



SUCCESS STORY

Polymer Modified Rejuvenating Fog Seal Restores Arizona SR 202, Extends Service Life



SCAN FOR
MORE ROADWAY
SUCCESS STORIES.

CASE

Treat oxidation, mitigate raveling and extend the service life of an urban, heavily trafficked highway.

KEY ISSUE

Heavily trafficked route required nighttime application with limited closure time.



LOCATION

State Route (SR) 202
Red Mountain
Freeway connecting
US 60 to SR 101



DISTRESS

Oxidation and
raveling
Routine maintenance
on state highway



TRAFFIC

ADT of 50,000 -
200,000 vehicles



AGENCY

Arizona Department
of Transportation




CONTRACTOR

Cactus Asphalt



SUPPLIER

Ergon Asphalt
& Emulsions
PMRE-h/eFog



“...we’re here to ensure that everybody’s getting the best benefit out of their money.”

Jerry Turner
ADOT Highway Maintenance Supervisor

BACKGROUND: The Arizona Department of Transportation’s (ADOT) routine maintenance program ensures their roadways remain in good condition, delaying the need for more costly maintenance over time. As part of this program, ADOT fog seals approximately 3,000 lane miles annually to treat oxidation, mitigate raveling and extend the service life of their asphalt roadways. A specially engineered asphalt emulsion is key to ensuring optimal performance of these fog seal treatments.

SOLUTION: Polymer modified rejuvenating emulsion (PMRE-h) is ADOT’s specified emulsion for fog seal applications along state highways. Its increased level of polymer modification allows for a denser film thickness than conventional fog seal emulsions, increasing durability and preventing raveling throughout the life of the fog seal treatment. Its rejuvenating agent restores essential properties to pavements that are lost due to aging. With PMRE-h fog seals, ADOT extends the service life of their highways by 2-4 years.

ADOT takes pride in maintaining ~27,000 lane miles within their network. According to ADOT’s Highway Maintenance Supervisor, Jerry Turner, it’s important for them to show they are spending taxpayer dollars efficiently. “Typically, the areas that we work in, a lot of us are raised in these areas,” said Jerry. “Our families drive it. Our friends drive it. We take a lot of pride in what we do, and we’re here to ensure that everybody’s getting the best benefit out of their money.”

Efficient budgeting for ADOT includes the use of pavement preservation. Across the U.S., agencies continue to prove that pavement preservation, which includes applying the right treatments at various stages within a road’s life cycle to bring or keep it in good condition, is a more economical solution than waiting until the road is near failure to act. Not only does pavement preservation allow agencies to treat more miles annually within their road networks using existing budgets, but it ensures better-performing roadways and reduced life cycle costs long term.



“This was an impressive undertaking that took lots of careful planning between multiple agencies.”

Mo Rahman
Ergon A&E Technical Marketing Manager

WORKING THE PLAN

As part of their 2024 program, ADOT planned to fog seal over 299 lane miles of SR 202, which included four lanes and auxiliaries, as well as on and off ramps. For standard fog seal projects, one distributor truck and one transport truck are sufficient. However, because SR 202 is so heavily trafficked, this fog seal project utilized seven distributors and 14 transport trucks to expedite the completion of the project and minimize the time required to return traffic to the freshly sealed lanes. What would have typically taken one week to complete, from fog sealing to striping, was finished in one weekend, thanks to the additional equipment and collaboration within the team. “This was an impressive undertaking that took lots of careful planning between multiple agencies,” said Mo Rahman, Technical Marketing Manager for Ergon Asphalt & Emulsions (Ergon A&E).

Cactus Asphalt was the contractor on this project, and Ergon A&E was selected to supply the PMRE-h/eFog rejuvenating fog seal from our Chandler, Arizona, facility. The entire 299 lane-mile section was treated during evening times, from 8 p.m. - 4 a.m., to minimize inconvenience to drivers.

APPLICATION HIGHLIGHTS

The rejuvenating fog seal project began the evening of April 12, 2024. Eastbound lanes were completely closed to traffic for fog sealing on the first night and westbound lanes were closed the evening of April 13.

PMRE-h/eFog was applied using conventional equipment at approximately 0.08 gallons per square yard throughout the project and cured within an hour. Following the fog

seal, ADOT applied blotter sand to increase surface friction and reduce the glare from the early morning sun on the pavement. Once the blotter sand was applied, the treated sections were swept and pavement markings were applied. ADOT returned traffic to the roadways approximately 14 hours from the start of applications.

COST SAVINGS AND SUSTAINABILITY

Fog seals are typically \$0.40 - \$0.60 per square yard, while an alternative treatment, like a conventional mill and fill, costs anywhere from \$8 - \$10 per square yard. By applying rejuvenating fog seals over time, ADOT is not only saving money per square yard, but they are keeping their good roads good and delaying the need for more expensive maintenance — and they’re doing so with sustainability in mind. The expedited completion of the project, thanks to the additional equipment utilized, resulted in reduced energy use and emissions.

PAVEMENT MANAGEMENT

ADOT utilizes pavement management planning and roadway evaluations to determine which sections are eligible to receive specific treatments, including rejuvenating fog seals, annually. They plan to continue fog sealing as part of ongoing maintenance.

Ergon Asphalt offers a range of fog seal applications depending on your specific road needs. Contact your local roadway resource to find out which of our fog seals is your best first line of defense for preserving your pavements for the long haul.

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