

**AAPA
15th
International
Conference**

Austrroads Pavements Technology Initiatives working with Industry in delivering achievements and future directions – Part 1

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Austrroads

**Improving
Australian and
New Zealand
transport
outcomes**



AUSTROADS

An Overview


- Association of Australian & New Zealand road / road transport authorities
- 11 members include:
 - six Australian states
 - two Australian territories
 - Australian government (DoIT)
 - Local government (through ALGA)
 - New Zealand Transport Agency
- annual budget about \$14m



AUSTROADS

**Delivering
Road Research
via Taskforces**

- While there are over 12 Task Forces the most relevant ones to AAPA are
 - Pavement Technology and
 - Asset Management



**Austrroads
Pavement
Technology
Taskforce**

Austrroads Pavements Technology Taskforce comprises:

- All road authorities in Australia and New Zealand
- Industry including AAPA represented by John Lambert
- Local government representatives
- National Transport Commission
- ARRB as SME and project leaders for much of the research.




**Austrroads
Pavement
Technology
Taskforce**

Austrroads working through the Pavement Technology Task Force produced the updated Guide to Pavement Technology including:

- Part 4B Asphalt
- Part 4F Bituminous Binders
- Part 4H Test Method
- Part K Seals
- Part 4J Aggregate and Source Rock

Updated on a rotating 5 year cycle.



Austrroads Guides - Relevance to Industry

Austrroads is working to

- Harmonise the guides to achieve consistency across Australia and reduce/ minimise the need for supplements
- Identify with Industry issues that require improvement including research.
- Ensure guides are reasonable, readable and can be used by their target audience



Austrroads Pavement Guides


Why Harmonise?

Austrroads Guides recognise that individual road authorities have significant differences to manage such as :-

- Traffic volume
- Traffic type
- Climate etc

The Guides provide for various pavements and pavement treatments to meet such needs. But many differences can be minor and need to be rationalised in favour of a national and consistent approach

Productivity will be the winner




Austrroads Pavement Research -Technology Program

Pavements have been in the forefront of Austrroads research in recent years with budgeted funds as follows

- \$1.8M (16%) 09/10.
- \$ 2.5m (22%) 10/11
- \$ 3.7m (25%) 11/12
- \$ 3.8m (25%) 12/13

This does not include contributions in kind which industry and in particular AAPA have contributed towards specific research projects



Austrroads Pavement Research

-Key Projects in recent years

- Asphalt Properties and Mix Design Procedures
- Optimising Binder Performance
- Performance of Warm Mix asphalt
- Polymer Modified Bitumen Spray Seal Trials
- Maximising the use of reclaimed asphalt pavement in mix design



Austrroads Pavement Research

-Industry Support and co operation

- Austrroads Pavement Taskforce is strongly supported by working groups with significant industry participation –
- Bituminous Surfacing Working Group (BSWG)
- Asphalt reference Working Group (ARWG)
- Pavement Structures Reference Working Group (PSWG)




Austrroads Pavement Research

-Industry Support and co operation


I would like to thank all the industry members and companies who assisted the Pavements Technology Taskforce and the working groups over the past 4 years.

A special vote of thanks to John Lambert of AAPA who supported and encouraged the collaboration between Austrroads and industry





Maximising performance of sprayed seals




Maximising performance of sprayed seals

- spray sealing viable low-cost solution for surfacing Australia's vast rural pavement network
- maximising performance is critical
- research into seal-design improvement methods to sustain heavy vehicles
- improvement for seal-design in low traffic environments
- feasibility study for a lab performance fatigue predictor test of spray-seal binder cracking
- trial spray-seal construction in collaboration with Sprayline at a pre-determined test site




Characterisation of PMB performance to achieve enhanced performance

- binder is key component in the performance and service life of bituminous surfacings
- need to improve specifications for procurement to achieve optimum performance
- aim to identify the relationship between test properties and field performance of PMBs
- investigate whether segregating PMBs will show same performance as non-segregating PMBs
- test the effect of polymer degradation on the performance of PMBs




Mix design and field evaluation of FBS pavements





Mix design and field evaluation of FBS pavements

- improvement of marginal materials using recycling techniques known as 'stabilisation'
- bitumen stabilisation has become increasingly popular in Australia—particularly the use of FBS
- need to improve understanding of the performance of FBS materials under traffic loading
- finalising improvement of current Austroads mix and pavement design procedures
- monitoring the performance of under-designed FBS pavements



Improved design procedures for asphalt pavements

- purpose of project to provide improved procedures for designing longer-life asphalt pavements
- development of an improved model for fatigue damage prediction
- new procedures for determining asphalt moduli
- develop improved models for temperature prediction in deep lift asphalt pavements
- single temperature model → multi layered multi temperature model
- evaluation asphalt endurance limits methods
- eventual integration of long-life pavement design concepts into Austroads Guide to Pavement Technology Part 2

**National
spray-seal
trials**




**National
spray-seal
trials**


- monitor, interpret and report on the to-date performance of the Austroads Polymer Modified Binder sprayed seal trials on-site inspection of test sites
- collaborative partnership with industry including knowledge transfer and asset management
- develop and promote best practice and innovation



**High modulus
asphalt
technology
transfer**


- French laboratory – Laboratoire Central des Ponts et Chaussées (LCPC) developed methodology for a enrobé à module élevé Class 2 material
- Enrobés à module élevé Class 2

= EME2



**High modulus
asphalt
technology
transfer**

- French EME mixes offer the advantage of reduced asphalt thicknesses, and lower construction and maintenance costs
- assist industry in the successful transfer of EME technology to Australia
- initial reference testing of French EME2 mix to be conducted at ARRB to set benchmarks for mix-design using Australian test methods
- eventual development of Australian performance-based design guides for EME mixes
- challenge and opportunity for asphalt industry for a paradigm change




Austroads

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