

Pavement

MAY 2026

Project Title: Partnered Pavement Research Center (PPRC) 23: Performance Related Specifications

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DRISI provides solutions and knowledge that improves California's transportation system.

Continued Support for Implementation of Performance Related Tests and Specifications for Balanced Mix Design, Increased Recycling of Asphalt Mixes, and Integration of Mix Design and Structural Design

Facilitating the adoption of Balanced Asphalt Mix Design through improved performance-related tests and specifications.

WHAT IS THE NEED?

The Balanced Asphalt Mix Design (BMD) approach is essential for ensuring that asphalt mixes used by the California Department of Transportation (Caltrans) meet performance expectations, especially with diverse asphalt mix types and evolving industry standards. Optimizing Performance Related Tests (PRTs) is necessary to speed up the approval process, making it more efficient and cost-effective for both large-scale rehabilitation projects and routine endeavors. The project also aligns with Caltrans' commitment to sustainability by evaluating a wider range of asphalt mixes, including those with recycled materials, thus reducing life cycle costs and minimizing environmental impacts.

WHAT ARE WE DOING?

This task focuses on:

- Refining existing PRTs for faster initial mix approvals and developing alternative PRTs for routine projects.
- Evaluating high recycled content and other innovative mix types using PRTs.
- Supporting full-scale asphalt rehabilitation/reconstruction projects with Performance Related Specifications (PRS).
- Developing alternative test methods for fatigue cracking.

- Providing recommendations for BMD tests and specifications, and communication support for BMD implementation.

WHAT IS OUR GOAL?

The primary goal of this task is to implement a BMD strategy that reduces life cycle costs, minimizes environmental impact, and enhances the sustainability of asphalt-surfaced pavements on Caltrans' state highway network.

WHAT IS THE BENEFIT?

This task aims to streamline the asphalt mix approval process, leading to cost savings and environmental benefits. The incorporation of recycled materials in asphalt mixes will reduce life cycle costs and minimize environmental impacts, supporting Caltrans' sustainability goals.

WHAT IS THE PROGRESS TO DATE?

The research team has made the following progress for each subtask:

- The construction of the test track for new materials and new test method validation has been completed.
- Continued annular ring shear testing of all test track materials and materials from other projects. Continued work on laboratory rut testing and Heavy Vehicle Simulator (HVS) testing report. All HVS and laboratory testing except annular ring shear is now complete and draft report has been written and is being edited.
- See outside
- The University of California Pavement Research Center was informed by Caltrans that industry is not able to build a second test truck until the summer of 2026 at the soonest. After discussion with Caltrans moved forward with discussions for pooling data with researchers in other states and doing rut depth measurements on

high reclaimed asphalt pavement (RAP) pilot sections.

- Monitored overlay on concrete for age-related reflective cracking. Initial cracking was observed. Decided to wait to put HVS on to allow additional cracking to proceed.
- Continued editing of field and laboratory aging report. Continued work on writing a 4-page motivation and summary of BMD based on feedback from Pavement and Materials Partnering Committee (PMPC), with recommended specification framework and values.
- Completed tech memo on Ven-150 high RAP pilot mixes and submitted to editor. Completed all testing on CC-4 high RAP pilot except flexural fatigue.
- Sampling and testing of pilot projects using rubberized asphalt mixes with RAP have been completed.
- Sampling and testing of pilot projects with other types of innovative asphalt mixes have been completed.
- Received approval to publish report on condition surveys of three high Recycled Asphalt Pavement/Shingles (RAP/RAS) projects (ED-49, SBd-215, SJ-26) built in 2022, waiting for Americans with Disabilities Act (ADA) remediation. Started planning for a second round of condition surveys including rut depth measurements.
- Completed response to comments on SJ-26 high RAP project, waiting for ADA remediation. Published SBD-215 report. Published RAP in Rubberized Hot Mix Asphalt (RHMA) laboratory test and California Mechanistic-Empirical Design (CalME) simulations report. Started high RAP pilot summary analyses and report.
- Completed testing of expanded factorial for binder fatigue test. Reviewed all results and started writing report.



- Continued to update Office of Asphalt Pavements, Materials Engineering and Testing Services, Construction, BMD Working Group (WG), potential members of future high RAP WG, and Industry on BMD methodology and framework, and progress on high RAP/RAS mixes.