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Problem:

Oxidized Hot Mix

Solution:

Rejuvenating Fog Seal

Product:

eFog Rejuvenating Fog Seal

Success Story: eFog Rejuvenating Fog Seal Corrects Oxidized Permeable Friction Course in Texas

James Construction recently built a 4.5-mile bypass in Florence, Texas, designated State Highway 195. The new bypass includes a frontage road as well as main lanes and ramps that connect to the Highway. The final wearing course was a permeable friction course (PFC). PFCs are similar to open graded friction courses in that they improve safety by reducing tire spray, which increases visibility during rainy weather. Mix testing during and after placement indicated that due to higher than desired manufacturing and storage temperatures during production, oxidization (ageing) had occurred.

Significant oxidization during the construction phase results in shorter than expected service lives, most commonly in the form of raveling and cracking pavements. TxDOT and subcontractor Ramming Paving, LLC, of Austin, TX, needed a way to prevent these issues without having to completely remove the existing PFC and start from scratch—a time-consuming and costly process. TxDOT required a technique that would give the department adequate time to determine if more preservation methods were needed.

David Kopp, South Texas Area Sales Manager for Ergon A&E, recommended eFog Rejuvenating Fog Seal as a solution for the oxidized asphalt pavement. eFog provides dense film thickness and a waterproof coating—qualities which are essential for protection against harsh winter weather. It restores the maltene fractions or "light ends" to the asphalt mix, which are lost to oxidization in high temperature situations during construction or natural exposure to UV rays. The rejuvenating fog seal provides a fresh appearance and much needed chemical rejuvenation.

Ergon A&E and TxDOT have worked together on numerous pavement preservation projects in the past. They have been pleased with the quality of Ergon A&E products and were willing see how eFog would perform in these conditions.

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eFog Test Application

On September 9, 2014, in a one-day application, Ramming Paving applied eFog to a test strip at a turnaround on Highway 195's frontage road. For this section, eFog was applied at an initial shot rate of 0.12 gallons per square yard using an Etnyre distributer. The rate was increased to 0.15 gallons per square yard after an on-site evaluation. The rejuvenating fog seal was applied at 150 °F and the average pavement temperature was 110 °F. Air temperatures were in the low 80s with a light wind. Contractors were able to walk on the asphalt within 30-40 minutes of the application. TxDOT was pleased with the test results and asked the contractor to use eFog for the remainder of the project.

eFog Applied to Entire Project

The full preservation project began on September 22 with the same application process as the test run (150 °F material with eFog applied at a shot rate of 0.15 gallons per square yard on lanes and 0.12 along shoulders). Temperatures remained consistent in the low 80s, and the project was completed in just one week.

TxDOT, James Construction and Ramming Paving were pleased with the results of the finished product. The eFog application was effective enough to keep the PFC intact for the winter season, and could be the final solution to the problem of the oxidized PFC. Currently, Ramming Paving is engaging a material testing firm to determine the degree to which eFog restored the oxidized pavement and whether the treatment initially intended to be a temporary fix could actually be the long term solution that would allow the pavement to remain in place.

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