

**Virginia Transportation Research Council
Contract/Grant Progress Report**

Project No: <u>TPF5 (045)</u>	Starting Date: <u>3/1/2003</u>	Target Completion Date: <u>12/31/06</u>
Project Title: <u>Development of Performance Guidelines for the Selection of Bituminous Hot-Poured Crack Sealants</u>		
Performing Agency: <u>University of Illinois</u>		
Principal Investigator(s): <u>Imad L. Al-Qadi</u>		
Date of This Report: <u>8/31/05</u>	Next Report Due Date: <u>11/30/05</u>	

Project Description
 The project will establish performance guidelines for the proper selection of hot-poured crack sealants. The guidelines will be in the spirit of the performance Grade (PG) system for bituminous binders with some modifications to the equipment, data analysis procedure, and testing methods.

Research Activities Pursued This Period:

- Studied the effect of temperature on viscosity measurements
- Completed BBR testing of 10 crack sealants; each at three temperatures.
- Five promising parameters obtained from BBR test results were evaluated for possible consideration for specification-based performance. Prony series expansion was used to simulate and model the BBR response to creep loading.
- Developed a fixture similar to “Blister Test” to measure the work of adhesion and fracture energy for sealant. Preliminary evaluation testing was conducted. Contact angles between several sealants and two types of aggregate were measured to determine the surface tension of each sealant.
- The Direct Tensile Tester mold was modified to evaluate sealant fracture.
- Modification on the semi-cylindrical adhesion test fixture has been made and testing is underway.

Problems Encountered:

- Problems with BBR device took several weeks to fix. The problem got resolved.

Activities Planned for Next Period:

- Start testing sealants obtained from the field by BBR and viscometer
- Evaluate the linearity response of crack sealant using the DTT.
- Determine the repeatability of the semi-cylindrical adhesion fixture.

Current FY Project Budget: \$331,119		Project Budget Lifetime: \$820,000
Current FY Expenditures: 218,589	as of	Expenditures LTD: \$341,800
Percent Expended this FY: 66%	(Date)	Percent Expended LTD: 42%

Timetable: Project is (check):

On Schedule	<input checked="" type="checkbox"/>	
Behind Schedule *	<input type="checkbox"/>	(explain above)
Ahead of Schedule	<input type="checkbox"/>	

Preparer's Signature: _____	Date: <u>8/31/05</u>
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