Fact Sheet

US Army Engineer
Research and Development Center
Waterways Experiment Station

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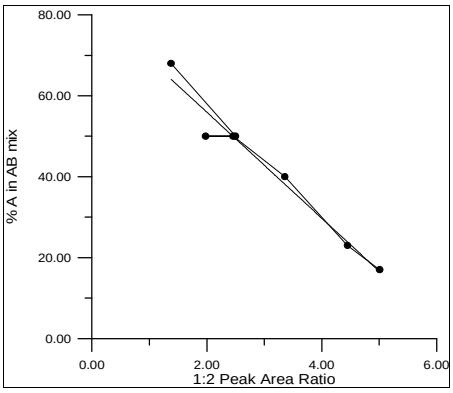
Public Affairs Office Ž 3909 Halls Ferry Road Ž Vicksburg, MS 39180-6199 Ž (601) 634-2504 Ž http://www.wes.army.mil

Forensic Analysis of Pavement Failures

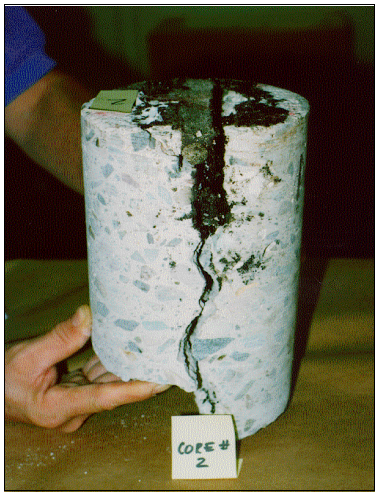
Purpose: Provide expert consultation and forensic analysis services for all types of pavement failures.

Background: The US Army Engineer Waterways Experiment Station (WES) has long been the nation's leading research agency for heavy-duty pavement design. Our staff has responded to calls for expert services worldwide in determination of a variety of pavement failures for over 50 years. We have analyzed failures for asphalt, concrete, pavement sealers, and joint sealant materials and a variety of specialized pavements in remote locations.



Calibration curve for determination of two-component joint sealant mixing ratios using FTIR peak area

Facts: The WES is fully equipped and staffed to perform analytical, chemical, and physical analysis of pavements and materials. Our pavement design engineers can evaluate various types of pavement designs to determine structural causes of pavement failures. Our materials engineers and scientists can use specialized chemical testing such as Fourier Transform Infrared Spectroscopy (FTIR) to chemically fingerprint many materials used in pavements. Other techniques include chemical fractionation, thermal analysis using differential scanning calorimetry (DSC) and thermal gravimetric analysis (TGA), rotational viscometry, bending beam rheometry, and dynamic shear rheometry.



Core sample taken from area with "failed" joint sealant

Point of Contact: For more information regarding forensic investigations of pavement failures contact Dr. Kent Newman at (601) 634-3858 or e-mail at newmanj@wes.army.mil. For more information on WES, visit our web site at http://www.wes.army.mil or http://pavement.wes.army.mil.