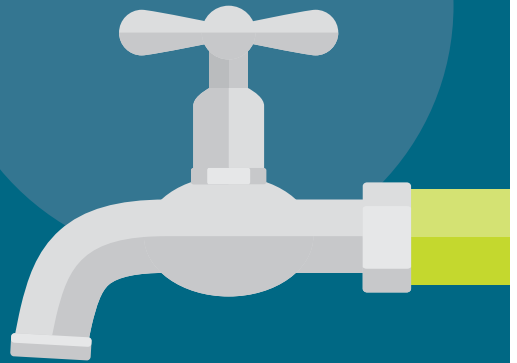




CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

DIY Guide to Finding and Fixing Water Leaks

Water is our most precious natural resource. Living in our water-scarce region means we all must use water wisely. Finding and fixing leaks is an essential part of reducing water wastage in our homes, businesses, sports clubs, schools, places of worship, and everywhere else in our communities. Repairing leaks on your property is your responsibility. By law, leaks must be fixed quickly, which will also save you money. Use this handy guide to help find and fix them.











THINK WATER
CARE A LITTLE. SAVE A LOT.

Making progress possible. Together.

LEGAL DISCLAIMER:

Although based on law, the information provided in this booklet is presented in an informal and plain language format for the purposes of providing advice on water usage and savings to customers and members of the public. Should there be any discrepancy with provisions in the underlying legislation, the actual legislation takes precedence and should be consulted directly. Alternatively, please obtain independent professional advice on the matter. The City of Cape Town does not accept any liability for any action taken on the basis of the information contained herein.

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Find it. Fix it.

Leaks can waste a lot of water, whether in a home or business. Finding and fixing leaks is key to ending wasteful use of water on your property.

A single dripping tap can waste 15 to 90 litres per day - enough to fill an average swimming pool in a year. A toilet leak wastes up to four times as much - that's one average pool's worth every third month. Many leaks happen without people realising so (especially if the leaks are underground), running on for months or even years. They cost money without being a productive use of water, and drain our dams unnecessarily.

Fixing a leak may cost a bit, but will typically pay for itself quickly - even within a month or two for a simple toilet, tap or geyser leak involving replacement of a washer by a plumber. Payback is even faster if you do it yourself. Remember, leaks waste water and can push your usage into a higher block in the tariff schedule, and higher usage automatically pushes up your waste water bill too.

For all these reasons, if you think you might have a leak at home to fix, don't delay: Find it. Fix it.

How to check if you have a leak at home

- 1** Stop all water use. Close all taps on the property and don't flush toilets. 
- 2** Check and record your meter reading. 
- 3** Wait 15 minutes and take another reading. Make sure nobody has opened a tap or flushed a toilet since you first noted the meter reading. 
- 4** If there is a difference, you have a leak to fix. As per the City's Water By-law you need to take action quickly. 
- 5** Use this DIY guide to fix simple leaks yourself, or call a plumber to help. 

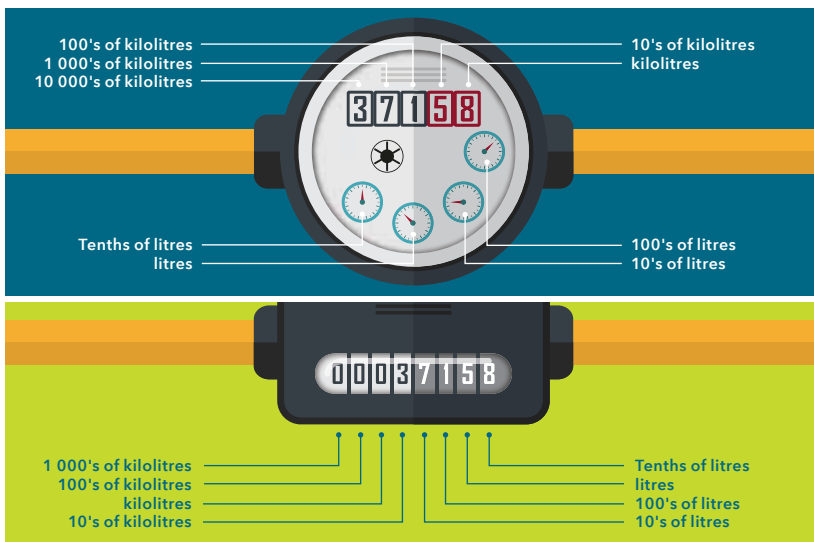
If you are renting or don't have a dedicated meter, you should still take action to stop leaks. You're probably paying for this wasted water without knowing it. What's more, if you don't identify, repair or report the leak, you may be obliged to pay for this water.

