

Mule Pass Tunnel

Tunnel crack sealing via Polyurethane resin injection



Project:

Mule Pass Tunnel Crack Sealing

Location:

Bisbee, Arizona

Owner/s:

Arizona DOT

Applicator / Contractor:

Meridiam Partners

Designer / Architect / Specifier:

Contractor design

Market sector:

Underground - Injection

Products used:

MasterRoc MP 351 LV

The Background:

The Mule Pass Tunnel, which was constructed 1958, was designed to enhance the transportation between Tombstone and Bisbee, Arizona. Stretching 1,400 feet in length, this tunnel holds the distinction of being Arizona's longest highway tunnel. A safety upgrade was completed by the Arizona Department of Transportation in the spring of 2024.

The Challenge

Over the past six decades, the concrete walls and ceilings of the tunnel have developed extensive cracking. Effectively sealing these cracks has presented significant challenges due to the tunnel's considerable size and its deteriorated condition.



The Solution

MasterRoc MP 35I LV, a polyurethane injection resin developed by Master Builders Solutions, proved to be an ideal solution to address the challenges at hand. Its key attributes – low viscosity, rapid curing properties, and the formation of flexible cured foam – made it particularly suitable for the task. The overhead injection of the accelerated resin was executed with precision, effectively sealing the cracks in the tunnel structure.

The benefits:

- Low viscosity allows for easy pumping and better penetration
- Rapid curing enables faster project progress
- Low Viscosity and fast reacting resin, ideal for the application
- Adjustable reaction time provides application flexibility
- Superb elastic property to accommodate potential structural movements
- Non-shrinking foam ensures proper sealing of cracks and fissures

Project Facts at a Glance:

- Overhead injection for crack sealing
- Arizona DOT project
- Low Viscosity and fast reacting resin, ideal for the application

About Master Builders Solutions

Master Builders Solutions is a leading global manufacturer of concrete admixtures, as well as other sustainable solutions for the construction industry, focussed on delivering its vision: **Inspiring people to build better**. Master Builders Solutions provides value-added technology and market-leading R&D capabilities to improve the performance of construction materials and to enable

the reduction of CO2 emissions in the production of concrete. Founded in 1909, Master Builders Solutions has ca. 1600 employees operating 35 production sites globally, supporting their customers in mastering their building challenges of today – for a decarbonised future.

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