

# Wellington culvert rehabilitated with ENCAP6™

## INDUSTRY

Infrastructure

## STRUCTURE

Culvert

## PROBLEM

Ageing Infrastructure

## LOCATION

Porirua, Wellington,  
New Zealand

## DURATION / YEAR

14 days / June 2016

## TECHNOLOGY

ENCAP6™, Uretek®

## BUSINESS UNIT

Mainmark New Zealand

## Pictured:

Before and after ENCAP6™ application



## Summary

Mainmark was commissioned to remediate a large culvert that runs under State Highway 58 near Murphy's Road, Wellington. The culvert was suffering from structural defects and pipe joint displacement due to its age.

A natural waterfall located 4m behind the culvert presented a major challenge on this project. With thousands of litres of water per minute continuously flowing through the culvert, a water diversion strategy was required before the remediation work could begin. Once the flow of water was blocked, leak sealing and void filling was required.

Environmental concerns also needed to be addressed because the water flowed into a natural riverbed. Any solution used could not contain contaminants and work needed to be undertaken in accordance with Rule R112 of the Proposed Natural Resources Plan.

Mainmark was able to successfully complete this project, despite its challenges, by working in close collaboration with the client, using ENCAP6™ and Uretek® resin solutions to remediate the culvert in just two weeks.

## Objectives

A remediation solution with a 10-year product guarantee was required to extend the life of the culvert

Before work could commence, Mainmark was required to put in place a flow diversion strategy to ensure there was

a dry working area while the remediation work was being completed.

## Solution

Mainmark utilised the company's proprietary solution ENCAP6™, an innovative corrosion protection system to improve the longevity of the ageing concrete culvert.

However, before ENCAP6™ was applied, the Mainmark team diverted the fast flowing water by pumping it across the State Highway to a stream on the opposite side of the road.

Once the culvert was dry, Mainmark prepared the culvert by bringing it up to the required temperature and preparing its interior by sealing the joints. The ENCAP6™ solution was then applied to the culvert, which measures 1.6m in diameter and 25m in length and sits approximately 2m-3m below the busy State Highway. ENCAP6™ was sprayed in layers and built up to a thickness of 9mm.

During the remediation work, voids were discovered around the pipe which Mainmark successfully addressed using Uretek® resin.

Mainmark's solution using ENCAP6™ and Uretek® resin to remediate the culvert, eliminated the need to replace it, thereby avoiding costly excavation and demolition. There was also no disruption to road or pedestrian traffic. Overall, the Mainmark approach resulted in significant time and cost savings while extending the life of the culvert by at least 10 years.