Performance Related Specifications for Asphalt Superpave and QC/QA

**CONCEPT**
- Performance related tests and specifications for use with asphalt pavement of all types
- Asphalt-Aggregate Mix Analysis System (AAMAS) NCHRP
- SHRP A-003A
- AC Long Life Specifications
- Asphalt Caltrans, TRB symposium
- New Construction Quality Database Caltrans METS

**SCOPE**

**RESEARCH**
- Effects of Smoothness on GHG 3.28
- West Track Pay Factors
- Goal 1 Caltrans Pay Factor Report
- Goal 1 Compaction, PRS tests, pre-CalME ME design method ISAP, 1996 paper & pay factors
- Long life asphalt specs for LA-710 mix design, structural design
- Updates to LLAC specs 2014 - 2016 Teh-5, Sis-5, Sol-80 and design with CalMe 2 3.18 Phase 2 review of potential PRS tests for Caltrans SuperPave mix design
- 3.25 PRS for open graded materials, including rubberized
- 4.24 Evaluation of previous repairs on smoothness
- 3.40 Continue review of SCB and RLT as PRS tests for Caltrans SuperPave mix design (the border indicates current project, same applies to others)
- Use of image analysis in cracking tests to look at strain fields

**DEVELOPMENT**
- CalME v. 1.0
- CalME v. 2.0
- 3.32 HWTT round robin
- 3.33 Updates to LLAC approaches and extension to other mixes
- Define relationship between binder, FAM and mix properties, and test methods and specifications
- Fatigue • Rutting • Stiffness • Other properties
- 3.37 PRS development Simplified PRS procedures Monitoring of previous LLAC projects Pilot projects for using SCB and/or RLT
- 3.40 Commercial adoption of PRS tests
- Further improvement of moisture spec. based on field validation (antistrap)
- Comparison of smoothness under old and new specifications
- Update parameters for HWTT for rubberized mixes
- Continued development of FAM as a PRS mix test
- Low temperature crack tests for PRS for binder, instead of just current rheological properties

**IMPLEMENTATION**
- 3.24 Support set up and operation of CT smoothness specs
- 3.30 Guidance for contractors to meet PRS specs
- Helped develop updated AASHTO & ASTM T321 tests for 4 point beam 3.31 sine vs HS loads
- 4.66, 4.51a, NCST. Initial use of FAM compared to mix tests
- 3.40 comparison of plant and lab aging effects on performance properties
- 3.40 Further comparison of SCB vs 4PB and RSST vs RLT
- Finalize lab mix specimen preparation, aging, conditioning, compaction, mixing, etc. lab to match plant mix, account for plant processes, silo times
- Update recommended pay factors
- PRS for geogrids, interlayer materials. Lab tests, PRS, APT maybe
- Alternative “failure” parameter for very flexible mixes, like rubber and polymer, apply to all mixes for PRS
- Develop CIR, CCPR tests and specifications (with NCHRP 9-62)

**VISION**

- 3.37 Additional updating of PRS spec. based on field experience and test improvements
- 3.37 Training for contractors and owners
- 3.37 Support LLAC projects - QA testing for Sac-5
- Review and update process for setting PRS specification in terms of test variability and contractor requirement to meet specification
- Support document for contractors and agency labs to get set up for PRS. databases, QC, training, eqpt, etc.
- Additional standardization of full scale mix and FAM tests for QC/QA
- Further improvements in recommendation for appropriate tests based on field experience in different types of projects
- PRS for routine projects with different levels of reliability of materials, and new simplified tests
- Precision and bias for flexural beam, RLT, simple cracking test, stiffness; continued development of simplified cracking tests, correlated with fatigue SCB and IDEAL tests with new parameters
- Implementation of NCHRP 9-62 in place recycling research
- PaveM follow up on PRS projects

For information on past research projects, visit Caltrans [www.dot.ca.gov/research/researchreports/index.htm](http://www.dot.ca.gov/research/researchreports/index.htm) and UCPRC [www.ucprc.ucdavis.edu](http://www.ucprc.ucdavis.edu)
For additional information on Caltrans Pavement Research Program, email Nick Burmas, Office Chief of Materials and Infrastructure, nick.burmas@dot.ca.gov

Project Key
- Past
- Current
- Proposed
- Future

Pavement Research Roadmap
Asphalt PRS & QC QA version date November 12, 2019