Biorestor

BIORESTOR—USDA Certified Bio Based Asphalt Pavement Treatment saves the life of Ohio roadway by 3 years.

BIORESTOR is a patented bio based product that has been designed to protect new asphalt pavements from the effects of oxidizing, and aging which result in raveling and cracking. BIORESTOR has been uniquely formulated to improve penetration, viscosity, and stability values of the treated asphalt.

*In 2004, Requarth Road in Darke County Ohio was paved from Greenville City Limits east 2 miles. Pavement design was ¾" 402 Base Asphalt and ¾" 404 Surface mix. After paving, the road was treated with BIORESTOR at a rate of 0.02 gal/SY in July of 2004. The treated area was from Greenville City Limits east to Jaysville St. Johns Rd. From Jaysville St. Johns east to Westfall Rd no treatment was applied. Pictures attached below have been taken and represent conditions found in June 2010. Data shows volume of traffic on treated portion of road is 4 times that of the untreated road. **Crackfill program of 2009 showed 60% less cracking on treated portion**. Edge cracking appears to be reduced as well on the treated portion. ASTM 965 Sand Test shows approx... 20% reduction is surface material loss on treated road.*

-Jim Surber PE PS
Darke County Engineer

RE: ASTM D6433-03 MicroPAVER™ Test Inspection Study – Requarth Rd., Darke County-December 2011

The purpose of this study was to determine the Pavement Condition Index (PCI) for the treated and non-treated sections of Requarth Road through the ASTM D6433-03 inspection process and MicroPAVER™ pavement management system (PMS).

The PCI is a numerical indicator based on a scale of 0 – 100 where 0 is considered "failed" condition and 100 considered "excellent" condition that rates the surface condition of the

pavement. The PCI provides a measure of the present condition of the pavement based on the distress observed on the surface of the pavement, which also indicates the structural integrity and surface operational condition (localized roughness and safety). The PCI cannot measure structural capacity nor does it provide direct measurement of skid resistance or roughness. It provides an objective and rational basis for determining maintenance and repair needs and priorities. Continuous monitoring of the PCI is used to establish the rate of pavement deterioration, which permits early identification of major rehabilitation needs. The PCI provides feedback on pavement performance for validation or improvement of current pavement design and maintenance procedures. A breakdown of the 7 condition categories and PCI limits is listed below:

CONDITION CATEGORY	PCI RANGE
Excellent	92 - 100
Very Good	82 - 91
Good	68 - 81
Fair	50 - 67
Poor	35 - 49
Very Poor	20 - 34
Failed	0-19

It was determined that Section 1 (Treated with BIORESTOR) had 24 total possible sample units, (4) 2500 sf samples were inspected. After following the ASTM inspection process it was the determined that the calculated PCI rating was a 75, ranking in the **"Good"** condition category.

It was determined that Section 2 (Not Treated with BIORESTOR) had 24 total possible sample units, (6) 2500 sf samples were inspected. After following the ASTM inspection process it was the determined that the calculated PCI rating was a 64, ranking in the **"Fair"** condition category.

"Based on my experience with asphalt based surface types, rates of deterioration and the ASTM inspection methodology, it is clearly evident that the product BIORESTOR inhibits the oxidation process while providing for increased flexibility and a longer lifespan of pavements treated after paving." --- James Golden , President of JG3 Consulting, LLC.

BIORESTOR not only saves the lives of new roads, but it also saves the environment and saves you money for your bottom dollar. Plus BIORESTOR reduces dependency on petroleum oils-- thus saving our petroleum needs.

For more information on BIORESTOR please visit our website www.biorestor.com.

BIORESTOR is on the USDA Bio Preferred website at
http://www.biopreferred.gov/bioPreferredCatalog/productDetails?ID=36705