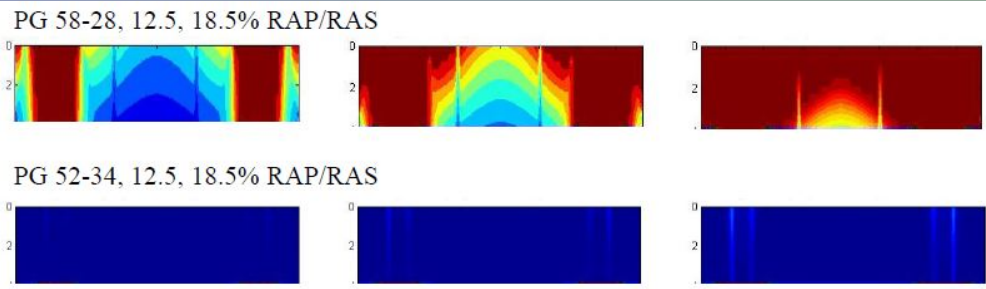
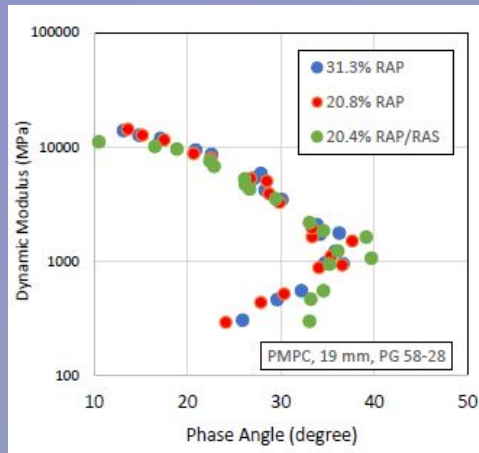


New Hampshire
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Correlation between Laboratory and Plant Produced High RAP/RAS Mixtures

Final Report

Prepared by the University of New Hampshire Department of Civil Engineering for the
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16. Abstract Cracking is one of the most prevalent types of distresses in asphalt pavements. There are different cracking index parameters that are determined from tests conducted on binders and mixtures to assess cracking potential. The objective of this study is to compare binder and mixture parameters and evaluate the similarities and differences between the rankings and values obtained. This study includes binder and mixture testing on 14 plant produced mixtures including three different binder grades, three binder sources, three aggregate gradations, and mixtures containing a range of RAP and/or RAS contents. Testing included PG grading and 4mm DSR testing on the extracted and recovered binders that were long term aged. Mixture testing included complex modulus, SVECD fatigue, and DCT testing on short term aged mixtures. Parameters evaluated included high and low PG temperatures, ΔT_{cr} , Glover-Rowe parameter (binder and mix-based), R value, dynamic modulus, phase angle, number of cycle to failure from SVECD and LVECD analysis, and fracture energy. The results show that generally the binder parameters correlate well with each other but the mixture parameters do not. Good correlation was observed between binder and mixture stiffness-based parameters, but there was generally low correlation observed between binder and mixture cracking parameters for the mixtures evaluated in this study, possibly a result of differences in aging level. Recommended future work includes non-linear statistical analysis, incorporation of field performance, and testing on long term aged mixtures.			
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Jo Sias Daniel, Ph.D., P.E,
Associate Professor of Civil Engineering, University of New Hampshire

Reyhaneh Rahbar-Rastegar, Graduate Research Assistant
Department of Civil Engineering, University of New Hampshire

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