

National Seminar on Moisture Sensitivity of Asphalt Pavements

Breakout Session 3

Design and Specifications



National Seminar on Moisture Sensitivity of Asphalt Pavements

Breakout Session 3: *Design and Specs*

- Identify Best Practices
 - Materials selection

- Aggs – Test CAA, FAA, SE, MB, PI, wash gradations, natural fines, mineral filler.
- Binders – Modifiers - stiffer binders, Superpave PG tied to environment, Binder interactions.



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Breakout Session 3: *Design and Specs*

- Identify Best Practices
 - Mix design

- Include moisture test,
- VMA-gradation, shape, texture.
- Include all additives in the mix design - replicate production process ie LS marination
- Don't use a restrictive gradation band
- Include bag-house fines during design



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■ Identify Best Practices

■ Structural design

- Preliminary evaluation of existing structure for stripping potential. Do not seal lower layer which could strip. Check permeability with cores.
- Need impermeable bottom layer - prime coat or seal on new construction.
- Each layer should reduce permeability as the surface is approached.
- Permeability should be controlled through density, NMAS, or permeability test.



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Breakout Session 3: *Design and Specs*

- Identify Best Practices
 - Structural Design

- Density connected to fine or coarse mix.
- consider drainage on all projects.
- Consider internal drainage.
- Don't overlay OGFC
- Increased need for structural design best practices based on increased traffic.



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■ Identify Best Practices

■ Construction

- Manage bag-house fines
- Mix verification with VMA and moisture test.
- Compaction controlled through volumetrics- MTD
- % MTD tied to mix type and NMAS, PWL, temp controls for mat.
- Joint Density specs.



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- Identify Best Practices
 - Construction

- Segregation profile.
- Include HMA pavement construction handbook in spec
- Joint seals or heaters.
- LAS added at refiner or terminal.
- Additive addition controlled by mix verification moisture test.



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Breakout Workshop 3: Design and Specs

- Identify Gaps and Barriers
 - Tests that correlate to field performance
 - What are the real failure mechanism
 - Documentation of field performance.



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Breakout Session 3: *Design and Specs*

■ Identify Research Needs

- Diagnostic Tools for moisture damage
 - Standardization of terms, evaluation techniques, testing data format, forensic procedures.
- Long term effect of treatments – aging, moisture and pavement performance
- Synthesis on test procedures, what mechanisms are measured per test, variations used by test, pros and cons per test.



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Breakout Session 3: Design and Specs

■ Elements of a Strategic Plan

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