Don't delay. Find it. Fix it. Or at least notify the property manager or owner.

How to read your water meter

Reading a water meter is not difficult. Open your water meter box. If the meter box is locked, the City of Cape Town staff can open it with a meter box key when they come around to read your meter. Your meter is likely to look like one of two kinds used in Cape Town, which are shown below. Both record the same thing, but display the information slightly differently. The illustrations below show you how to read both kinds.

One has a set of numbers at the top and some round dials. There are various makes and models, so they might look a little bit different, but they all have these features. The other kind only has numbers and no round dials.



Note that you should particularly look for where it shows movement of the smallest volumes of water use as indicated by litres or fractions of litres, because in 15 minutes there won't be very big volumes of usage (e.g. unlikely to be 1 000 litres) On the face with round dials, look for the dials which show litres (0.001) or tenths of litres (0.0001). On the meter which just shows numbers, look to the far right of the set of numbers for where the litres (2nd from right) and tenths of litres (furthest to the right) are.

How to find a plumber

If it's not a simple job which you can do yourself, you may prefer to call a plumber. It is important to work with someone who is properly qualified and registered. For a list of registered plumbers in Cape Town visit www.capetown.gov.za/thinkwater. Note: the City is not responsible for any work done by any plumber on this list.

It is also important to use quality materials to do any repairs and stop the leaks. If a plumber needs to replace pipes, fittings or other components, ensure that only SABS-approved materials are used. A list of these approved plumbing materials is available from the JASWIC (Joint Acceptance Scheme for Water Service Installation Components) website at www.jaswic.co.za.

If you cannot afford a plumber, or cannot fix the leak yourself, keep the main tap (stopcock) off between water usages.



How to find and fix leaks

Most leaks are not hard to find, if you know where to look. Check the basics: toilets, hot water cylinder (geyser) overflow pipes, and taps. These are the most common. An unnaturally green patch in the garden or damp patches in walls or hardened surfaces may also indicate a leaking water pipe. Unless you are confident of an underground leak, check the easily spotted ones above ground first - toilets, taps and geysers - before looking underground where the costs and complexities can be much greater.

How to check for a toilet leak

1

Listen for water trickling into the toilet bowl.



2

Press a piece of toilet paper against the inside back surface of the bowl. If it gets wet, you probably have a leak.



3

Put 15 drops of food colouring into the toilet cistern. If, after 15 minutes, the water in the toilet bowl has changed colour there is a leak.



If there is a leak, check for the cause. Remove the cistern cover and look at the water level inside:

- If the water is at the same level as the overflow pipe or is flowing into it, the water level is set too high or the **float valve** is leaking.
- If the water level is below both overflow pipes, the **flush valve** is leaking.
- The **flush valve** may also be worn or perished causing water to leak into the bowl. Replace the **flush valve** washer – see further on.

How to set the correct water level

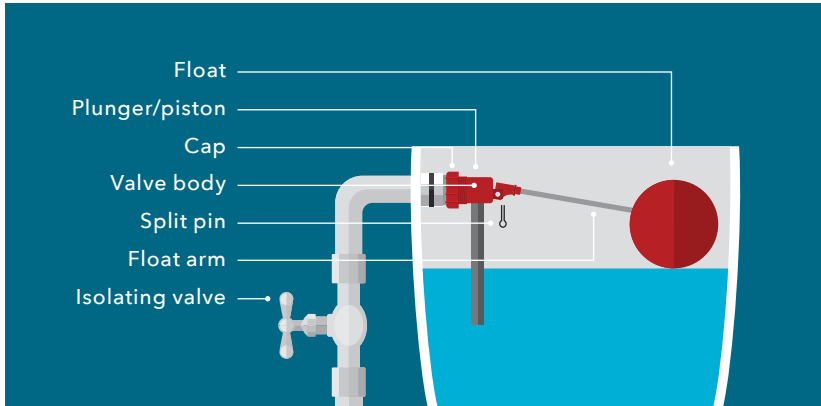
If water is flowing out of your overflow pipe, it means that your water level is set too high. This may be fixed by lowering the **float valve** setting by one of these two methods:

Method 1: Close the isolating valve (stopcock), remove the split pin and lift the float arm from the cistern. Bend the float arm slightly downwards. To prevent damage, hold the arm with one hand while bending it with the other hand. If the float arm is old it may be brittle and break easily so be careful. When you are putting it back, make sure it fits in correctly. Finally, re-open the isolating valve and check that the new water level is lower.

Method 2: If the valve is fitted with a screw-type adjuster, turn the screw to lower the float slightly. The water should rise to a level below the overflow and the **float valve** should close off. If this does not happen and the water level continues to rise and the cistern starts to overflow again, the **float valve** washer needs replacing.

