



# 12<sup>TH</sup> Conference on Asphalt Pavements for southern Africa

13 -16 October 2019 | Sun City | South Africa

## CAPSA 2019 Workshop Summary

Wednesday, 16 October 2019

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## Overview of Workshops



- Short summarized workshop feedback
- **BIG THANK YOU**
- Planning:
  - Sifted through +100 papers
  - FAC: Identified, debated, selected, identified, debated, selected topics
  - First focus has always been submitted papers
    - Some passionate Steering Committee members - fight for their slot!
  - Sad reality is we can only fit so much in 3 days – (choose 2 out of 8)
- 9 Workshops:
  - *+1200 hours of professional time*
  - *Significant issues debated*

## Workshop Overview – Subjects covered



- 1. Research:**
  - Leadership, cooperation and program development 30
- 2. Low volume roads:**
  - Outcomes for cost-effective provision of low volume sealed roads 42
- 3. Seals:**
  - Selection of appropriate seal types and binder combinations 140
- 4. Asphalt:**
  - Design and performance: Testing and designing for asphalt fatigue 150
  - Optimal design of asphalt 60
  - Asphalt process control – digital construction technologies 40
- 5. Binders:**
  - Bituminous binder testing and standard 33
  - Recent advancements in innovative bituminous materials 75
- 6. Road Maintenance:**
  - Innovation in road maintenance techniques and procedures 130

## WS1: Testing and designing for asphalt fatigue



### Main Topics:

- Fatigue tests; how to perform and what test to use? - **AASHTO T321**
- Time taken to complete testing, especially during design - **Protocol**
- Binder/mixture relationship? - **Is it possible to use only binder results**
- Where to use fatigue tests - design, plant-mix, construction?
- Alternative approaches to incorporate fatigue in design – materials/designs

### Main outcomes and resolutions:

- System of pre-approved mixes in SA be implemented,
  - Reduce testing and eliminate delays of a construction project.
  - Aimed at Level 2 projects (SABITA Manual 35 and proposed SARDS)
- Implement a simple process of Material Designs based mainly on volumetric properties of mix to demonstrate that pre-approved mix is delivered.

## WS2 – Regional and International Research: Leadership, Cooperation and Program Development



- **Main Topics:**
  - National RDI Landscape and Management
  - Human Capital Challenges
  - Industry documentation
- **Main Outcome:**
  - Need to manage issues around leadership & implementation, accountability
  - Systems needed for support of staff & Post Graduate student retention
  - Secure central space required for approved & supported documentation
- **Main Resolution(s):**
  - Need for **national roads research coordinating committee** to plan, oversee, guide & manage national roads research in SA (**all roads**)
  - **Implement secure** central space required for approved/supported documentation

## WS3 – Digital Technologies – Answer To All Our Challenges



- **Main Topics:**
  - Smart, digital technologies
  - Improve QC on site
- **Main Outcome:**
  - Understand SMART technologies and what they can and cannot do.
  - Understand that technologies are tools - enable you to address a challenges, e.g. variability and premature failure of our road network.
  - Understand the benefits and shortcomings of digital technologies, need for drivers of change, need for changing roles and implementation strategies.
  - Understand need for an environment - innovation is encouraged and cherished.
  - Understand that low-bid environments / punitive environments are barriers!
- **Main Resolution(s):**
  - Establish a RPF technical committee, consisting of all role-players (client, consultant and contractor) to review / implement above.

## WS 4: Selection of appropriate seal types / binder combinations



- **Main Topics:**
  - How to select appropriate seal type and binder combinations for low risk / best performance
- **Main Outcome:**
  - Risks related to aggregate stripping and bleeding can be reduced by appropriate selection of binder and aggregate combinations (seal types), correct design and attention to detail during construction
- **Main Resolution(s):**
  - Update TRH3 (Sabita Manual 40) by addressing list of aspects that need clarification
  - Urgent research needed on seal work based on list of aspects recorded at the workshop

## WS5 – Optimal asphalt design



### **Main Topics:**

- Fit for purpose designs needed to provide the required performance characteristics for the intended application.

### **Main Outcome:**

- Implementation of Manual 35 needs to be driven: Where does the performance liability lie?
- Off the shelf designs. Is this the way forward to resolve time constraint problems associated with performance designs?
- Balanced mixed design requirements for optimal durability mixes fit for purpose. (Clarification regarding specification, performance testing and analysis)

### **Main Resolution(s):**

- Clarify and streamline considerations for pre-certified mixes, certification process.
- Implement more industry workshops (SAT) to drive implementation of Manual 35.



## WS6 – Research outcomes for cost-effective provision of LVSR



- **Main Topics:**
  - Performance of LVSR - unconventional material specs / pavement designs
  - Cost-effectiveness of alternative surfacings
- **Main Outcome:**
  - Performance criteria (Rut) to be expanded to include others (IRI)
  - Augment designs with whole-life cycle maintenance strategies in accordance with defined levels of service
  - Select cost-effective surfacing solutions - Account for aspects that influence performance e.g. drainage / topography / optimize labour-based approach
- **Main Resolution(s):**
  - Package appropriately, communication of benefits of low cost surfacings for decision makers to secure sustainable funding.
  - Use of unconventional material specifications requires additional research to collect statistically-sound evidence before incorporation into catalogues

## WS7 – Bituminous binder testing and standards



- **Main Topics:**
  - Ageing
  - Binder recovery
  - Frequency sweeps
- **Main Outcome:**
  - Protocols to be upgraded to become the method applicable in SA
    - e.g. SABITA method
  - Certification of specialized testers – ISO 17024
  - SANAS accreditation for calibration of specialized equipment
- **Main Resolution(s):**
  - Though RPF Binders Working Committee
    - Implementation strategy for the rollout of SATS 3208 including protocol development & training
    - Research strategy on ageing and recovery methodology

## WS8 – Innovation in Road Maintenance Techniques & Procedures



- Main Topics:
  - The Role of the PPP Projects in Road Maintenance
  - Digitizing the Entire Road Maintenance Process
  - Term Maintenance Contracts and International Case Study
- Main Outcome:
  - RRM is in much need of professional/technical support from the pavement industry
- Main Resolution(s):
  - Get involvement of NT Government Technical Advisory Committee (GTAC) to allow longer term contracts in maintenance
  - N-DOT to be addressed on the current limitations/conditions of Provincial Road Maintenance Grant (PRMG)
  - Need to have road maintenance as part of future CAPSA

## WS9 – Recent Advances in Innovative Bituminous Materials



- **Main Topics:**
  - Appropriate evaluation of product performance (tests + procedures)
  - Trial sections and applications: risks, timing, monitoring
  - Development of guidelines for industry/ certification of materials?
- **Main Outcomes:**
  - Create data base for “nano”-tech products’ in SA research & monitoring
  - Identify key variables for bond coat testing and standardize protocols
  - A-R2: Binder specifications - not completely controlling performance
  - Compile performance based specifications / Guarantees / Certif.
- **Main Resolutions:**
  - Task group (RPF) research of “nano”-technology applications in roads including laboratory testing, field construction & monitoring
  - Develop / update guidelines for Bond/Tack coat applications

## The Way Forward



- Significant investment in the future of the industry
  - A few overall issues identified
  - Major issues identified per workshop
- Way forward:
  - Details to be sent to CAPSA2019 delegates (and on Website)
  - Further deliberations during RPF
    - Compile implementation plans (Working groups)
- Workshop feedback on Mobile App
  - 3 Selection options: Tuesday afternoon / Today: Before tea / After tea
  - Rating scale : 1 - Very poor; 5 - Excellent

THANK YOU

