

**CERTIFICATE OF ANALYSIS**

December 11, 2012

**Report For:** Hi-Lite Markings, Inc.  
18249 Hi Lite Dr.  
Adams City, NY 13606

**Attn:** Jason Kellar

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<b>Sample ID:</b> Findlay, OH Location 1-3 (1 Control Sample & 1 Rejuvenator Sample For Each Location)	<b>Project #:</b> HILT 06-02-01/03
<b>Sample Date:</b> Control Cores Received 12/3/12 Rejuvenator Cores Received 12/5/12	<b>Type:</b> Top 3/8" of Cores

**OBJECTIVE:** Evaluate pavement performance in accordance with the FAA P-632 Table 2 Bituminous Pavement Rejuvenation specifications.

**DATA/RESULTS:**

Location	Sample Type	Findlay, OH FAA P-632 Project		
		AASHTO T 315		
		DSR Viscosity, $\eta = G^* / \omega$ , Poise	Complex Modulus, $G^*$ , Pa	Phase Angle, $\delta$ , °
Recovered Binder				
Location 1	Control	50,080	5,008	82.27
	Treated	15,570	1,557	86.32
	<b>% Difference</b>	<b>-68.9</b>	<b>-68.9</b>	<b>4.9</b>
Location 2	Control	51,280	5,128	82.13
	Treated	11,290	1,129	87.35
	<b>% Difference</b>	<b>-78.0</b>	<b>-78.0</b>	<b>6.4</b>
Location 3	Control	56,230	5,623	83.12
	Treated	8,313	831.3	87.73
	<b>% Difference</b>	<b>-85.2</b>	<b>-85.2</b>	<b>5.5</b>

**CONCLUSION:** All locations passed the FAA P-632 AASHTO T 315 section stating samples must be reduced by at least 40% of the control Viscosity.

**PROCEDURE:** All cores were saw-cut removing the top 3/8" layer of the core. The material was broken up and extracted using method ASTM D 2172 (Method A) with toluene and ASTM D 5404 to recover the binder. Complex Modulus, Viscosity, and Phase Angle were tested by AASHTO T 315. In order to limit the amount of coring on site Absolute Viscosity ASTM D 2171 was not performed. All results are listed in the table above.

Tested by:   
Jimmy Ynigues, Pavement Technician

Date: December 11, 2012

Reviewed by:   
Matt Groh E.I.T., Pavement Services Manager

Date: December 11, 2012

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