



TRANSPORTATION RESEARCH BOARD

Materials Overview

TRB at a Glance

The mission of the Transportation Research Board (TRB) is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal.

A resource to the nation and to the transportation community worldwide, TRB provides an extensive portfolio of services:

- Opportunities for information exchange on current transportation research and practice,
- Management of cooperative research and other research programs,
- Analyses of national transportation policy issues and guidance on federal and other research programs
- Publications and access to research information from around the world.

More info at www.trb.org

TRB's Transportation Research Information Services (TRIS)

TRIS includes the TRB Library and the TRIS Databases (listed below) which are available for free on TRB's website.

The TRB Library provides information services to TRB staff, sponsors, TRB Committee members and panels and researchers. Access to the TRB Library is a benefit to TRB sponsors and TRB committee members.

In cooperation with your State DOT Library or Information Service, the TRB Library provides:

- Reference and research assistance
- Literature searches
- Articles for TRB Committee work

The TRB Library provides training on effective and efficient use of the following TRIS resources:

TRID – The world's largest and most comprehensive bibliographic source on all modes and disciplines of transportation
trid.trb.org

Practice Ready Papers (PRP) Database - Papers with information that is ready for immediate implementation or requires minimal additional research or implementation effort.

prp.trb.org

Publications Index (PubsIndex) Database – The papers, articles and reports published by the Transportation Research Board, Highway Research Board, Strategic Highway Research Programs or the Marine Board

pubsindex.trb.org

Research in Progress (RiP) Database – Current or recently completed transportation research projects

rip.trb.org

Research Needs Statements (RNS) – Research needs as identified by TRB Technical Activities standing committees

rns.trb.org

More information about TRIS is available online at: <http://www.trb.org/InformationServices/InformationServices.aspx>

Contact the Library at TRBLibrary@nas.edu or 1 (202) 334-2989

Upcoming Events

- Conferences:
 - July 16, 2016 Xi'an, China **International Conference on Transportation Infrastructure and Materials**
 - August 14, 2016 Portland, Oregon **Use of Scenario Planning in Transportation Planning**



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- Webinars:

View TRB webinars here: <http://www.trb.org/ElectronicSessions/ConferenceRecordings.aspx>

Technical Committees

- Standing Committees:

- Design and Construction Group (AF000)
- Structural Fiber Reinforced Polymers (AFF80)
- Section - Asphalt Materials (AFK00)
- General Issues in Asphalt Technology (AFK10)
- Characteristics of Asphalt Materials (AFK20)
- Characteristics of Nonasphalt Components of Asphalt Paving Mixtures (AFK30)
- Characteristics of Asphalt-Aggregate Combinations to Meet Surface Requirements (AFK40)
- Characteristics of Asphalt Paving Mixtures to Meet Structural Requirements (AFK50)
- Section - Concrete Materials (AFN00)
- Basic Research and Emerging Technologies Related to Concrete (AFN10)
- Task Force on Nanotechnology-Based Concrete Materials (AFN15T)
- Properties of Concrete (AFN20)
- Durability of Concrete (AFN30)
- Concrete Materials and Placement Techniques (AFN40)
- Section - Geology and Properties of Earth Materials (AFP00)
- Exploration and Classification of Earth Materials (AFP20)
- Soil and Rock Properties (AFP30)
- Physicochemical and Biological Processes in Soils (AFP40)
- Engineering Behavior of Unsaturated Soils (AFP60)
- Mineral Aggregates (AFP70)
- Transportation Earthworks (AFS10)
- Subsurface Soil-Structure Interaction (AFS40)
- Geosynthetics (AFS70)
- Cementitious Stabilization (AFS80)
- Chemical, Mechanical, and Asphalt Stabilization (AFS90)
- Sealants and Fillers for Joints and Cracks (AHD25)
- Polymer Concretes, Adhesives, and Sealers (AHD40)
- Signing and Marking Materials (AHD55)

- Task Force:

- Task Force on Context Sensitive Design/Solutions (CSD/CSS) (AFB50T)
- Task Force on Nanotechnology-Based Concrete Materials (AFN15T)

To become Friend of any committee visit MyTRB.org

Cooperative Research Program (CRP)

These are the past five year's research from TRB. The TRB Library can help you sort through these reports or other research from state or federal DOTs or other sources.

