TRB Snap Search: Materials

TRB's involvement in research on Materials from 2019-2020

The Transportation Research Board (TRB) provides innovative, research-based solutions to improve how we move. TRB is part of the National Academies of Sciences, Engineering, and Medicine, an independent, non-profit institution that provides objective advice on scientific, engineering, and medical issues.

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

All available Snap Searches can be accessed online here: http://www.trb.org/InformationServices/Snap.aspx

TRB Research

TRID – The world’s largest and most comprehensive bibliographic source on all modes and disciplines of transportation

- Click here to view search results on TRB published research on Materials within the past year.

Subject Webpage

- Materials Research at TRB

Recent Reports & Publications

- **Airport Cooperative Research Program (ACRP)**
  - Synthesis 96 - Practices to Mitigate Alkali-Silica Reaction (ASR) Affected Pavements at Airports

- **IDEA Projects**
  - Safety IDEA Report 33 - Adaptive Prestressing System for Concrete Crossties
  - Safety IDEA Report 30 - Ballast Real-time Information System
  - Safety IDEA Report 29 - Self-Deicing LED Signal for Railroads and Highway Intersections

- **National Cooperative Highway Research Program (NCHRP)**
  - IDEA Report 207 - MILDGlass: GFRP Strand for Resilient Mild Pre-Stressed Concrete
  - IDEA Report 204 - Biomimetic Antifreeze Molecules: A Novel Solution to Deicing Salts and Air-Entraining Admixtures
  - IDEA Report 202 - Vertical Electrical Impedance Scanner for Concrete Bridge Deck Assessment without Direct Rebar Attachment
  - IDEA Report 199 - Using Medical X-Ray Machine to Determine the Service Life of Concrete
  - IDEA Report 197 - Nano-Enabled Multifunctional Concrete for Transportation Infrastructure
  - IDEA Report 195 - Development of an IDEAL Cracking Test for Asphalt Mix Design, Quality Control and Quality Assurance
  - IDEA Report 191 - Testing of In-Service Bridges Using Automated Ultrasonic Testing Methods
  - Legal Research Digest 80 - Buy America Requirements for Federal Highway Projects
  - NCHRP 20-07/Task 412 - Adjustments to the Superpave Volumetric Mixture Design Procedure for Selecting optimum Asphalt Content
  - Report 946 - Procedures and Guidelines for Validating Contractor Test Data
  - Report 927 - Evaluating the Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder
  - Report 919 - Field Verification of Proposed Changes to the AASHTO R 30 Procedures for Laboratory Conditioning of Asphalt Mixtures
  - Report 914 - Measuring, Characterizing, and Reporting Pavement Roughness of Low-Speed and Urban Roads
  - Report 912 - Guidelines for Detection and Remediation of Soluble Salt Contamination Prior to Coating Steel Highway Structures
  - Report 907 - Design of Concrete Bridge Beams Prestressed with CFRP Systems
  - Report 750 - Strategic Issues Facing Transportation, Volume 7: Preservation, Maintenance, and Renewal of Highway Infrastructure

Updated 06/18/2020
- Synthesis 544 - Concrete Technology for Transportation Applications
- Synthesis 537 - Impact of Asphalt Thickness on Pavement Quality

- Transit Cooperative Research Program (TCRP)
  - IDEA Report 86 - Advanced Neutral Temperature Estimation using Solitary Waves (ANTEUSW)

- TRB Special Reports
  - Report 330 - Performance of Bridges That Received Funding Under the Innovative Bridge Research and Construction Program

- Transportation Research Circulars
  - E-Circular 251 - Relationship Between Laboratory Cracking Tests and Field Performance of Asphalt Mixtures
  - E-Circular 248 - 12th International Conference on Low-Volume Roads
  - E-Circular 241 - Past, Present, and Future of Asphalt Binder Rheological Parameters

