Planning for the Future: Academic / Research Perspective

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Summary

• Introduction
• Research protocols
• Fit-for-purpose certification
• Conclusions
Introduction

• Why do research?
  - Quantify benefits & performance
  - Use for guidelines & specs
  - Performance guarantees

• Status quo
Status quo on research

- Minimal use of DPs in terms of unsealed road networks
- Ongoing in-house development/research
- Research is not focused on unsealed road management
- Limited published information
- No formal documentation
- Can't guarantee performance with documentation
Introduction

• Why do research?
  - Quantify benefits & performance
  - Use for guidelines & specs
  - Performance guarantees

• Status quo

• Industry perspectives
Road industry perspectives

• Questionnaire (47)
  - Dust and passability are a problem
  - Aware of additives, but considered expensive and poorly marketed
  - Varying programs in place
  - Overall impressions varied from poor to good
  - Future of additives dependent on price and documentation

• Needs
  - Appropriate research (cost/benefit, design, PPGS)
  - Documentation (linked to existing specs and guides, etc)
  - Product specs / fit-for-purpose certification
Road industry perspectives

• Additive industry
  - Technical
    • Documentation
    • Engineering
      - Testing
      - Construction methods
      - Quality control
  - Human
    • Marketing methods
Bottom line

• Practitioners cannot make an informed decision on whether to use an additive or not
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## Research protocol

<table>
<thead>
<tr>
<th>Phase</th>
<th>Decision</th>
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</thead>
<tbody>
<tr>
<td>1  Description/Categorise</td>
<td></td>
</tr>
<tr>
<td>2  Literature review</td>
<td>✓</td>
</tr>
<tr>
<td>3  Laboratory screening</td>
<td>✓</td>
</tr>
<tr>
<td>4  Laboratory testing (performance)</td>
<td>✓</td>
</tr>
<tr>
<td>5  Laboratory testing (environmental)</td>
<td>✓</td>
</tr>
<tr>
<td>6  Field testing</td>
<td>✓</td>
</tr>
<tr>
<td>7  Data analysis</td>
<td>✓</td>
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<tr>
<td>8  Specialised testing</td>
<td></td>
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<tr>
<td>9  Guidelines</td>
<td></td>
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<td>10 Technology transfer</td>
<td></td>
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</tbody>
</table>
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Fit-for-purpose certification

- Can be used:
  - As an interim measure of performance (PPGS)
  - To assess strengths & limitations
  - For informed decision making
    - For appropriate designs

- It is NOT:
  - An acceptance or rejection
  - A guarantee of performance
  - A substitute for engineering practice
Certification procedure

1. Approve application for additive certification
2. Establish a technical assessment team
3. Scan background documentation
4. Assess quality management system
5. Assess environmental compatibility & validity of MSDS
6. Review background research that has been conducted
7. Review guideline documentation
8. Carry out control testing
9. Issue certificate
10. Conduct post certificate monitoring
Documentation

• Background document
  - Additive chemistry
  - Stabilization mechanism
  - Environmental testing
  - Lab performance testing
    • Experimental design
  - Field testing
    • Experimental design
  - Performance & cost analysis
  - Guideline criteria
Documentation

- **Guideline**
  - Purpose & limitations
  - Environmental data
  - Economic analysis
  - Design
    - Material
    - Structural
    - Climatic
  - Construction
  - Maintenance
  - Rejuvenation
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Conclusions

• We need to do things differently
  - User perspectives
  - Systematic research
  - Appropriate documentation
  - Product performance guarantees
  - Fit-for-purpose certification
  - National standard
The way forward

- An "owner" for unsealed road specs
- Additive industry body
- Dedicated funding stream
- Category specifications
- Research protocol
  - Performance based
- Environmental assessment protocol
- Guidelines and specifications
  - Performance based / cost-benefit
- Education and training
Key issues - future