eBook

Your Guide to Interior Basement Waterproofing Methods in 2023

So, You Need To Hire A Waterproofing Contractor

We're honoured to provide these resources to help you on your journey!

We know reputations are hard to build and easy to lose. That's why our business is built around two simple promises:

✔ Honesty and Transparency

We **truly** want each step of your journey – from the very first Google search to a leak free basement – to be a positive one!

Of course we want your business, but first, we need to earn your trust.

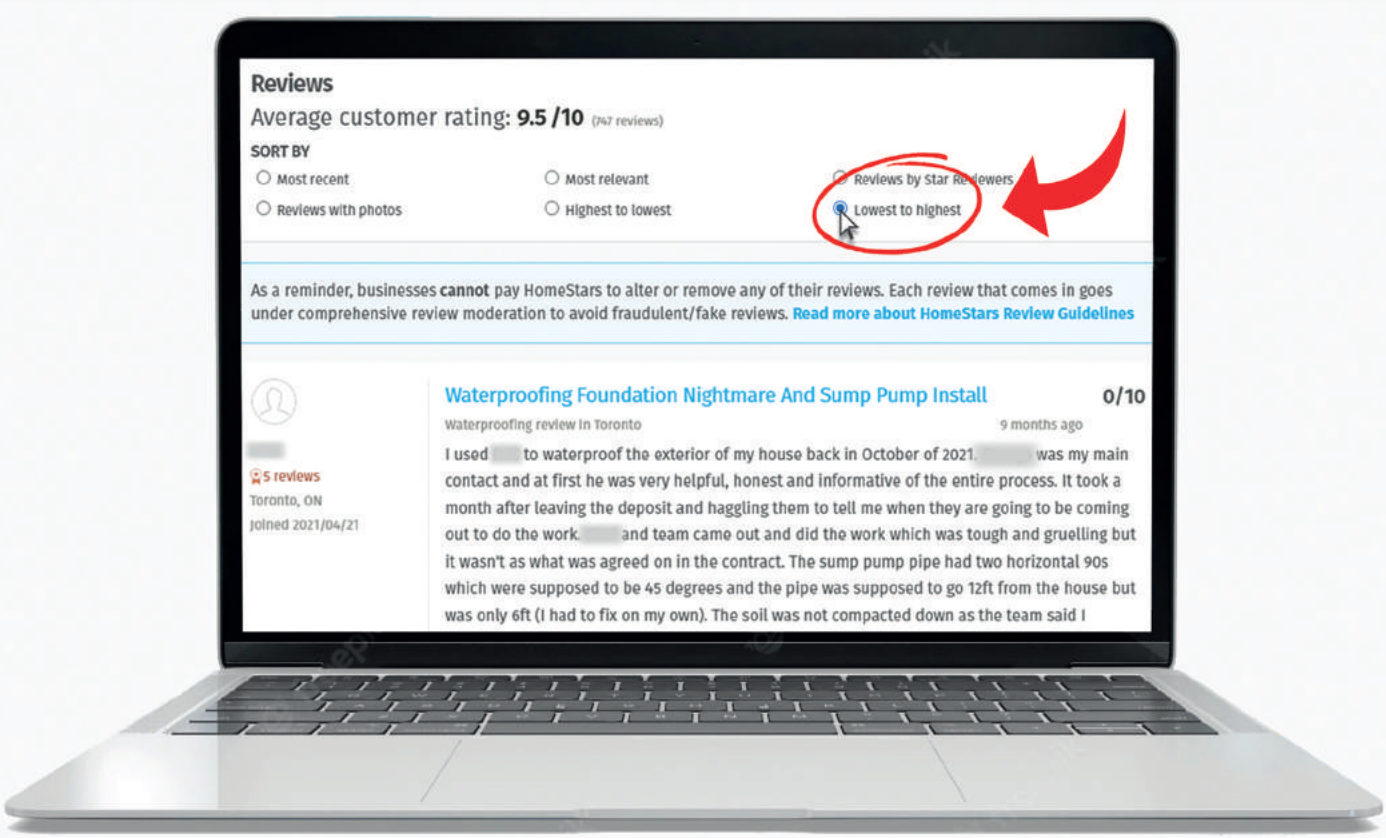
Who Is GJ MacRae Foundation Repair?