If you can't afford to call a plumber right away to fix a serious toilet problem, then use the little stopcock (angle valve) tap at the base of the toilet to keep it turned off between flushes.

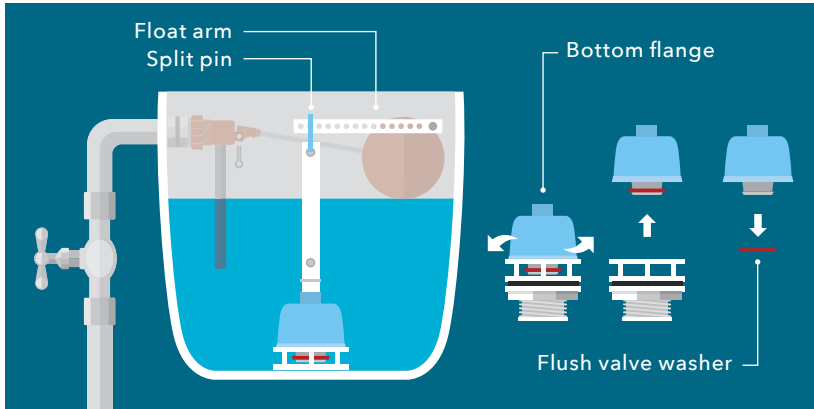
How to replace the **float valve** washer



- Step 1:** Close the isolating valve to shut off the water supply to the toilet.
- Step 2:** Remove the split pin and the float arm.
- Step 3:** Unscrew the cap.
- Step 4:** Remove the plunger by using water pressure to push it out. (Open the isolating valve slightly.)
- Step 5:** Unscrew the brass plunger to remove the washer held inside it.
- Step 6:** Fit a new washer. Reassemble the parts – step 4 to step 1.
- Step 7:** Open the isolating valve slowly and check that the **float valve** closes when the cistern is full.

TIP: Different manufacturers use different mechanisms, so it is best to take your existing **float valve** with you when you purchase the new replacement washer to ensure you get the correct one. The supplier may even fit the new washer for you at the store.

How to replace the **flush valve** washer



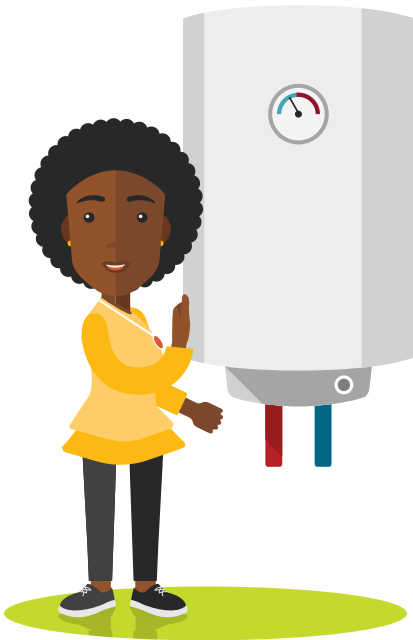
- Step 1:** Close the isolating valve to shut off the water supply to the toilet.
- Step 2:** Remove the split pin and the float arm.
- Step 3:** Remove the spindle assembly. Be careful not to break the mechanism.
- Step 4:** Unscrew the bottom flange and remove the washer (remember which side this washer faced to fit the new washer). Do not apply a lot of force. If you cannot remove the top part of the **flush valve**, call a qualified plumber.
- Step 5:** Install a new washer with the sloping side facing upwards. Reassemble the parts - step 4 to step 1.
- Step 6:** Open the isolating valve slowly and check that there are no more leaks.

TIP: Different manufacturers use different mechanisms, so it is best to take your existing old washer with you when you purchase the new replacement washer to ensure you get the correct one.

How to check for a hot water cylinder leak

Hot water cylinders or geysers, like toilet cisterns, have an overflow pipe.

Most modern geysers are high-pressure with thermostat-control and fitted with a pressure-reducing valve. It is normal for water to drip from the overflow pipe, which is connected to an expansion relief valve. Water expands when heated and a small amount is released through this valve to relieve the pressure inside the cylinder and prevent it from bursting. The drip could continue for an hour or more, losing up to 2 litres a day. However, this should stop when the temperature stabilises. Instead of wasting this water, the overflow can be directed to the garden, or collected from the pipe to water plants.



If it drips continuously, or the leaking is excessive, call a qualified plumber.

A gravity-fed (non-pressurised) cylinder has a float valve similar to that in a toilet cistern to control water flow. This can be adjusted to correct the water level and reduce water overflow or replace the float valve washer if worn.