- NCHRP Reports

- NCHRP Report, Issue: 807 - Properties of Foamed Asphalt for Warm Mix Asphalt Applications.
- NCHRP Report, Issue: 805 - Improved Test Methods for Specific Gravity and Absorption of Coarse and Fine Aggregate.
- NCHRP Report, Issue: 801 - Proposed Practice for Alternative Bidding of Highway Drainage Systems.
- NCHRP Report, Issue: 784 - Best Practices for Crack Treatments for Asphalt Pavements.
- NCHRP Report, Issue: 779 - Field Performance of Warm Mix Asphalt Technologies.
- NCHRP Report, Issue: 763 - Evaluation of the Moisture Susceptibility of WMA Technologies.
- NCHRP Report, Issue: 762 - Laboratory Validation of an Endurance Limit for Asphalt Pavements.

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- NCHRP Report, Issue: 759 - Effective Removal of Pavement Markings.
- NCHRP Report, Issue: 757 - Long-Term Performance of Epoxy Adhesive Anchor Systems.
- NCHRP Report, Issue: 752 - Improved Mix Design, Evaluation, and Materials Management Practices for Hot Mix Asphalt with High Reclaimed Asphalt Pavement Content.
- NCHRP Report, Issue: 749 - Methods for Evaluating Fly Ash for Use in Highway Concrete.
- NCHRP Report, Issue: 747 - Guide for Conducting Forensic Investigations of Highway Pavements.
- NCHRP Report, Issue: 743 - Predicting the Initial Retroreflectivity of Pavement Markings from Glass Bead Quality.
- NCHRP Report, Issue: 733 - High-Performance/High-Strength Lightweight Concrete for Bridge Girders and Decks.
- NCHRP Report, Issue: 724 - Application of LADAR in the Analysis of Aggregate Characteristics.
- NCHRP Report, Issue: 719 - Calibration of Rutting Models for Structural and Mix Design.
- NCHRP Report Issue: 714 - Special Mixture Design Considerations and Methods for Warm Mix Asphalt: A Supplement to NCHRP Report 673: A Manual for Design of Hot Mix Asphalt with Commentary.
- NCHRP Report, Issue: 712 - Optimization of Tack Coat for HMA Placement.
- NCHRP Report, Issue: 709 - Investigation of Short-Term Laboratory Aging of Neat and Modified Asphalt Binders.
- NCHRP Report, Issue: 704 - A Performance-Related Specification for Hot-Mixed Asphalt.
- NCHRP Report, Issue: 702 - Precision of the Dynamic Modulus and Flow Number Tests Conducted with the Asphalt Mixture Performance Tester.
- NCHRP Report, Issue: 699 - Guidelines for the Use of Pavement Warranties on Highway Construction Projects.
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- NCHRP Report, Issue: 696 - Performance of Corrugated Pipe Manufactured with Recycled Polyethylene Content.
- NCHRP Report, Issue: 691 - Mix Design Practices for Warm Mix Asphalt.
- NCHRP Report, Issue: 673 - A Manual for Design of Hot Mix Asphalt with Commentary.
- NCHRP Research Results Digest
 - NCHRP Research Results Digest, Issue: 391 - Modulus-Based Construction Specification for Compaction of Earthwork and Unbound Aggregate.
 - NCHRP Research Results Digest, Issue: 390 - Precision Estimates of AASHTO T 324, "Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)".
 - NCHRP Research Results Digest, Issue: 389 - Precision Estimates of AASHTO T 304, AASHTO T 96, and AASHTO T 11 and Investigation of the Effect of Manual and Mechanical Methods of Washing on Sieve Analysis of Aggregates.
 - NCHRP Research Results Digest, Issue: 388 - Precision Estimates of AASHTO T 201, AASHTO T 202, and AASHTO T 49.
 - NCHRP Research Results Digest, Issue: 382 - Measuring Cement Particle Size and Surface Area by Laser Diffraction.
 - NCHRP Research Results Digest, Issue: 380 - Guidelines for Geofabric Applications in Slope Stability Projects.
 - NCHRP Research Results Digest, Issue: 374 - A Proposed Technology Evaluation Program for Warm Mix Asphalt.
 - NCHRP Research Results Digest, Issue: 370 - Guidelines for Project Selection and Materials Sampling, Conditioning, and Testing in WMA Research Studies.
 - NCHRP Research Results Digest, Issue: 369 - AASHTO T 209: Effect of Agitation Equipment Type on Theoretical Maximum Specific Gravity Values.
 - NCHRP Research Results Digest, Issue: 360 - Rheological Characterization of Flow Table Reference Material.
 - NCHRP Research Results Digest, Issue: 357 - Test Methods and Specification Criteria for Mineral Filler Used in Hot Mix Asphalt.
 - NCHRP Research Results Digest, Issue: 351 - Precision Statements for AASHTO Standard Methods of Test T 148, T 265, T 267, and T 283.