Family Owned and Operated Since 1975: We are the Original Wetbasements Experts!

GJ MacRae Foundation Repair is a full-service, second generation foundation repair company located in the Greater Toronto Area that specializes in basement waterproofing, structural foundation repair and underpinning. With over 10,000 completed projects to date, we wouldn't be here without the trust of discerning homeowners like you and we'd love to add your story to our ever-growing list of positive testimonials and ratings!

Check out our testimonials by clicking this link or visit us online at wetbasements.com/reviews

How To Navigate Online Reviews



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This might be the most important page you read!

CHAPTER 01

The Early Stages of Waterproofing

If you're still in the early stages of your journey, you might not yet know whether you need to waterproof your basement from the inside or the outside, or even what method of waterproofing is best suited to your type of foundation walls.

Essentially, there are *three* main types of basement waterproofing in the Greater Toronto Area.

01

Interior Basement Waterproofing

An interior basement waterproofing method consisting of interior weeping tile systems, damp proofing membranes and sump boxes with sump pumps.

02

Foundation Crack Injections

A basement waterproofing method consisting of resin or foam crack injections directed at filling the existing foundation crack to seal from the interior.

03

Exterior Basement Waterproofing

A basement waterproofing method consisting of exterior membranes and weeping tile to keep water on the outside of the foundation and drain it away from the structure.

CHAPTER 02

Basement Waterproofing Comparison Chart

Want to skip the reading (can't blame you) and get a quick and easy comparison chart of the three types of basement waterproofing?

This chart covers the pros and cons of interior basement waterproofing, foundation crack injection and exterior basement waterproofing.

Desired Waterproofing Qualities	Interior	Crack Injection	Exterior
Durability	Medium	Low	High
Hydrostatic Pressure Relief	None	None	High
No Demolotion of Interior	High Demo	Medium Demo	None
No Demolotion of Exterior	None	None	Medium
Resale Value	Medium	Low	High
Speed of Installation	Slow	Fast	Medium
Low Maintenance	Low	Low	None
Low Initial Cost	Medium	Low	High

If you want to learn more about basement waterproofing, keep reading!

This comprehensive guide was built on decades of experience gained through over 10,000 successful waterproofing projects over the course of 40 years. We couldn't have created this guide without feedback from potential customers like you!

If you still have questions after reading this guide, click the link below or visit us online at **wetbasements.com**

GET IN TOUCH WITH US

CHAPTER 03

What Type of Foundation Wall Do I Have?

Poured Concrete Foundation Wall

MODERN

A poured concrete foundation wall is generally the most typical concrete structure in Southern Ontario. If your home was built in the last 40 years it is likely poured concrete.

Cinderblock Foundation Wall

SEMI-MODERN

A cinderblock foundation wall is generally the second most typical concrete structure in Southern Ontario. If your home was built in the last 70 years it is likely a cinderblock wall.

Brick Foundation Wall

CENTURY

A brick foundation wall is the third most typical masonry structure in Southern Ontario. If your home was built in the last 100 years it is likely a brick foundation wall.

Rubblestone Foundation Wall

HERITAGE

A rubblestone or fieldstone foundation wall is the fourth most typical masonry structure in Southern Ontario. If your home was built more than 100 years ago it is likely a rubblestone foundation wall.

CHAPTER 04

Why Is My Basement Leaking?

So, Why Is My Basement Suddenly Leaking?

Basements leak for various reasons over time. These issues can stem from settling, lack of waterproofing considerations, existing foundation cracks, leaking tie-rod holes, damaged weeping tile systems, hydrostatic pressure, unmaintained eavestrough systems and/or a long term negative soil grade.

To start, grading and drainage are crucial areas to check when trying to determine why water is getting into your basement.

