

## AN EFFECTIVE TREATMENT FOR AN ASR-DAMAGED RAIL BRIDGE

Strathfillan Creek Bridge, Victoria

CLIENT: V/LINE PTY LTD

### Project Highlights

- Extensive Alkali Silica Reaction (ASR) cracking to un-reinforced rail bridge piers and abutments.
- Condition assessment, design/specification and supervision of works.
- Four (4) stage remediation process including carbon fibre plates and wrapping.



## STRATHFILLAN CREEK BRIDGE RECTIFICATION WORKS

### Strathfillan Creek Bridge, Victoria

CLIENT: V/LINE PTY LTD

The Strathfillan Creek Rail Bridge lies on the Dunolly - St Arnaud rail line. The bridge has four spans each approximately 9 metres in length. The three bridge piers and the two abutments are constructed predominantly of unreinforced concrete, which were suffering from severe Alkali Silica Reaction (ASR) induced cracking, commonly known as 'concrete cancer'. V/Line required a remediation treatment to be designed to stabilise the deterioration.



The Strathfillan Creek bridge before works.



Concrete column prepped for crack injection.



The bridge after the completion of works.

## CHALLENGES

As the deterioration was being caused by the concrete itself, the main challenge was to develop a repair solution knowing that the problem could not be solved in its entirety. And knowing that deterioration would continue, ensure that the repair solution minimised its extent and provided additional ongoing support. A further challenge was to ensure the rehabilitation works allowed the bridge to remain in service while the works were in progress.

## SOLUTION

Infracorr developed a four stage remediation process to provide added support to the client and to waterproof the concrete piers and abutments. Stages consisted of:

- Extensive crack repairs via epoxy injection;
- The installation of 'Near Surface Mounted' (NSM) Carbon Fibre Reinforced Polymer (CFRP) Plates;
- Encapsulation of the piers with a CFRP Wrap to provide added support; and
- Application of waterproofing coatings to minimise moisture penetration and thereby slow the progress of ongoing ASR.

## RESULTS

V/Line requested specialist repair contractors to provide quotations for the repair works to be performed in accordance with Infracorr's design and specification plan. Under the watchful eye of Infracorr's onsite quality assurance and off-site support services, CPR completed successfully completed the project works from June to September 2015.