Current & Upcoming Projects

- Current Projects
  - NCHRP 01-61 - Evaluation of Bonded Concrete Overlays on Asphalt Pavements
  - NCHRP 09-57A - Ruggedness of Laboratory Tests to Assess Cracking Resistance of Asphalt Mixtures
  - NCHRP 09-63 - A Calibrated and Validated National Performance-Related Specification for Emulsified Asphalt Binder
  - NCHRP 09-64 - Developing Laboratory Methods and Specifications to Test Tack Coat Materials
  - NCHRP 10-107 - Guide for Implementing Performance Specifications
  - NCHRP 12-117 - Guidelines for Corrosion Protection of Steel Bridges Using Duplex Coating Systems
  - NCHRP 18-17 - Entrained Air Void System for Durable Highway Concrete
  - NCHRP 18-18 - Design and Construction of Deck Bulb Tee Girder Bridges with UHPC
  - NCHRP 18-19 - Rating Concrete Water Permeability Based on Resistivity Measurements
  - NCHRP 20-07/Task 374 - Guidelines for Selecting Sign Sheeting Materials for AASHTO M268
  - NCHRP 22-40 - Update to AASHTO M 180-18 and Associated Highway Guardrail Specifications
  - NCHRP 20-44(04) - Implementing Products from NCHRP Research on Adhesive Anchor Systems
  - NCHRP 20-44(18) - Validation of the PFC Performance-Based Mix Design Method
  - NCHRP 20-44(19) - Implementation of Proposed AASHTO Standards for Asphalt Binders and Mixtures
  - NCHRP 20-44(24) - Pilot Test of Proposed Standard Practice for Recycling Agents in Asphalt Mixtures Incorporating RAP and RAS
  - NCHRP 20-44(25) - Workshop to Introduce Proposed Changes to AASHTO M 320 and M 332 to Key Stakeholder Groups
  - NCHRP 25-57 - Breaking Barriers: Alternative Approaches to Avoiding and Reducing Highway Traffic Noise Impacts
  - NCHRP IDEA 20-30/IDEA 220 - Bridge Deck Sealant Monitor: Thermal Sealcheck
  - NCHRP IDEA 20-30/IDEA 219 - A Novel Durable, Healable and Conveniently Removable Pavement Marking Material Suitable for Both Permanent and Temporary Marking Uses
  - NCHRP IDEA 20-30/IDEA 218 - Development of a Fast and Cost Effective Asphalt Mixture Fatigue Test System
  - NCHRP IDEA 20-30/IDEA 210 - Material Characteristics of Cu-Based Superelastic Alloys for Applications in Bridge Columns to Improve Seismic Performance
  - NCHRP IDEA 20-30/IDEA 197 - Hexagonal Boron Nitride Reinforced Multifunctional Concrete for Transportation Infrastructure
  - NCHRP Synthesis 20-05/Topic 51-09 - Portland Cement Concrete Pavement Joint Sealant Practices and Performance
  - NCHRP Synthesis 20-05/Topic 51-08 - Practice and Performance of Cold In-Place Recycling and Cold Central Plant Recycling
  - NCHRP Synthesis 20-05/Topic 50-14 - Practices for Fabrication Asphalt Specimens for Testing in Laboratories
  - NCHRP Synthesis 20-05/Topic 49-09 - Concrete Technology for Transportation Applications
  - Safety IDEA Project 33 - Adaptive Prestressing System for Concrete Crossshies
  - TFRS 01 - Quality Assurance (QA) Aspects of Performance Related Specifications (PRS)

