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Report: 17-1011

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Customer: Biobased Spray Systems, LLC – Mike Freisthler

Project: Crawford Township, Carey, Ohio

Samples submitted:

Two pavement core samples (1 untreated and 1 treated with BIORESTOR)

The cores were taken on 09-28-17. The BIORESTOR treatment occurred within one week of paving.

Requested Testing:

Recover the asphalt binder from the top 3/8-inch layer of each core. Test the recovered binder of each core for equivalent penetration and viscosity. In addition, determine the Dynamic Shear Rheological (DSR) properties at 60°C. These properties include viscosity, phase angle, complex, elastic, and viscous moduli.

Summary of Testing:

The top 3/8-inch of each core was removed for testing. The asphalt from each core was extracted and recovered as prescribed by California Test Method 365. Viscosities were determined on the recovered asphalt binder using a sliding plate microviscometer (CTM 348). Penetrations were calculated from a nomograph. Viscosities and phase angles were also determined on the recovered asphalt binders of each sample using DSR as prescribed by AASHTO T315. Test data are reported by Tables I and II.



Test data reported herein has been secured by reliable testing procedures. As we have no knowledge of, or control over the conditions that may affect the use of material from which samples were taken, we assume no responsibility in furnishing this data other than to warrant that they represent reliable measurements of the properties of the sample (s) received and tested. No warranties, expressed or implied, including warranties of merchantability or fitness for a particular use, are made with respect to the products described herein. Nothing contained herein shall constitute a permission or recommendation to practice any invention covered by a patent without license from the owner of the patent.

Table I**Biobased Spray Systems, LLC****Crawford Township, Carey, Ohio****BIORESTOR Preservative Seal****Top 3/8" of Core Samples**

Sample Identification	Microviscosity, 25°C, MP		Equivalent Penetration
	0.05 sec ⁻¹	0.001 sec ⁻¹	
Untreated	21.10	22.92	21
Treated	9.974	12.32	31
% Increase in Penetration	48		
% Decrease in Viscosity	112		

Table II**Biobased Spray Systems, LLC****Crawford Township, Carey, Ohio****BIORESTOR Preservative Seal****Top 3/8" of Core Samples**

Sample Identification	Viscosity 60°C, Poises	Phase Angle, °	MODULUS, 60°C, Pa		
			Complex	Elastic	Viscous
Untreated	20985	74.5	21040	8312	19936
Treated	14792	76.3	14833	4438	14252