

# Basement Waterproofing from the Inside

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## Waterproofing Shotcrete Basement Walls

This is a case study I'd like to share with you which involves waterproofing below-ground basements and using crack injection to repair concrete cracks.

### Shotcrete Wall Design

This is a fairly new commercial construction - just a couple of years old. The basement design is the conventional situation of a wet basement with shotcrete walls – pier & beam construction.

The below ground basement was dug-down and excavated out and then Concrete Shotcrete afterwards to create the basement wall surface.

### Waterproofing Concrete Walls

The first slide shows the water migrating out from underneath the car ramp down into the below ground carpark from street-level.

Water leaks are actually coming out from underneath the concrete car ramp and the ground slab.

The basement wall design is pier & beam construction with the capping beam at the top.

Water leaks are actually migrating from the capping beam and down the face of the shotcrete basement wall. This is a dangerous situation as water is getting into the exit sign and also all over the copper piping.

### Water Leaks & Basement Walls

With ground water seepage in basements there is an immense amount of salts affecting the concrete walls, floors, ceilings & fittings. The salts are highly destructive, particularly to copper pipes, and galvanized, and zinc alum fittings. Water leaking causes deterioration very, very rapidly and also cause immense rust.

These safety issues mean that basement water leaks require immediate and expert waterproofing solutions.

## Basement Concrete Crack Repairs

The cracking in the basement is extensive in this particular case there is water weeping everywhere.

There are a number of images demonstrating concrete cracks involving water leaks down the surface of the basement wall.

Depending on the basement design, some of the water leaks are muddy groundwater that's flowing into the basement from ground level behind. Other concrete cracks show clear water leaking. It is different circumstances depending on what's happening on the ground outside and above.

## Basement Waterproofing System

**How to Fix a Leaky Basement Wall** -The method we used to rectify these below groundwater leaks was using Polyurethane Crack Injection.

**Using Concrete Crack Injection** – we drill into or near the cracks and inject at high pressure a special polyurethane resin which reacts with the water.

**Water Reactive Polyurethane Injection** - When Polyurethane Resin reacts with water, it foams up and expands up to ten times its size.

Some of these images show the crack injection foaming reaction taking place - this foaming is actually a good reaction. This is what we're looking for- to fix basement water leaks this is what we are looking for.

The water reactive resin foams, and basically bubbles out, sealing the concrete cracks as it comes out.

**Concrete Crack Repairs** - we try to get in behind the shotcrete wall and seal the water from coming into the basement walls from behind.

## Waterproofing Membranes & Products

As expert waterproofers we can offer a waterproofing system which is an alternative method and acts as a preventative membrane so basement water leaks do not occur in the first place.

### Providing Waterproofing Solutions for Basement Water Leaks

The F.E.W Team will spray apply [Liquid Rubber Membrane](#) behind the shotcrete concrete wall.

**A Spray Apply Liquid Waterproofing System** creates a blanket membrane behind the shot crete wall.

This flexible and monolithic liquid waterproof membrane directs the water to the bottom and is effectively still a wet basement. However a Spray Applied Waterproofing Solution is designed for below ground structures and basements and will stop the destruction of concrete shotcrete walls and also prevent concrete cracks and leaching - these concrete cracks cause many basement water problems.

Specialist Basement Waterproofing Contractor

## **F.E.W Waterproofing are proud to be Australian Certified Applicators for Liquid Rubber systems**

As Expert Waterproofers, our Team were called in for this project to provide a waterproofing and concrete repair solution for a basement which had severe water leaks down the concrete walls.

These water leaks caused muddy water to pool on the basement concrete floors and residents were slipping and falling over.

We are a **Registered Building Practitioner** specialising in **Waterproofing Applications** – so we provide Structural and Construction knowledge to assess and provide waterproofing solutions.

For contact information about our waterproofing services and how the F.E.W Waterproofing Team can provide waterproofing systems for below ground basements:

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that thinks CONSTRUCTION**