



Pavement

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Project Title:
Performance Related Specifications
for Rubberized Asphalt Binder

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Task Manager:
Junxia Wu
Transportation Engineer
junxia.wu@dot.ca.gov

Performance Related Specifications for Rubberized Asphalt Binder

Development of Testing Procedures and Criteria for
Performance Based Specifications (PRS) for Rubberized Asphalt
Binder

WHAT IS THE NEED?

The current specification used for testing and acceptance of wet-process asphalt rubber binders is focused mainly on measuring the viscosity in the field using a handheld rotational viscometer. However, viscosity does not relate directly to in-service performance of the binder in a Rubberized Hot Mix Asphalt (R-HMA). This project will complete work to develop supporting data and information for performance related Superpave Quality Control (QC)/Quality Assurance (QA) specifications for mix design and mix placement of all types of asphalt rubber binders.

WHAT ARE WE DOING?

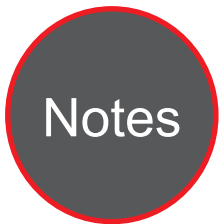
This task will review and revise base binder selection criteria for Asphalt Rubber (AR) binders based on a review of statewide performance and experience. Criteria for performance testing of RHMA mixes will be reviewed and revised based on high temperature properties. It will also investigate use of fine dry rubber and polymerized/pelletized, soluble rubber as additional approaches for incorporating recycled tire rubber in asphalt mixes, primarily dense-graded. Recommendations for use of dry and polymerized/pelletized, soluble rubber in dense-graded mixes and establishment of round robin PG testing of AR binders will be developed.

WHAT IS OUR GOAL?

The goal is to update specification language for asphalt rubber binders and RHMA mix testing, recommend QC/QA methods, and support Caltrans in its implementation.



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WHAT IS THE BENEFIT?

It is expected the research will lead to simplified PRS in terms specification development and deployment in Asphalt Concrete (AC) long life projects. The simplified PRS will be easier for contractors and districts to understand and communicate but will not increase risk of poor performance to Caltrans.

WHAT IS THE PROGRESS TO DATE?

As of February 2022, the research team has made the following progress:

- Continuing to test field-produced binders. Continued testing to assess the effects of RAP binder replacement in asphalt rubber binders. Continuing preparation of Phase 3 report
- Continuing analysis on Performance Grade (PG) base binder map and PG map for AR binders
- Continuing literature review to understand latest developments in fine dry rubber and polymerized/pelletized, soluble rubber in AR applications