- Upcoming Projects
  - NCHRP 09-65 - Capturing Durability of High Recycled Binder Ratio (RBR) Asphalt Mixture
o NCHRP 09-66 - Mechanical Properties of Laboratory Produced Recycled Plastic Modified (RPM) Asphalt Binders and Mixtures
o NCHRP 09-67 - New Materials & Technology Deployment in Asphalt Pavement Structural Design
o NCHRP 10-103 - Improving Guidance of AASHTO R 80/ASTM C 1778 for Alkali-Silica Reactivity (ASR) Potential and Mitigation
o NCHRP 10-104 - Evaluating Use of Unconventional Fly Ash Sources in Highway Concrete
o NCHRP 12-121 - Developing AASHTO Specifications for the Use of FRP Auxiliary Reinforcement in Prestressed Concrete Beams and Girders
o NCHRP 12-120 - Stainless Steel Strands for Prestressed Concrete Bridge Elements
o NCHRP 18-20 - AASHTO LRFD Design, Installation, and Standard Practice of Testing for Cured In-Place Pipe Liners
o NCHRP 20-44(26) - Implementing Guide Specifications for the Construction of Chip Seals, Micro Surfacing, and Fog Seals
o NCHRP Synthesis 20-05/Topic 52-17 - Use of Rejuvenators in Asphalt Concrete Mixtures Containing High RAP

Reports from the National Academies Press on Materials
o A Quadrennial Review of the National Nanotechnology Initiative - Nanoscience, Applications, and Commercialization
o Frontiers in Thermal Transport and Energy Conversion
o Frontiers of Materials Research
o High-Entropy Materials, Ultra-Strong Molecules, and Nanoelectronics
o Data-Driven Modeling for Additive Manufacturing of Metals

Committees & Panels

Sign-up to be a committee "Friend"

TRB Standing Committees – Search by transportation mode and committee topic
o ACP55 – Traffic Control Devices
o AKB10 – Innovative Highway Structures and Appurtenances
o AKB70 – Culverts, Buried Bridges and Soil Structure Interaction
o AKG20 – Soil and Rock Properties and Site Characterization
o AKG30 – Geo-Environmental and Climatic Impacts on Geomaterials
o AKG40 – Mechanics and Drainage of Saturated and Unsaturated Geomaterials
o AKG50 – Transportation Earthworks
o AKG80 – Geosynthetics
o AKG90 – Stabilization of Geomaterials and Recycled Materials
o AKM10 – Production and Use of Asphalt
o AKM20 – Binders for Flexible Pavement
o AKM30 – Asphalt Materials Selection and Mix Design
o AKM40 – Asphalt Mixture Evaluation and Performance
o AKM50 – Advanced Concrete Materials and Characterization
o AKM60 – Properties of Concrete and Constituent Materials
o AKM70 – Durability of Concrete
o AKM80 – Aggregates
o AKM90 – Polymer Concretes, Adhesives, and Sealers
o AKT30 – Pavement Maintenance

Task Forces - Search for task force under committee here

CRP Panels
o Project Panels Related to Materials

Councils
o A001C – Young Members Coordinating Council

Recent and Upcoming Events

Upcoming Conferences - Left hand menu "upcoming conferences by topic"
(Conferences cosponsored by TRB are denoted with an asterisk.)

Transportation Asset Management Summer MegaMeeting*
July 13, 2020
Online

**International Conference on Advances in Materials and Pavement Performance Prediction (AM3P)**
*August 5, 2020*

Online

**Second International Conference on 3D Printing and Transportation**
*April 21, 2021*

Washington, DC

**2020 International Conference on Resource Sustainability: Sustainable Pavement Technologies**
*May 28, 2021*

Tirupati, India

**Webinars** – View upcoming webinars, suggest a webinar or add registration information

**Past Webinars**

- **Materials**

**TRB’s Transportation Research Information Services (TRIS)**

TRIS includes the **TRB Library** and the **TRIS Databases** (listed below) which are available 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](http://trid.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](http://pubsindex.trb.org)

**Research in Progress (RiP) Database** – Current or recently completed transportation research projects - [rip.trb.org](http://rip.trb.org)

**Research Needs Statements (RNS)** – Research needs as identified by TRB Technical Activities standing committees - [rns.trb.org](http://rns.trb.org)

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