During a large rainstorm, do you see significant volumes of water pooling around your foundation walls? If so, repairing your grade may solve the issue.

Additionally, solving your basement leak may be as simple as connecting a longer lead pipe to the end of your downspouts to get water away from your home or repairing a damaged or choked eavestrough systems that may be spilling over.

If these reasons aren't the cause, one of the following, or a combination of, continue to the next page for a more detailed explanation of additional foundation and structural-related defects that may need to be remedied to permanently solve your basement leaking issue.

CHAPTER 04

Clogged Weeping Tile Systems

What Does Clogged Or Damaged Weeping Tile Look Like?

Signs of a clogged weeping tile system are water penetration at the foundation wall or floor seam, bowing and cracked foundation walls, and sump pump pits that are dry, even during times of heavy rain or spring runoff.

Weeping tile is simply a perimeter drain that runs around the bottom of the outside of your home and connects to a sump pump box, or to the storm water sewer at the street. Home builders began installing weeping tile at the beginning of the 19th century, and they were originally made from clay pipes that were laid end to end.

These weeping tile systems prevented groundwater from building up in the soil and raising the water table.

As time passes, weeping tile systems can become clogged and hydrostatic pressure can force water through cracks in foundation walls and through openings caused by expansion and contraction in the footing/foundation wall joint, and even up through floor cracks.

Hydrostatic pressure can also cause major structural damage to foundation walls and is especially a problem during freeze/thaw cycles, and during spring runoff, when the soil around your home is heavily saturated. In rare cases, existing weeping tile systems can be cleaned out using high pressure water but the majority of the time, clogged sections need to be replaced with brand new weeping tile during an interior or exterior waterproofing repair.

CHAPTER 04

Hydrostatic Pressure

What Is Hydrostatic Pressure And How Do I Fix It?

Hydrostatic pressure occurs when water accumulates around your foundation. As gravity pushes down on the water, it forces its way up through cracks in basement walls, cracks in floors, and along the seam between the walls of your foundation and the footing that the walls are supported on. Water weighs roughly 60 pounds per cubic foot. Heavily saturated soils (especially expansive clay soils, which are prevalent in the GTA), can exert **tons** of force against your foundation walls. Block walls are especially susceptible to cracking, and even failing from the force exerted by hydrostatic pressure.

If applicable, exterior waterproofing that relieves this pressure and redirects the water away from the structure is always the best line of defense.

Alternatively, interior waterproofing systems require drilling into cinderblock cavities at the footing level and should only be done if there is very minimal cracking to begin with, or if there is no other choice due to a lack of access to perform exterior waterproofing repairs.

Essentially, alleviating overall hydrostatic pressure around your foundation wall can be a labour intensive process but can be achieved in a straightforward manner using a mixture of old world techniques and modern materials such as weeping tile, french drains, geotextiles, clear gravel, sump boxes and sump pumps.

CHAPTER 04

Cracks In Concrete Walls and Floors

How Did My Foundation Wall And Concrete Floor Crack?

Cracks can occur during the backfilling process while the concrete has not yet cured, or can occur years down the road due to the expansion and contraction of soils from water saturation and severe freeze/thaw cycles.

Steel rods are generally used to hold the concrete forms together during the foundation pouring process and generally after removing the rods, the remaining holes are filled with hydraulic cement. If this is not done properly, these tie rod holes can also provide a weak spot for water to penetrate through. By drilling out these tie rod holes and re-packing them properly with hydraulic cement, this type of repair can be completed in a fairly straightforward manner.

Clogged window well drains can also put stress on the foundation in a spot that is already weakened by the window opening. Cracks often occur at the bottom corners. Removing the window well, re-establishing a proper drain from top to bottom, waterproofing the area and putting in a new window well with fresh gravel is the best solution in this case.

If water is coming up through cracks in the floor, this can often be remedied with the installation of a sump system to lower the water table under the floor. In extreme cases, a weeping tile system needs to be installed in sections of the floor to pull all the water towards the sump.

CHAPTER 04

Eavestrough, Trees, Grade and Drought

What Do Eavestrough, Grade and Drought Have To Do With My Leak?