Both high-pressure and gravity-fed geysers are complex and can be very dangerous. The City recommends that you call a qualified plumber once the leak is found.

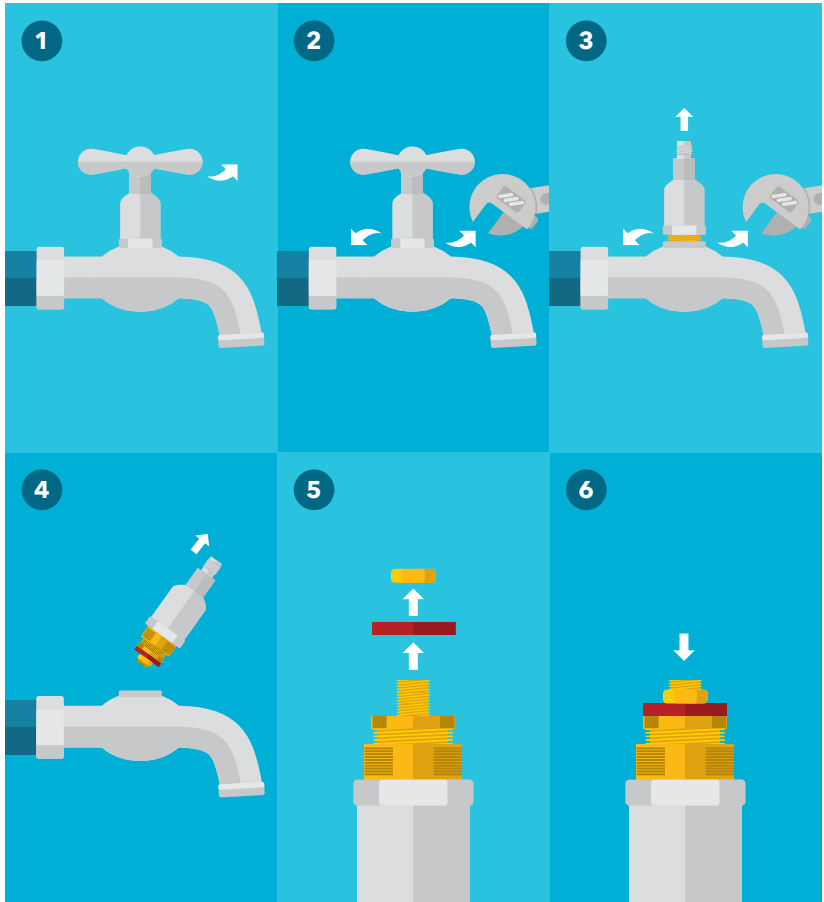
For a list of registered plumbers in Cape Town, visit www.capetown.gov.za/thinkwater. Note that the City is not responsible for any work done by any plumber on this list.

How to replace a tap washer

Check all the taps in the house and garden for drips. A dripping tap usually means the washer needs replacing.

- Step 1:** Close the main isolating valve or the isolating valve linked to the tap, then open the tap fully.
- Step 2:** Unscrew the cover. When unscrewing the tap, wrap a cloth around it to prevent it from being scratched.
- Step 3:** Unscrew the spindle.
- Step 4:** Remove the spindle.
- Step 5:** Unscrew the washer-retaining nut and remove the washer.
- Step 6:** Fit a new washer and replace the nut. Make sure that you have the correct washer size for the tap.
- Step 7:** Reinstall the spindle and screw down the cover.
- Step 8:** Close the tap, open the water supply slowly and check for leaks again. Do not overtighten the tap, as the new washer is softer and is easily damaged.

Note that some taps are mixers with hot and cold water supply controlled from a single lever, usually at the base of the tap. These, and some other kinds of taps, may not have washers but rather integrated modules that need to be replaced. These are often specific to the manufacturer and model of tap. For leaks from these and other washerless taps, it is best to call a qualified plumber.

