

Asphalt Pavement And Recycling Technologies, Inc.

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Report: 17-1013

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Customer: Biobased Spray Systems, LLC – Mike Freisthler

Project: Darke County, Ohio

Samples submitted:

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

The cores were taken on 09-07-17.

One quart of PG 58-28 asphalt binder dated:

09-07-17

Requested Testing:

Extract and recover the asphalt binder from the top 3/8-inch layer of each core. Subject the PG 58-28 to Rolling Thin Film Oven aging. Test the recovered binder of each core and the aged PG 58-28 sample 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. The PG 58-28 was aged as per ASTM D2872. Viscosities were determined using a sliding plate microviscometer (CTM 348) and penetrations were calculated from a nomograph. DSR properties were determined 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****Darke County, 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	
PG 58-28	1.442	1.416	74
Core Specimens			
Untreated	9.351	8.644	31
Treated	4.233	3.480	45
% Increase in Penetration	45		
% Decrease in Viscosity	121		

Table II**Biobased Spray Systems, LLC****Darke County, 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
PG 58-28	1979	84.9	1992	175	1972
Core Specimens					
Untreated	9471	81.2	9496	1460	9383
Treated	7258	83.4	7280	1035	7187