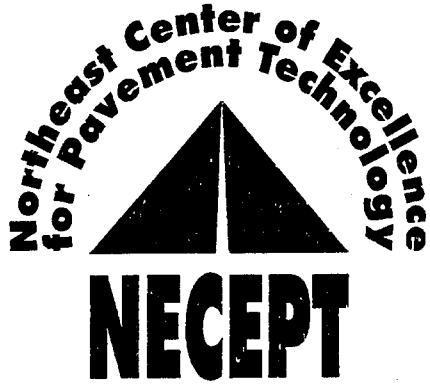
PRECISION OF DYNAMIC SHEAR RHEOMETER IN NORTHEAST ROUND ROBIN STUDY

NECEPT Regional Pooled Fund Study
Task R5: Round Robin

Connecticut
Delaware
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont
Washington, D.C.



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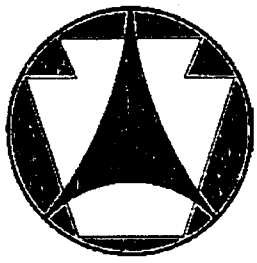

FINAL REPORT

NOVEMBER 1999

By D. A. Anderson, C. E. Antle, Y. Liu, and M. O. Marasteanu

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16. Abstract

This study was promoted by the Northeast Asphalt User/Producer Group (NEAU/PG) in response to concerns within the region that the test data generated by instruments from one DSR manufacturer were suspect when compared to measurements obtained with DSRs produced by other manufacturers. The testing program was designed to provide sufficient data so that a reliable estimate of the within- and between-laboratory variability could be determined. As a result, 12 samples were sent to each of 20 participating laboratories. Six of the coded (blind) samples were for the 25-mm plate and six were for the 8-mm plate; the samples were in fact from only two materials—one for the 25-mm plate and one for the 8-mm plate, giving six replicates per plate. In addition, the Cannon Instrument Company viscosity standard (reference fluid) was also included in the NEAU/PG study.

The data obtained in this study were considerably more variable, both in D1S and D2S, than the data reported in other round robins and clearly indicated the need for additional training. A course of action was recommended that included the development and circulation of additional training and test protocol instructions, one-on-one training with future round-robin participants, a second round-robin designed to give adequate information on both within- and between-laboratory variability, and consideration to replacement of the equipment (low-cost specification model without proper temperature control) from one of the manufacturers.

17. Key Words	18. Distribution Statement
Standard deviation, rheology, Dynamic Shear Rheometer, asphalt binder, reference fluid.	No restrictions. This document is available from the National Technical Information Service, Springfield, VA 22161

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