

**Crack and Joint Sealing  
List of Pavement  
Preservation Research  
January 2008**

Title	Contract / Grant No.	Shortened Abstract	Current Status	Start Date	End Date	Sponsor Organization	Source Organization	Performing Organization	Total Budget
<b>Recycled Asphalt Shingles for Slurry Leveling and Crack Filling</b>	HR-379	The objective of this research is to determine the feasibility of using recycled asphalt shingles to develop a low cost slurry leveling and crack filling material and to evaluate the performance of the recycled asphalt shingle slurry leveling and crack filling materials.	Active	6-Apr-95	N/A	Iowa DOT	Iowa DOT	City of Spencer, IA	\$77,000
<b>US12 Joint Leveling Evaluation</b>	SD2002-13	The South Dakota Department of Transportation (SDDOT) has an aggressive crack routing and sealing program to help minimize the moisture ingress but sometimes these cracks may undergo significant subsidence in the asphalt concrete pavement adjacent to the cracks even with the sealing. To potentially solve this problem on US12 near Selby, SD, four test sections using three different materials and two different processes will be constructed. The products will be tested in milled and non-milled sections, which will provide ample opportunity for testing and evaluating of their effectiveness. The objectives of this research project is to: (1) evaluate the effectiveness of joint leveling mastic materials as a maintenance practice; (2) determine the degree of ride quality improvement from the joint leveling applications; and (3) determine the economical benefit of joint leveling as a maintenance practice.	Active	7-May-02	30-Jun-03	South Dakota DOT	South Dakota DOT	South Dakota DOT	\$10,000
<b>Performance Evaluation of Concrete Patching Material Identified as Fibercrete, I 64 Jefferson County</b>	FR-151	A section of I-64 in Jefferson County will be rehabilitated by diamond grinding and patching with a propriety material identified as Fibercrete, a flexible asphalt and concrete patching and crack-sealing material consisting of a polymer-modified asphalt binder along with recycled steel fibers, aggregates and recycled tire rubber. The Kentucky Transportation Center will monitor the construction and long-term performance of this material at this site.	Active	1-Feb-06	31-Jan-07	Kentucky Transportation Cabinet	Kentucky Transportation Center	Kentucky Transportation Center	\$12,000

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Evaluation of the Overlay Tester for Adhesion Testing of Crack Sealants	0-5457	Crack sealant failure is common within the first three years of application. Sealant failure can be either adhesive or cohesive. Actually, both adhesive and cohesive failures mainly caused by thermal movement of cracks can be simultaneously simulated by the upgraded Overlay Tester developed under Texas Department of Transportation (TxDOT) research project 0-4467. Thus, the objective of this research is to evaluate the Overlay Tester device for use in testing asphalt crack sealants for adhesion and elasticity during thermal cycles on HMAC cracks.	Active	1-Sep-05	31-Aug-07	Texas DOT	Texas DOT	Center for Transportation Research - University of Texas. Texas Transportation Institute	
Development of an Automated Pavement Crack Sealing System	RP-2047	The objective of this study is to provide improved hardware and methods for pavement crack sealing, enabling a reduction in labor costs, an increase in worker safety, increased pavement repair rates, and reduced material consumption. These objectives will be addressed by developing the necessary technologies, hardware, and software for automated identification, characterization, and sealing of pavement cracks.	Active	25-Nov-03	25-Apr-08	Georgia DOT	Georgia DOT	Georgia Tech	\$1,441,000
Visibility of Striping on Crack Seal	NM02MSC-02	Crack sealing is used in road maintenance but presents a problem when the crack seal material visually pops-out on the roadway, making it difficult to see lane stripes. This survey will investigate whether there are any additives to the caulking material that will make it stand out less visually under certain conditions and what the impact of the additives are to the efficiency of the crack seal. The Research Engineering Section will conduct a literature search to discover how other states are overcoming this challenge. Tests will then be conducted on different additives to determine effectiveness in reducing visual impact and maintaining the durability of the crack sealants.	Active	1-Feb-02	1-Feb-03	NM State Highway and Transportation Dept.	NM State Highway and Transportation Dept.	NM State Highway and Transportation Dept.	
Untreated ACP Crack Evaluation	TRB Accession Number 755275	The objective of this project is to determine the cost-benefit of crack sealing versus not crack sealing asphaltic concrete pavement roadway surfaces. The scope of this project will encompass a variety of site situations which will evaluate the effects of climate and traffic conditions and the various types of pavement structure.	Active	10-Jun-05	20-Jun-05	Alberta Transportation Technical Standards Branch	Transportation Association of Canada	Alberta Transportation Technical Standards Branch	

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<b>Rout and Seal Crack Maintenance Evaluation</b>	TRB Accession Number 755875	The Department has been investigating the use of rout and seal crack sealing for more than 10 years. A recently completed report (ABTR/ RD/RR-93/10) recommended adopting rout and seal for general use in the Province. This project was established to document refinements in installation procedures and material selection. When compared conventional methods, rout and seal can deliver a more effective efficient seal, thereby effectively protecting the infrastructure.	Completed	15-Jun-05	N/A	Alberta Transportation Technical Standards Branch	Transportation Association of Canada	Alberta Transportation Technical Standards Branch	
<b>Crack Sealing: The Effect of the Hot-Air Lance on Asphalt Concrete</b>	TRB Accession Number 758160	The aim of this project is to measure the impact of the hot-air lance (HAL) on the performance of crack sealants used in cold climates. Emphasis is placed on studying the effect of the HAL on binder oxidation and the aggregate-binder bond.	Active	1-Jan-96	1-Dec-96	Transport Canada, Transportation Development Centre; City of Montreal; Ministère des Transports du Québec	TRIP, Research Projects from the ITRD Database	National Research Council of Canada	
<b>Crack Sealing in Cold Urban Climates</b>	TRB Accession Number 758164	The aim of the project was to review the practice of crack sealing in cold climates, and the selection process of sealant materials. New guidelines for sealant installation are provided along with a critique of the ASTM D3405 and the theory behind the adhesion between seal and asphalt concrete.	Active	1-Sep-91	1-Aug-96	City of Montreal	TRIP, Research Projects from the ITRD Database	National Research Council of Canada; Institute for Research in Construction	
<b>Crack Sealing Cost Effectiveness</b>	8127	The objective of this research project is to determine the most economical and effective materials and methods for sealing cracks in flexible pavements in the state of Montana.	Active	1-Oct-95	N/A	Montana DOT	Montana State University - Bozeman	Montana State University - Bozeman	\$122,560
<b>Performance and Selection of Pavement Crack Sealant Under Nevada Conditions and Before Overlays</b>	P223-95-803	A research project is being conducted to address three major problems with the Nevada Department of Transportation (NDOT) crack sealing programs. They are (1) material ineffectiveness observed as crack reopening after 8-10 months of sealing, sealant debonding and pull-out; (2) safety concerns with hot-applied sealant, and (3) sealant-caused bumps in overlays.	Completed	1-Jan-01	30-Sep-09	Nevada DOT	Nevada DOT	Nevada DOT	\$352,868