

## **EFFECTS OF BONUS PROVISIONS ON HMA SUPERPAVE MIXTURE SPECIFICATIONS THROUGH PAY FACTOR ANALYSIS**

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### *ABSTRACT*

With the use of Superpave mix design methodology highway agencies have been developing and/or adopting specifications for hot mix asphalt (HMA). In an effort to further promote improvements in mixture quality and performance these acceptance specifications are further modified to include bonus provisions. After addressing (i) the differences in HMA mixture properties in plant versus behind the paver, and (ii) assessing the risks associated with the acceptance of Superpave mixtures to both the agency and contractor, it was equally important to (iii) evaluate the effects of a bonus provision incorporated into the HMA acceptance specification in regards to pay factors. The pay factor study was based on simulation analysis using the population characteristics of dense graded Superpave mixtures and the bonus provisions of the revised specification. The study examined the impact of the current HMA production quality on the composite mixture percent within specification limits (CMPWSL) and mixture pay factor (MF) and assessed the impact of alternative specification tolerances. Comparatively to the no-bonus provision, the pay factors generated from the revised specification provided higher incentives for higher quality HMA mixtures and increased pay deduction for lower quality.