

Water Infiltration Test
 BIORESTOR® Surface Treatment
 Cass County Road Commission
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Objective

This test was performed to determine the effectiveness of BIORESTOR®, a coating that was applied to Decatur Road. It is a comparative test between the applied road and its surrounding approaches.

Procedure

This test involves the use of modified 2000mL graduated cylinders, water, and adhesive. Test cylinders are modified so that it makes contact with the asphalt through the bottom thus allowing the water to infiltrate into the asphalt and remain level. The modified cylinder is adhered to the road to be tested. It was found that a Butyl “rope” is best used as adhesive. The cylinder is then filled with 2000mL of water, making sure there is no obvious leaking from the adhesive seal. Readings of the remaining water were taken every five minutes for a twenty to thirty minute span depending on the road conditions.

Analysis/Results

Two approaches and one main road were chosen for this analysis. The untreated approaches were Crane Road on the east side of Decatur and Graham Road on the west side of Decatur and act as the control, while Decatur Road was the treated roadway. In the testing all cylinders were placed 3 feet from the edge of the road and all roadways were made of the same mix of asphalt.

The placement on Decatur Road was approximately 2060ft north of the center line of Crane Road on the west side. The placement on Crane Road approach was approximately 50ft from the edge of Decatur on the south side of the approach. The results were as follows:

Decatur Road - Treated			Crane Road - Untreated			Graham Road - Untreated		
Minutes	Reading (mL)	Loss (mL)	Minutes	Reading (mL)	Loss (mL)	Minutes	Reading (mL)	Loss (mL)
5	2000	0	5	1870	130	5	1960	40
10	2000	0	10	1810	190	10	1920	80
15	2000	0	15	1770	230	15	1890	110
20	2000	0	20	1730	270	20	1860	140
25	1980	20						
30	1920	80						

For the first 20 minutes of testing on Decatur Road no measurable water infiltrated the asphalt; after 25 minutes the first decrease was noticed and after thirty the test ended. During the 30 minute period less than 5% of the water infiltrated the asphalt. Crane Road saw infiltration almost immediately, averaging closer to 67.5mL every 5 minutes with greater than 10% infiltration. Graham Road also saw infiltration almost immediately, averaging 35mL every 5 minutes with under 10% infiltration.

Conclusion

Based on the results the test showed that the coating on Decatur Road is effective. Decatur Road had little to no infiltration, less than 5% in 30 minutes, while Crane and Graham had more infiltration in half the time. Comparatively speaking the bio-coating on Decatur Road helps prevent infiltration.