

RESEARCH PROBLEM STATEMENT

DATE: 09/07/2018	PROJECT AREA: Maintenance
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TITLE: Fully Leveraging Scrub Seals

PROBLEM STATEMENT:

Scrub seals, or Rejuvenating Mass Crack Treatments, have been gaining traction in Districts 4 and 8 as a supplement to the more common chip seal in pavement maintenance. Like chip seals, scrub seals restore surface friction and seal the existing pavement surface, but they also force asphalt emulsion into cracks which provides the added benefit of treating cracks during the application of the asphalt emulsion. This is accomplished by dragging a large broom behind the spray applicator, which forces asphalt emulsion into the cracks. However, there are significant questions on scrub seals. First, the special provision for scrub seal indicates that a Class 4 gradation is required. However, this is a difficult gradation to obtain across the state, especially in the southeast portion of the state. Therefore, it would be beneficial to use other gradations of aggregate, such as Class 2. Another issue with gradation is the impact of small changes of P200 on the scrub seal behavior. The second open question is the comfort level with scrub seals. Currently, districts are very comfortable with applying chip seals and are interested in becoming as comfortable with applying scrub seals.

OBJECTIVES:

There are two objectives to this research. First, the influence on gradation on the performance of scrub seals will be investigated, focusing on the behavior of a Class 2 gradation and the influence of changes of P200 material on the performance of the scrub seal. Second, a 1.5 day training seminar will be developed. This seminar will go over the application of the scrub seal, the maintenance of scrub seal equipment, and will highlight the differences and similarities between a scrub seal and chip seal. This seminar will be offered in all ten districts.

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

There will be two forms of research implementation. First, a 1.5 day training seminar will be developed that will include a Scrub Seal manual for ArDOT. Second, the special provision for Rejuvenating Mass Crack Treatments will be updated to include findings on aggregate gradation and recommendations for construction practices based on feedback from the districts during training. Scrub seal could save \$0.28/yd² over crack sealing and chip sealing. In 2017, if all CRS2P emulsion and crack fill was replaced with scrub seal, up to \$565,600 could have been saved.

Estimated Project Duration: 24 Months

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Standing Subcommittee
Ranking
4/6

Advisory Council
Ranking
10/37

Statement Combined with
Statement Number(s)
9/37