Eavestrough maintenance is absolutely key in preventing basement leaks and foundation damage. Weeping tile systems were never designed to handle the additional influx of overflowing eavestrough systems.

Trees and shrubs around your home can help provide shade and prevent evaporation but you don't want large trees with large, extensive root systems too close. We've seen tree roots not only completely clog up weeping tile systems, but almost push in the walls of homes over time, resulting in walls having to be completely replaced!

Grade of soil is essential to keeping the majority of water volume draining away from your concrete walls.

Drought causes the soil around your home to shrink and creates cavities or gaps between the ground and your foundation wall. Overtime, your foundation cracks as gravity pushes the weight of your home down into the newly created gaps. This process is very similar to "settlement" or "settling", and has the same sort of negative effect on your foundation wall. While some amount of settling is normal, a drought can accelerate this.

Lots of rain right after a long drought can be bad too. Expansive clay will tend to quickly absorb the water and swell in a short period of time. This rapid change in soil shape beneath your foundation can easily cause cracks and accelerated damage.

CHAPTER 05

Interior Basement Waterproofing Repair Methods

Interior or inside waterproofing is the best solution when access to an exterior foundation wall is limited or digging down from the outside would be too disruptive or too expensive due to obstructions like flagstone patios, interlock, decks or pools. An interior solution helps to significantly alleviate hydrostatic pressure that builds up under the concrete floor.

Block foundations that are hollow are good candidates for interior solutions, providing the walls are structurally sound.

Cinderblock walls are engineered with hollow cores to capture any water or moisture that penetrates their exterior, and if your block foundation walls are free from cracks or structural defects and the basement is unfinished, an interior waterproofing solution *can* be the most cost effective way to stop basement leaks.

Additionally, when it comes to keeping your basement dry from the inside, weeping tile is truly the backbone of the operation. Its simplicity and reliability through the years has been unquestioned and no major structural changes have been made to these systems in over a century - thats how reliable they are!

Weeping tile has the ability to disallow water levels to rise above them. They let water 'weep' in, then redirect that water to a more suitable location such as a sump pump or floor drain.

When a robust weeping tile system is installed properly it can single handedly keep entire water tables below them at bay and not allow the water table to rise above a certain threshold. Weeping tile is a fundamental chapter of the building code for a reason and when installed properly from the interior can drain water almost indefinitely.

CHAPTER 05

Interior Basement Waterproofing Repair Methods

✕ Incorrect Interior Solutions:

Sealants/Coatings On The Inside:
Painting foundation walls and floors with a cement-based coatings isnt good. This technique doesn't hold up to constant hydrostatic pressure from the outside and will only work for a month or two. Additionally, if a foundation wall is full of water and a sealant or coating is applied to the interior this can lock water in the wall and significantly deteriorate the foundation especially through a freeze/thaw cycle.

Interior Baseboard Systems:
This technique involves gluing a hollow plastic baseboard along the junction between the basement floor and the wall and directing the water to a sump pump, but unfortunately any water coming in above the height of the baseboard finds its way into the basement. These systems also do nothing to rectify hydrostatic pressure coming up under the floor and their rate of clogging and decay is quite high.

Concrete Crack Injections:
This method involves injecting either epoxy resin or polyurethane resin into the crack from the inside. This approach can only work if the crack is completely dry and there is no hydrostatic pressure to cause further settling or shifting. Also, because the resin remains in a liquid state for several hours before it hardens, it can actually run out of a crack and create voids in the repair, which allows water to seep in. Gravity also causes the resin to settle, which creates openings at the top of the repair. These resins do not bond well with wet concrete, and water seeping in from the outside creates channels through the resin before it gets a chance to harden. Basement waterproofers that do crack injections will talk about how strong the resin is when this is actually a minus rather than a plus, as the resin does not flex, and when movement occurs again these injections generally fail.

CHAPTER 05

Interior Basement Waterproofing Repair Methods

✔ **Correct** Interior Solutions:

Proper diagnosis first and foremost is the most important variable in determining a lasting basement waterproofing repair strategy. Let our experience and expertise work for you!