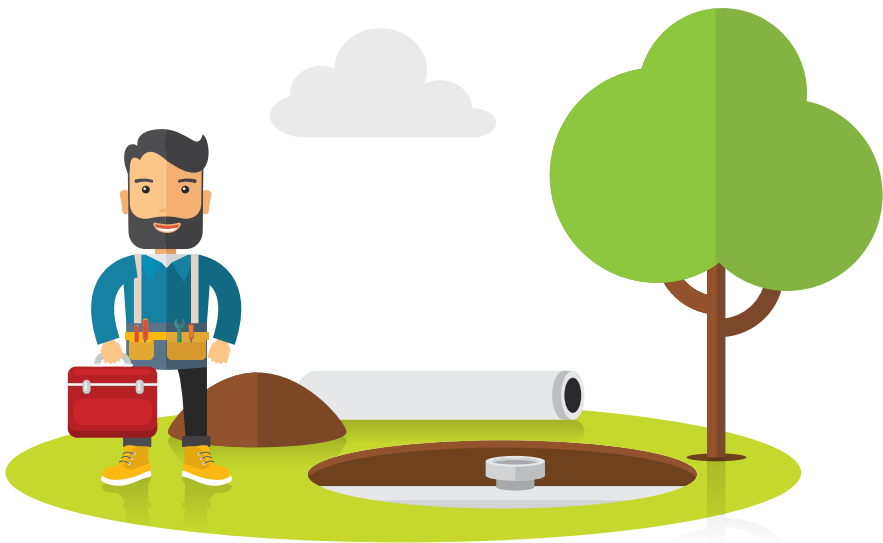


How to check for underground leaks

Some underground leaks are easy to detect, while others are more difficult. Even if you see a particularly green patch of lawn, sink hole, mushy patch or darker soil in your garden, the leak itself can be hard to pinpoint. Underground leaks can also show up as rising damp on a wall or bubbling and sloughing paint or plaster near the ground.

Points to consider when dealing with a suspected underground leak:

- Has there been recent building or landscaping activity on or near the premises? This may give you a starting point for your search.
- If you were to find the leak in an underground pipe, would you be capable of properly replacing pipe sections or fittings to fix the leak yourself? If not, then consider calling a qualified plumber to locate the leak for you as part of the repair job.



Most underground leaks are not a typical DIY project. Once you are sure that all other possible leak sources have been addressed from taps, toilets and geysers, and there is still water consumption indicated by properly reading your meter, most people will need to contact a qualified plumber to address the hidden leak. However, giving the plumber a likely starting point to find the leak may be helpful and could lower the cost of the repairs.

It may be necessary to call in the services of a leak detection expert to find the leak using sophisticated equipment.





Frequently Asked Questions.

How do I shut off the mains water supply?

The main tap (stopcock) to your property is the main isolating valve. This is what you turn off to stop the water supply when you need to fix a leak. It can be in the form of a stopcock or a ball valve located on the pipe on your property between the meter and the house. Since the pipe is usually laid underground, it can develop underground leaks. Always keep the area around the stopcock clear and clean to ensure you have immediate access to it in the event you have to shut off the water supply to the house.

Why is it important to open stopcocks and isolating valves slowly?

A stopcock or isolating valve is designed to allow a gradual closing of the supply. Remember, if this stopcock is closed suddenly, you may hear a slamming or banging noise in your water pipes. This is called 'water hammer' and is caused by a sudden change in water flow. With time, this can loosen brackets holding the pipes, and increase the likelihood of leaks. Closing a stopcock should be done with care and only when essential.

Who is responsible for repairing leaks?

When the water meter is located outside the property, the City of Cape Town will repair the leak if it is at the meter or on the underground pipe up to the boundary of your property. The owner or occupier is liable for repairs on the inside of property boundaries. When the meter is located inside the property boundary, the City will repair the pipe up to the inlet side of the meter, and the meter itself. Please ensure that the City has safe access to this pipe and the water meter.

I have fixed all the leaks. How else can I reduce my water consumption?

Many actions can be taken to use even less water in most households and work places. Gardens and pools use a lot of water. The biggest uses indoors are typically washing bodies, flushing toilets and washing laundry. So, take very short showers; re-use your water; only flush when necessary; install efficient showerheads and taps; cover your pool and plant a water-wise garden. These and many other no-cost, low-cost and invest-to-save ideas are explained in more detail on the City's website at www.capetown.gov.za/thinkwater.

THINK WATER

CARE A LITTLE. SAVE A LOT.

Use water wisely, and help others to do so too. Use this guide to help find and fix leaks, and also see other useful guides and information about water restrictions, the City's Water By-law and saving water at www.capetown.gov.za/thinkwater

Don't delay: report burst pipes, faulty meters and water restriction offences:

- Call **0860 103 089** (choose option 2: water-related faults)
- SMS **31373** (max of 160 characters)
- Email water@capetown.gov.za
- Online through our Service Requests tool at www.capetown.gov.za/servicerequests

Further resources and information on the current status of our water system are available at www.capetown.gov.za/thinkwater

Produced by Water and Sanitation Department of the City of Cape Town.

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Please note that this document may be updated from time to time. Visit www.capetown.gov.za/thinkwater to check for the most recent version as a free electronic download.

<http://capetown.gov.za/thinkwater>



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