VTRC File No: _____

Virginia Transportation Research Council
Contract/Grant Progress Report

Project No: TPF5 (045) **Starting Date: 3/1/2003** **Target Completion Date: 12/31/07**
Project Title: Development of Performance Guidelines for the Selection of Bituminous Hot-Poured Crack Sealants
Performing Agency: University of Illinois
Principal Investigator(s): Imad L. Al-Qadi
Date of This Report: 02/28/07 **Next Report Due Date: 5/31/07**

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:
- Testing of the 15 sealants, using the modified DTT, was completed. Rate of modulus reduction and potential energy at specific strain were selected as potential performance parameters. Data interpretation and analysis are currently underway. Between operator repeatability testing is underway. Five sealants were considered.
- Analysis procedure for the DTT center notched specimen test data was completed. First principal in the theory of fracture mechanics was selected for the analysis.
- The DTT adhesion testing plans are completed and testing is underway using three aggregate types. Modification to the edge crack preparation was conducted to improve repeatability.
- Testing is underway for blister testing. Un-aged samples are used to complete the fine-tuning of the testing procedure.
- Finite element simulation for the blister test using viscoelastic material properties is being developed.

Problems Encountered:
- No major problems this quarter.

Activities Planned for Next Period:
- Continue the adhesion DTT testing of sealants. In addition, conduct within laboratory variation testing.
- Continue the blister testing, data analysis, and modeling
- The visco-hyper-elastic constitutive model to account for the larger material deformation behavior in DTT is being investigation.

Budget Status:

Current FY Project Budget: $74,236*		Project Budget Lifetime: *820,000
Current FY Expenditures: $95,073	as of 01/31/07	Expenditures LTD: $651,363
Percent Expended this FY: 1285%*		Percent Expended LTD: 79.4%

* this represent the number in the budget; the project was extended to 12/31/07

Timetable: Project is (check):

On Schedule	☒
Behind Schedule *	☐ (explain above)
Ahead of Schedule	☐

Preparer's Signature: Imad Al-Qadi Date: 02/28/07