Perforated Weeping Tile Systems:
The interior or inside weeping tile system is the most fundamental part of any inside waterproofing project. This material is long lasting and considered to be the industry standard material for mitigating basement leaks and water table issues. No other material should be used!

Geotextile Filter Cloth:
As water makes its way into a weeping tile system it has the tendency to bring sediment with it. Proper filter cloth technologies that surrounding weeping tile and sump basins should be used at all times during any interior basement waterproofing repair.

Floor Drain Connection:
If a floor drain is available within the repair areas, this is one of the best weeping tile connections available due to the fact that it operates strictly off gravity. If no floor drain connection is available, a sump box is the next best option.

Sump Box and Sump Pump:
A properly installed weeping tile system is the first phase of any lasting interior basement waterproofing project, but the collected water needs to drain somewhere! This is where a sump box and sump pump comes in. A properly installed sump box and pump is a reliable way to lower water tables for a dry basement!

Drainageboard with Topstraps:
Drainageboard or dimpleboard is the only damp-proofing material that should be used as the outer layer in all phases of interior or exterior basement waterproofing.

CHAPTER 06

Mistakes To Avoid When Waterproofing Your Home

Mistake #1: Not Getting Everything in Writing

Let's say your contractor just started excavating the area outside your home. Later that day, they knock on the door to ask how you'd like to pay the dirt hauling fees. This happens all the time, especially if your contract only includes the basics and other costs aren't discussed before the project starts.

The estimate you receive should disclose all potential costs and clearly specify everything that is and is not included in the scope of work. Make sure you get everything in writing.

Mistake #2: Starting The Project With Unknown Costs

This is different than surprise costs popping up during a project. Unknown costs are those you know will arise without knowing their precise amounts. Some contractors will only give you rough prices for additional items, knowing full well you won't actually know the final cost for these other items. These contractors are more interested in closing the sale then keeping to the customers budget. If I see that your basement wall will need carbon fibre strengthening, I can calculate it'll cost you around $12,000. If I were a shady contractor, I might tell you that you'll need wall strengthening at a price of $35 per square face foot, which will cost a few thousand dollars. This makes your cost look lower up front. But after the job is finished, you get a $12,000 bill for that wall! **It happens all the time so get everything else you might need in writing before construction begins.**

CHAPTER 06

Mistakes To Avoid When Waterproofing Your Home

Mistake #3: Not Properly Vetting Your Waterproofing Contractor

Interview your contractor and contact their references.

If your waterproofing contractor can't or won't give you references, don't work with them. Ideally, our company profile on HomeStars and Google has one of the highest ratings in the GTA. We can provide a list of customers you're welcome and encouraged to call.

If a contractor tells you their customers won't share their contact information, it's also a red flag. Happy customers often want to tell others about their great experience!

Mistake #4: Making Decisions Based Solely On Price

It always baffles us when customers say they want super low prices, great quality and great service. The reality is that there are three switches you can flip for any purchase: Good, fast, and cheap. However, you can only ever flip two of these three switches at any time. Fast and cheap won't be good. Good and cheap won't be fast. And fast and good won't be cheap.

There will always be companies ready to waterproof your home for a lower price. Most of these companies that compete primarily on price will go out of business and void their warranty. Price will always be an important part of your decision, but if price is your first priority, you may very well sacrifice years of quality for the ability to save a little money today.

CHAPTER 06

Mistakes To Avoid When Waterproofing Your Home

Mistake #5: Focusing On The Short Term

Make your decisions based on how long you think you'll live in your home, not just on your circumstances today. The wrong material and or the wrong contractor will cost you more than you think you'll save.

Let's say you decide to inject a crack in your basement wall that's leaking from the inside, rather than do it from the outside, saving yourself a couple of thousand dollars. You repair the drywall and fix your damaged floor. Two years later the same crack leaks again, the contractor won't return your calls, and you're out thousands of dollars in repairs on the inside, in addition to having to pay a competent contractor to fix things properly from the outside.

