VTRC File No: _____

Virginia Transportation Research Council
Contract/Grant Progress Report

Project No: TPF5 (045) **Starting Date: 3/1/2003** **Target Completion Date: 12/31/06**
Project Title: Development of Performance Guidelines for the Selection of Bituminous Hot-Poured Crack Sealants
Performing Agency: Virginia Tech
Principal Investigator(s): Imad L. Al-Qadi
Date of This Report: 11/01/03 **Next Report Due Date: 3/1/04**

Project Description
Achieve a means of selecting durable crack sealant materials for use on pavements. The project will establish performance guidelines for the selection of crack sealants. The guidelines will be in the spirit of the performance Grade (PG) system for bituminous binders.

Research Activities Pursued This Period (Including Tasks):
7-member technical panel has reviewed the issue of sealant homogeneity and segregation during heating and has offered a recommendation. A vote of the entire TAC to accept or reject recommendation is pending.
Methodologies for accelerated aging using small kettle aging (short-term aging) followed by pressure aging (long-term aging) have been compared to short- and long-term aging performed in a microwave oven. Again, a vote on which method to develop for inclusion in a performance-based specification is pending.
Bending beam rheometry (BBR), direct tensile testing (DTT), and creep-recovery, for low temperature testing, are being evaluated.
Testing of three sealants (high, medium, and low modulus) is underway using BBR to determine any changes in the loading, specimen shape, testing protocol, etc.
The researchers worked with a DTT manufacturer to increase the test moving span and temperature control. The new system is currently being evaluated.

Problems Encountered:
Two accidents, a fire and an explosion, occurred during the development of aging tests using microwaves. An inability to avoid (with some sealants) or completely explain (in the case with the explosion) these hazards discouraged the use of microwave technology for aging sealants in a quality control environment.

Activities Planned for Next Period:
Much of the upcoming activities depend on outcome of balloting relating to recommendations developed during previous period. Results of those ballots and the corresponding resulting activities will be posted to the website established by the Crack Sealant Consortium.
Literature review report will be completed
BBR testing modifications will be completed
DTT testing viability should be determined.

Budget Status:

Current FY Project Budget:	$227,279		Project Budget Lifetime: $820,000.00
Current FY Expenditures:	$27,448	as of 10-31-2003	Expenditures LTD: $37,526
Percent Expended this FY:	12.0%	(Date)	Percent Expended LTD: 4.6%

Timetable: Project is (check):

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

Preparer's Signature: _____ Date: _____