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- NCHRP Research Results Digest, Issue: 346 - Optical Sizing and Roundness Determination of Glass Beads Used in Traffic Markings.
- NCHRP Synthesis of Highway Practice
 - NCHRP Synthesis of Highway Practice, Issue: 477 - Methods and Practices on Reduction and Elimination of Asphalt Mix Segregation.
 - NCHRP Synthesis of Highway Practice, Issue: 475 - Fiber Additives in Asphalt Mixtures.
 - NCHRP Synthesis of Highway Practice, Issue: 463 - Pavement Patching Practices.
 - NCHRP Synthesis of Highway Practice, Issue: 456 - Nazzal, Munir. Non-Nuclear Methods for Compaction Control of Unbound Materials.
 - NCHRP Synthesis of Highway Practice, Issue: 441 - Russell, Henry G.. High Performance Concrete Specifications and Practices for Bridges.
 - NCHRP Synthesis of Highway Practice, Volume 8, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 8: Manufacturing and Construction Byproducts.
 - NCHRP Synthesis of Highway Practice, Volume 7, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 7: Scrap Tire Byproducts.
 - NCHRP Synthesis of Highway Practice, Volume 6, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 6: Reclaimed Asphalt Pavement, Recycled Concrete Aggregate, and Construction Demolition Waste.
 - NCHRP Synthesis of Highway Practice, Volume 5, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 5: Slag Byproducts.
 - NCHRP Synthesis of Highway Practice, Volume 4, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 4: Mineral and Quarry Byproducts.
 - NCHRP Synthesis of Highway Practice, Volume 3, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 3: Non-Coal Combustion Byproducts.
 - NCHRP Synthesis of Highway Practice, Volume 2, Issue: 435 - Recycled Materials and Byproducts in Highway Applications, Volume 2: Coal Combustion Byproducts.
 - NCHRP Synthesis of Highway Practice, Issue: 435 - Recycled Materials and Byproducts in Highway Applications--Summary Report, Volume 1.
 - NCHRP Synthesis of Highway Practice, Issue: 433 - Significant Findings from Full-Scale Accelerated Pavement Testing.
 - NCHRP Synthesis of Highway Practice, Issue: 423 - Long-Term Performance of Polymer Concrete for Bridge Decks.
 - NCHRP Synthesis of Highway Practice, Issue: 421 - Recycling and Reclamation of Asphalt Pavements Using In-Place Methods.
- NCHRP IDEA Program
 - NCHRP IDEA Program: Products with an Impact or Potential Impact on Current Highway Practice: Notable Examples.
 - NCHRP-IDEA Program Project Final Report - Tools for Determining Yield Stress of In-Service Gusset Plates.
 - NCHRP-IDEA Program Project Final Report - Super-Weathering Steel for Infrastructure Applications.
 - NCHRP-IDEA Program Project Final Report - Shape Memory Alloy Enhanced SMART Expansion Joints.
 - NCHRP-IDEA Program Project Final Report - The Guayule Plant: A Renewable Domestic Source of Binder Materials for Flexible Pavement Mixtures.
 - NCHRP-IDEA Program Project Final Report - Development of a Simple Test to Determine the Low Temperature Strength of Asphalt Mixtures and Binders.
 - NCHRP-IDEA Program Project Final Report - Automated Laser Spectrographic Pattern Matching for Aggregate Identification.
 - NCHRP-IDEA Program Project Final Report - A Shape Memory Polymer Based Self-Healing Sealant for Expansion Joint.
 - NCHRP-IDEA Program Project Final Report - An Acoustic Emission-Based Test to Determine Asphalt Binder and Mixture Embrittlement Temperature.