Mistake #6: Buying Based On Repair Timeframe

Many homeowners will discover their preferred contractor can't start their project right away because the contractors already booked on another project. Don't trust your basement to a company that promises a rapid project start.

Waterproofing contractors in high demand tend to be quality contractors - that's why they have so much work!

CHAPTER 06

Mistakes To Avoid When Waterproofing Your Home

Mistake #7: Contractor Deposits

Many homeowners may think that giving a basement waterproofing contractor a deposit in advance of starting the work is a normal practice - **its not!** A solid contractor shouldn't require any deposit to cooridinate the start of your basement waterproofing project.

Honest and thorough contractors generally collect "weekly progress payments" as the work progresses, but never before.

Mistake #8: Not Trusting Your Gut

You might be nearly ready to hire a waterproofing contractor after reading this e-book.

The more research you do, the more accurately you'll be able to identify the right contractor. But sometimes, you just have to trust your gut.

This might not be the most scientific approach, but I've seen people regret choosing against their gut instinct far too often to ignore its impact on outcomes.

If your project runs into problems, you're ultimately dependent on the integrity of the people you've trusted to waterproof your home. Make sure they're worthy of your trust.

The Importance Of A Waterproofing Warranty

Truly, the most important long term factor that should be considered when choosing a foundation waterproofing contractor is the warranty issuance and what that may mean in the long term.

We're pioneers in the industry with over 48 years of experience and 10,000+ issued waterproofing warranties to date, so we dont just issue a document but we truly provide an award winning, reliable and most time-tested waterproofing warranties available today in the GTA, **period**.

Complex waterproofing and drainage considerations coupled with a high degree of difficulty and slim margins for error usually drive contractors out of business in a very short period of time. The end result? They close their doors and shut off their phones, leaving their warranty void and the customer stranded.

Beware of empty *'lifetime warranty'* promises.

Read more by clicking here.

CHAPTER 08

Finding A Reputable Waterproofing Contractor

If you don't plan on waterproofing your home yourself, this might be the most important page you'll read! You're going to entrust your basement (and potentially quite a bit of money) to a contractor who'll ultimately make or break the whole project. We've worked or consulted with thousands of waterproofing customers around the GTA, so we've seen the good, the bad, and the ugly of our industry.

Everything we've seen and experienced regarding waterproofing contractors can be summed up simply...

✔ **Integrity Matters.**

BONUS

Project Video Timelapses

Interior/Inside Basement Waterproofing

TIMELAPSE PROJECT FOOTAGE **(YOUTUBE)**

Watch a video of us installing a complete interior weeping tile system with sump basin and pump in timelapse form, 3 days in 3 minutes!

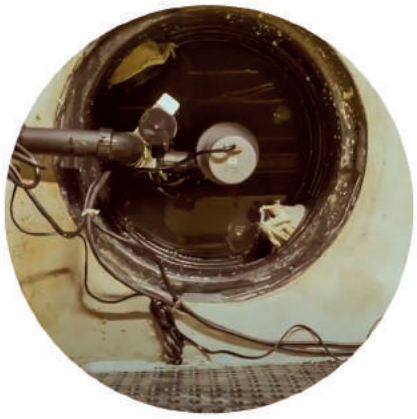
Click To View: https://youtu.be/tc23sABGZNs

Sump Pump and Battery Backup Install

TIMELAPSE PROJECT FOOTAGE **(YOUTUBE)**

Watch a video of us installing a complete sump pump system with a battery backup and check valve in timelapse form, 5 hours in 1.5 minutes!

Click To View: https://youtu.be/g-6waRU5YW0



Complete Underpinning Project

TIMELAPSE PROJECT FOOTAGE **(YOUTUBE)**

Watch a video of us completing a full perimeter underpinning project with excavation and interior basement waterproofing, 28 days in 10 minutes!

Click To View: https://youtu.be/DVhR7coQDNc

CLICK HERE FOR MORE TIMELAPSE VIDEOS

or visit us online at wetbasements.com