EME demonstration project in Q – March 2014

Presentation outline
- Why EME?
- Technology Transfer (T²) effort in Australia
  - Austroads TT1908: EME mix design
  - TMR P9: Structural design
- Translating mix design requirements
- Developing structural design guidelines

Overview of national EME Technology Transfer effort
Erik Denneman

Why EME?
- Properties
  - Workable
  - Stiff
  - Rut resistant
  - Fatigue resistant
  - Moisture resistant
- thanks to
  - High binder content ≈ 6%
  - Hard binder: Penetration value 10-25
  - Low air voids content < 6%
  - Performance related design method
- Opportunity to reduce pavement thickness

Translating design requirements
- Appropriate binder specification selected
- Suitable Australian aggregate criteria set
- Comparative testing using French and Australian test methods:
  - Existing French EME2 design tested at ARRB
  - Development of mix designs in France using Australian materials, by industry

Translating design requirements
- Workability
EME demonstration project in Q – March 2014

Translating design requirements

- Stiffness
- Fatigue
- Moisture

Translating design requirements

- Rutting

Translating design requirements

- Moisture

**Translating design requirements**

- Deliverable Austroads project: performance related mix design guideline using Australian test methods
- Testing for design criteria development nearing completion

<table>
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<tr>
<th>Performance property</th>
<th>Test description</th>
<th>Test method</th>
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<tr>
<td>Workability</td>
<td>Servopac compaction</td>
<td>EN 12697-31</td>
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<tr>
<td>Stiffness</td>
<td>Four point bending (4PB)</td>
<td>EN 12697-26, Appendix B</td>
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<tr>
<td>Permanent deformation</td>
<td>Wheel-tracking</td>
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<td>Fatigue</td>
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<td>Moisture sensitivity</td>
<td>Indirect tensile</td>
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**Structural design guideline**

- TMR/ARRB NACOE project P9
- Purpose: develop structural design guidelines for pavements containing EME
- Methodology
  - Evaluate compatibility of EME with current pavement design methods
  - Conduct laboratory experiments
  - Monitor field trials
  - Develop models for fatigue life prediction

**Summary**

- EME T² well underway thanks to combined efforts of road agencies, AAPA members and research organisations
- Performance related mix design guideline being prepared
- Structural design guidelines under development
- Trial sections being constructed (QLD, NSW)