

ETF Research Update

November 2024

NCHRP 9-62 Rapid Tests and Specifications for Construction of Asphalt-Treated Cold Recycled Pavements

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|--------------------------------|--|
| Funds: | \$999,737 |
| Research Agency: | Virginia Transportation Research Council |
| Principal Investigator: | Brian Diefenderfer |
| Effective Date: | 6/1/2017 |
| Completion Date: | 8/31/2022 |
| Comments: | Available as WOD 376 |

OBJECTIVE The objectives of this research were to develop (1) time-critical tests for asphalt-treated CIR, FDR, and CCPR materials and (2) a guide specification using these tests for process control and product acceptance that provides the agency with a basis for determining when the pavement can be opened to traffic and surfaced.

STATUS: The final report for Phases I-III of the project is available as [*NCHRP Research Report 960, Proposed AASHTO Practice and Tests for Process Control and Product Acceptance of Asphalt-Treated Cold Recycled Pavements*](#). The final report for Phase IV is available as Web-Only Document 376 (Rapid Tests and Specification Language for Construction of Asphalt-Treated Cold Recycled Pavements) here: <https://nap.nationalacademies.org/catalog/27289/rapid-tests-and-specification-language-for-construction-of-asphalt-treated-cold-recycled-pavements>

NCHRP 14-43 Construction Guide Specifications for Cold Central Plant Recycling and Cold In-Place Recycling

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|--------------------------------|---|
| Funds: | \$250,000 |
| Research Agency: | National Center for Asphalt Technology |
| Principal Investigator: | Benjamin Bowers |
| Effective Date: | 5/26/2020 |
| Completion Date: | 8/31/2022 |
| Comments: | Report Published as NCHRP Web-Only-Document 363 |

OBJECTIVE

The objective of this research was to produce proposed AASHTO Construction Guide Specifications for the application of CCPR and CIR in the standard five-part AASHTO format with supporting commentary. The specifications shall include plans for quality assurance and agree with current provisional material specifications and mix design practices for these treatments. The specifications shall enable specifying agencies to tailor their own specifications to the local conditions and environments.

STATUS: Project's Report Published as NCHRP Web-Only-Document 363
(<https://www.trb.org/Publications/Blurbs/182965.aspx>).

NCHRP 14-44 Construction Guide Specifications for Slurry Seals, Scrub Seals, and Tack Coats

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|--------------------------------|------------------------|
| Funds: | \$175,000 |
| Research Agency: | University of Arkansas |
| Principal Investigator: | Andrew Braham |
| Effective Date: | 9/2/2020 |
| Completion Date: | 3/1/2022 |

OBJECTIVE: The objective of this research was to develop recommended guide specifications for the construction of slurry seals, scrub seals, and tack coats as used in preservation treatments.

STATUS : Research is complete. The research reviewed and evaluated the current practices for the construction of slurry seals, scrub seals, and tack coats and proposed (1) a set of proposed guide specifications for their construction and (2) a set of practices for quality assurance of their construction. The final deliverable includes 3 parts: Part I: Final Report, Part II: Proposed Guide Specifications for Construction of Slurry Seals, Scrub Seals, and Tack Coats, and Part III: Proposed Quality Assurance Guide. Parts II and III have been provided the AASHTO Committee on Materials and Pavements for consideration and possible incorporation into the AASHTO Guide Specifications for Highway Construction; they are not available. Part I is available at https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP14-44_Part-I_FinalReport.pdf

NCHRP 14-48 Construction Guide Specifications for Pavement Treatments - Sand Seals and Ultra-thin Bonded Surface Treatments

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|--------------------------------|------------------------|
| Funds: | \$175,000 |
| Staff Responsibility: | Dr. Amir Hanna |
| Research Agency: | University of Arkansas |
| Principal Investigator: | Andrew F. Braham |
| Effective Date: | 10/10/2022 |
| Completion Date: | 4/9/2024 |

OBJECTIVE: The objective of this research was to develop recommended guidance for the construction of sand seals and UTBWCs as used in preservation treatments.

STATUS: Research is Complete.

NCHRP 10-114 Developing Performance and Safety Specifications for Rejuvenating Seals

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|--------------------------------|--------------------------|
| Funds: | \$300,000 |
| Staff Responsibility: | Camille Crichton-Sumners |
| Research Agency: | Auburn University |
| Principal Investigator: | Dr. Raquel Moraes |
| Effective Date: | 8/4/2022 |
| Completion Date: | 8/4/2025 |
| Comments: | Research in progress. |

OBJECTIVES

The objectives of this project are to (1) provide the characteristics of the rejuvenator based on chemistry and rheology; (2) determine how different rejuvenating compounds are penetrating and rejuvenating the underlying pavement; (3) determine how the desired performance for a rejuvenating seal is measured and quantified in the laboratory and field; (4) determine the life extending benefit and impact on friction properties of a rejuvenating seal measured and quantified in the laboratory and field; (5) determine how practitioners may design an optimum dose and/or application rate for a rejuvenator required to provide the desired performance and friction properties; and (6) document suggested practice prepared in conformance with AASHTO standard format.

STATUS: Research in progress.

NCHRP 10-124 Development of Field Test to Determine Actual Percent Embedment of Chip Seal Aggregate

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|--------------------------------|------------------------------|
| Funds: | \$400,000 |
| Staff Responsibility: | Roberto Barcena |
| Research Agency: | Auburn University, NCAT |
| Principal Investigator: | Dr. Adriana Vargas-Nordcbeck |
| Effective Date: | 3/22/2024 |
| Completion Date: | 3/21/2027 |
| Comments: | Research in progress. |

OBJECTIVE

The objective of this research is to identify, adapt, or develop a rapid field test method(s) to determine the percentage embedment depth of a uniformly placed chip seal of known aggregate gradation.

The term “rapid” for this project refers to a test method(s) that can be used as part of the quality control (QC) process, and can provide its results after the initial chip seal sweeping, allowing for real-time adjustments during the construction process.

STATUS: Research in progress starting March 22, 2024.

NCHRP 10-134 Guidelines for the Selection of Performance-Related Tests for the Acceptance of Preservation Treatments

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|------------------------------|------------------|
| Funds: | \$400,000 |
| Staff Responsibility: | Amir N. Hanna |
| Effective Date: | Contract Pending |
| Contract Time: | 36 months |

OBJECTIVE

The objective of this research is to develop guidelines for the selection of performance-related tests for the acceptance of preservation treatments. The research shall focus on chip seals and microsurfacing. For the purpose of this research, acceptance tests include those required for design, production, and placement of the treatment.

NCHRP 17-138 Pavement Marking Selection for Bridge and Pavement Preservation Treatments

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|------------------------------|-------------------|
| Funds: | \$400,000 |
| Staff Responsibility: | Sadaf Khosravifar |
| Comments: | RFP stage |
| Fiscal Year: | 36 months |

OBJECTIVE

The objective of this research is to develop guidelines for selection of recommended pavement marking types for bridge and pavement preservation treatments.

STATUS: RFP closes Jan. 15, 2025.

NCHRP 10-145 Asphalt Emulsion-Based High Friction Surface Treatments

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|------------------------------|-------------------|
| Funds: | \$450,000 |
| Staff Responsibility: | Sadaf Khosravifar |
| Comments: | RFP Stage |
| Fiscal Year: | 36 months |

OBJECTIVE

The objective of this project is to develop guidelines for using engineered asphalt emulsion-based HFSTs that achieve the same performance as traditional HFSTs. At a minimum, the research will assess the technical and economic feasibility of using engineered asphalt emulsion-based HFST.

STATUS: RFP closes Jan. 13, 2025.