes repairing it a little easier. When in doubt, call a professional plumber to check things out.



### CAN'T FIND A LEAK AND STILL HAVE A HIGH WATER BILL?

Most of us already subconsciously monitor our water usage. After all, you know something is wrong when you get a higher than usual bill, right? The key is to determine if it is a seasonal change or a leak. We also need to be aware that some leaks can "sneak up" on us, starting slowly, with no signs, and before you know it you have the biggest trees in the neighborhood and your water bill is \$700 a month!

It's always a good practice to not only look at what you pay for water, but to monitor how much water you use. You should compare your current water use to past use. If no past use information is available (new home, new to you, rental, etc.) you could compare how much water you use to your neighbors, keeping in mind that your neighbors may have different water needs.

If you still feel you are using too much water after checking for and then repairing any obvious leaks, you should look for a leak between your water meter and your home or office. These are generally the most difficult leaks to detect because they are rare and provide few visual clues.

### A FINAL NOTE

Remember, leaks don't go away on their own, they only get worse with time. They cause property damage and can become expensive to repair. Take care of leaks as soon as they are identified, it saves water, money, and limits the complications of water damage. If you're going to be gone for an extended period of time, you might consider shutting off your main water line (irrigation and sprinkling systems should be left on). This should reduce the likelihood that a leak will cause damage while you're away.



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