

Basement Carpark Water-sealed

INDUSTRY

Commercial

STRUCTURE

Apartment Building

PROBLEM

Sinking Floor

LOCATION

NSW, Australia

DURATION / YEAR

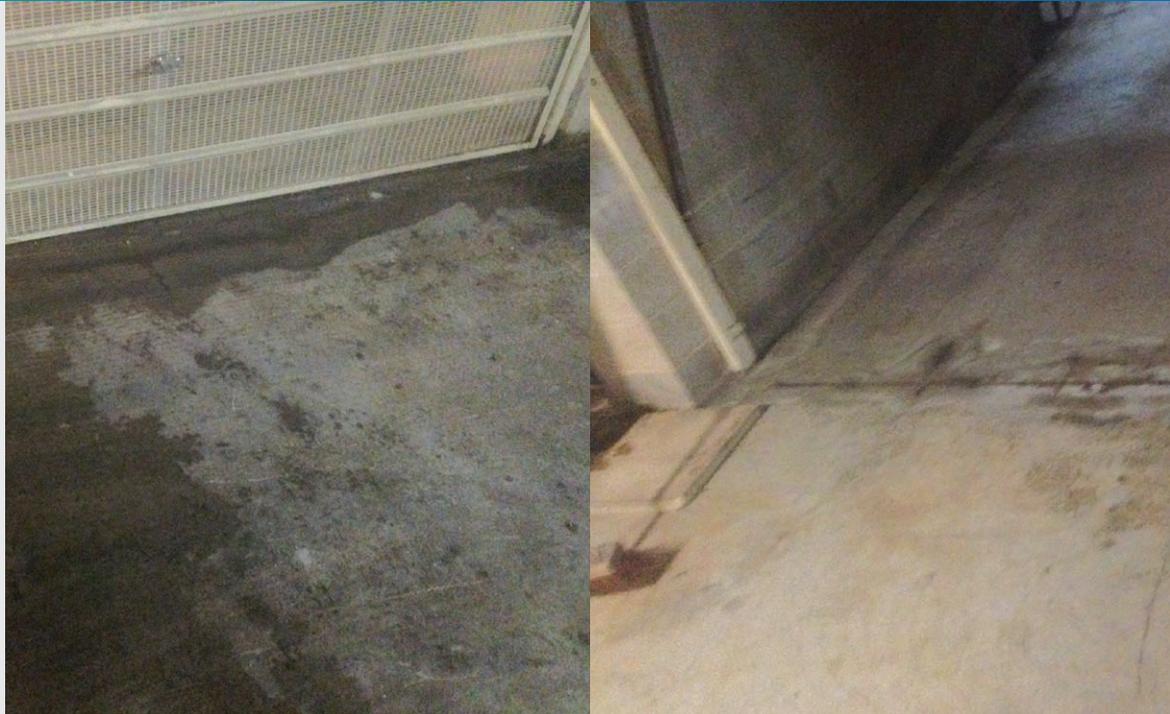
1 day / 2014

TECHNOLOGY

Tamacryl 2000

BUSINESS UNIT

Mainmark Australia



Summary

This project demonstrates the injection of a flexible, acrylic resin material being used successfully, in wet conditions, to seal a section of basement car-park against further ingress of water and flooding.

Objectives

The basement car-park had a history of water ingress and there were poor surface and sub-surface conditions. The main source of water ingress into the basement, an existing cold joint in the concrete slab and shrinkage cracking, had to be completely sealed to prevent continuing groundwater ingress.

Solution

Having undertaken a risk assessment in conjunction with the body corporate representative and in order to begin safely, scans were undertaken to establish the exact locations of the multiple underground services (water, electricity, gas and sewerage).

The works were planned carefully to ensure the least amount of disruption to residents. Cars and property adjacent to the works were covered with drop sheets. After careful and precise drilling around the services, the proprietary acrylic resin was injected and pumped

under low pressure into the cracking within the concrete. A small mobile pumping unit was used, injecting via 12 small diameter (12 to 16 mm) drilled injection holes within the existing reinforced basement floor.

The waterproofing resin is a flexible acrylic material, which will accommodate vibrations and minor structural movement in accordance with the product's compressive, flexural and tensile properties. The material is an environmentally inert blend of acrylic polymers, which is applied in conjunction with an accelerator and catalyst system. Upon mixing, an irreversible and permanent chemical reaction occurs, forming a waterproof gel. It is insensitive to moisture and will cure in a damp environment. Injection was carried out along the alignment of the existing cold joint and cracks in the concrete slab where the water had been entering the basement. This project was completed while the area was still very wet.

Finally the area was pressure washed to remove any traces of resin on the surface. The application took just one day. The treatment was completely successful in sealing the floor slab to exclude groundwater from the site and prevent future ingress.

Above: This basement car-park had a history of flooding and it was partially flooded when the water-sealing project was undertaken. However it began to dry out immediately the injections of waterproofing material had been completed, as shown on the right.