- NCHRP Web Documents

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- NCHRP Web Document, Issue: 187 - Seismic Design of Geosynthetic-Reinforced Soil Bridge Abutments with Modular Block Facing.
- NCHRP Web Document, Issue: 186 - The Superpave Mix Design System: Anatomy of a Research Program.
- NCHRP Web Document, Issue: 172 - Adapting Specification Criteria for Simple Performance Tests to HMA Mix Design.
- NCHRP Web Document, Issue: 167 - Statistical Modeling of Cement Heat of Hydration Using Phase and Fineness Variables.
- NCHRP Web Document, Issue: 166 - Precision Estimates of AASHTO T283: Resistance of Compacted Hot Mix Asphalt (HMA) to Moisture-Induced Damage.
- Transportation Research E-Circulars
 - Transportation Research E-Circular, Issue: E-C198 - Moisture Damage to Hot-Mix Asphalt Mixtures. Synopsis of a Workshop, January 22, 2012, Washington, D.C.
 - Transportation Research E-Circular, Issue: E-C188 - Application of Reclaimed Asphalt Pavement and Recycled Asphalt Shingles in Hot-Mix Asphalt: National and International Perspectives on Current Practice. Papers from a Workshop, January 12, 2014, Washington, D.C.
 - Transportation Research E-Circular, Issue E-C186 - Enhancing the Durability of Asphalt Pavements: Papers from a Workshop.
 - Transportation Research E-Circular, Issue: E-C182 - Progress Toward Performance-Graded Emulsified Asphalt Specifications.
 - Transportation Research E-Circular, Issue: E-C171 - Durability of Concrete. Second Edition.
 - Transportation Research E-Circular, Issue: E-C170 - Nanotechnology in Concrete Materials: A Synopsis.
 - Transportation Research E-Circular, Issue: E-C165 - Alternative Binders for Sustainable Asphalt Pavements: Papers from a Workshop.
 - Transportation Research E-Circular, Issue: E-C161 - Applications of Advanced Models to Understand Behavior and Performance of Asphalt Mixtures.
 - Transportation Research E-Circular, Issue: E-C160 - Polyphosphoric Acid Modification of Asphalt Binders: A Workshop, April 7-8, 2009, Minneapolis, Minnesota.
 - Transportation Research E-Circular, Issue: E-C147 - Development in Asphalt Binder Specifications.
- Other Reports
 - Long-Term Pavement Performance Committee Letter Report: August 8, 2013.
 - NCHRP Legal Research Digest, Issue: 61 - Legal Aspects for Performance-Based Specifications for Highway Construction and Maintenance Contracts.
- Current research
 - NCHRP 04-39 - Field Performance of Corrugated Pipe Manufactured with Recycled Polyethylene Content
- Upcoming projects
 - NCHRP 09-60 - The Impacts on Pavement Performance from Changes in Asphalt Production
 - NCHRP 12-107 - Development of Guidelines for Full and Hybrid Use of Stainless Steel for Bridge Girders
 - NCHRP 12-109 - Design, Fabrication, and Construction of Long-Span Precast Pretensioned Girders Made with 0.7? Diameter Strands
 - NCHRP 14-37 - Guide Construction Specifications for Pavement Preservation Treatments: Chip Seal and Microsurfacing
 - NCHRP 20-07/Task 374 - Guidelines for Selecting Sign Sheeting Materials for AASHTO M268
 - NCHRP 21-11 -Improving Processes for Characterizing Corrosion Potential of Soils and Fill Materials
 - SHRP 2 R05(A) - Precast Concrete Modular Pavement Technology Training Materials

Panel Member nominations accepted (<http://www.trb.org/TCRP/CRPInfoPanelMembers.aspx>)



Second Strategic Highway Research Program (SHRP 2)

- Recent Reports
 - SHRP 2 Program Brief - Composite Pavement Systems.
 - SHRP 2 Report - Pre-Implementation of Infrared and Ground-Penetrating Radar Technologies for Improving Asphalt Mixture Quality.
 - SHRP 2 Report, Issue: S2-R19A-RW-1 - Bridges for Service Life Beyond 100 Years: Innovative Systems, Subsystems, and Components.
 - SHRP 2 Report, Issue: S2-R06B-RR-1 - Evaluating Applications of Field Spectroscopy Devices to Fingerprint Commonly Used Construction Materials.
 - SHRP 2 Report, Issue: S2-R26-RR-2 - Guidelines for the Preservation of High-Traffic-Volume Roadways.