

Mine tunnel repair using ENCAP6®



INDUSTRY

Mining

STRUCTURE

Armco tunnel

PROBLEM

Potential tunnel failure

LOCATION

Cannington, QLD,
Australia

DURATION / YEAR

14 days / November 2016

TECHNOLOGY

ENCAP6®

BUSINESS UNIT

Mainmark Australia

Summary

At the Cannington silver and lead mine in north-west Queensland, an Armco (corrugated metal) tunnel under a thickener tank was beginning to show signs of age. The mine operators were investigating potential repair options when a failure of the tunnel became a significant risk. They needed to find the right solution, fast.

If the tunnel were to fail, it could create a substantial environmental and safety impact that would stop the mine's operations. It was essential to repair the tunnel with a solution that would last at least as long as the projected lifespan of the mine. Additionally, the mine operators required a solution that could be implemented without any break in operations and according to their Zero Harm safety principles.

Mine operators agreed to fully repair the tunnel using Mainmark's ENCAP6® engineered solution, instead of implementing a temporary fix or a non-engineered solution that had the potential to fail. Economical when compared to a complete asset replacement, and easy to apply, ENCAP6® also offered structural integrity for 50 years. As a result, the tunnel was fully repaired without having to pause mine operations, giving the mine operators peace of mind that the tunnel will remain safely operational for many years to come.

Objectives

The failing section of the Armco tunnel needed to be repaired without disrupting mine operations. This was important as any pause in operations means lost productivity and lost income for the mine.

Mine tunnel repair using ENCAP6® continued



Before and after ENCAP6® application

It was essential that the design engineering solution would give structural integrity equal to or greater than a three-millimetre Armco pipe.

The repair also had to be conducted using a method and materials that would provide Zero Harm to mine workers, other workers, the environment and the assets.

Solution

Mainmark used its technologically advanced ENCAP6® corrosion protection solution to seal, protect and structurally reinforce the tunnel. It offers a longer service life than other polymer systems, especially when in contact with moisture, water or chemicals, making it the ideal choice for the harsh environment of the Cannington silver and lead mine.

While the mine and engineers had considered other solutions, ENCAP6® was the most economical and best-suited product because of its ease of application, and required minimal people and equipment to apply. It is environmentally inert, fulfilling the mine's requirements for a Zero Harm solution.

Mainmark is specialist in the manufacture and installation of ENCAP6® and had the capability and experience to facilitate the engineering requirements and manufacturing needs of this project. As a result, the tunnel has been repaired according to the engineered design and all specified project requirements, including a 50-year lifespan.