

# AustStab News

## Industry View

At the AustStab AGM held late last year, Scott Young was elected as Vice-President. Young holds the position of Stabilising Manager, Roads – NSW at Works Infrastructure based in Camilla, west of Sydney, and will provide some fresh ideas to the association. If you missed the year end President's report at the AGM, you can download it from [www.auststab.com.au/pdf/agm2006\\_pr.pdf](http://www.auststab.com.au/pdf/agm2006_pr.pdf)

This year the association will focus on the following projects:

- Develop the supervisor unit on stabilisation for the civil construction training package.
- Continued improvements with the contractor accreditation scheme.
- Publish an interim pavement design guide for a cement stabilised base layer for light traffic.
- Upgrade the CPEE unit on insitu stabilisation.
- Upgrade some of the existing AustStab guidelines and construction tips.

In early 2006, AustStab ran a series of stabilisation workshops in Queensland and prepared a range of CBR samples of untreated subgrade material from the Townsville region and samples stabilised with hydrated lime (lime content determined from Austroads approach). The untreated sample was soaked alongside the stabilised sample and within hours the differences were very obvious. The untreated sample had already started to fall apart whereas the other sample showed no signs of deterioration or weakness (see photos). I was recently in Townsville and one of the lime treated samples that had been soaking for almost one year was still in the same condition as I had left it after the workshop. This visual test confirmed to me that the lime stabilised mix design and performance is on the right track.

I hope 2007 is a successful and safe year for your organisation.

*Warren Smith*  
President

[www.auststab.com.au](http://www.auststab.com.au)

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*This lime treated subgrade sample has been soaking for nearly 12 months. In comparison, the untreated sample fell apart in a few hours.*

## 2<sup>nd</sup> Road & Pavement Engineering & Management Conference

The 2<sup>nd</sup> Road & Pavement Engineering & Management Conference is being held in Melbourne on the 28<sup>th</sup> and 29<sup>th</sup> March 2007. This two day conference focuses on the management and engineering of roads, traffic areas, residential streets, rural roads, footpaths and rural reserves.

Some of the topics are:

- Innovative stabilised pavement designs
- Cost effective road maintenance trials in Corangamite Shire (Vic)
- Baw Baw Shire road strategy plan: A practical guide to road management

AustStab recommends that you come along to the conference to become familiar with new developments in road stabilisation.

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*Sometimes the adoption of technology does not always work!*

## Greg Murphy becomes honorary member

At the last AGM Greg Murphy received an honorary membership to AustStab. Greg was Vice-President and President of the association for four years and provided valuable guidance to the association during his term.

Greg is now Executive General Manager Western Region of Works Infrastructure and still maintains a passion for road recycling using stabilisation.

## Workshops for 2007

AustStab will be running workshops on road stabilisation in Canberra, Victoria and NSW this year and the dates and venues will be on the website at [www.auststab.com.au](http://www.auststab.com.au) for all workshop details.

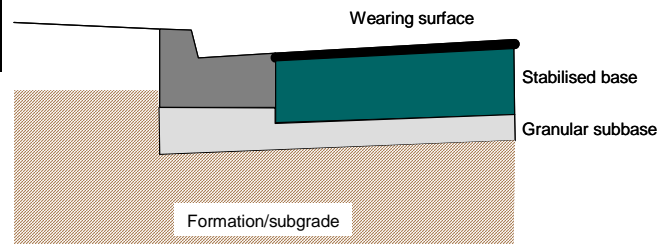
## ACE 2007

ACE is the leading earthmoving exhibition in Victoria and occurs every two years. AustStab supports this exhibition and its members regularly exhibit at the show. The next show is scheduled for 22 to 24 February at Sandown Park (east of Melbourne). For more information about the show or to register, refer to [www.ace.com.au](http://www.ace.com.au)

## New interim pavement design guide for a cement stabilised base layer for light traffic

It is now widely recognised that the thickness of a cemented base layer for low traffic levels leads to a conservative solution when using the mechanistic design procedure to both the current and previous Austroads design guides. AustStab therefore conducted a survey of pavement design practices in NSW with local government engineers and found that very few use CIRCLY to establish the thickness of a cemented base layer for local roads.

Combining various design practices the association has come up with an interim empirical design method or catalogue for local government engineers. The design catalogue provides the stabilised layer thickness for different subgrade strengths and traffic levels. A simple mix design method must be used with the design chart to ensure sufficient stiffness is achieved in the base layer. Diagrams to explain situations where there may be insufficient pavement material depth will assist designers with little or no insitu stabilisation experience.



*Both base and subbase materials are typically used to stabilise existing local roads.*

“This catalogue approach is commonly used in Europe and is now being practiced in the USA. So it makes sense to use the catalogue approach for Australian local roads” said Warren Smith, AustStab President.

Members have been sent a copy of the document and a PDF version is available at: [www.auststab.com.au/pdf/nat11B.pdf](http://www.auststab.com.au/pdf/nat11B.pdf)

## 22<sup>nd</sup> ARRB Conference

The ARRB Conference was recently held in Canberra and whilst attendance was much lower than previous years the spirited discussion spilt into the coffee and lunch breaks. There were 6 papers on road stabilisation and the title and authors are listed below:

- Conceptual approaches for considering shrinkage cracking in the cement stabilised pavement mix design by J Kodikara
- A new approach to determining working time for road stabilisation for all binder types by G Vorobieff
- The importance of stabilisation techniques for pavement construction by T Wilmot
- A new approach to laboratory testing of stabilised materials by G Vorobieff
- Capillary rise in road pavement material stabilised using hydrophobic additives by M Wightwick

Several of these papers can be downloaded from the AustStab website.

AustStab members held a workshop titled *The design of stabilised pavements* and 28 practitioners attended the workshop. The goal of the workshop was to

provide a forum for participants to discuss the research needs for the structural design of stabilised layers of granular materials that have been modified using any binder. The workshop is to provide an Australian research pathway for Austroads members and industry to consider for future funding and partnerships with research organisations. A copy of the proceedings will be soon made available to members.

## Use of recycled water

It has been common practice for many years for AustStab members in NSW to use treated sewerage water in road stabilisation for mixing, and curing after trimming and before sealing. Similar to the use of town water for stabilisation, the main goals are:

- No solids should be in the mixing water to cause blockages in the spray nozzles
- No excessive quantity of chlorides and sulphates, unless the water had been shown to be satisfactory in the laboratory for the mix design
- Minimum to no smell
- Little to no pathogens that may cause workers to become ill

Last year VicRoads introduced a new document titled *Using recycled water for road activities* and a copy may be downloaded from the VicRoads website. The RTA's Environment Branch has also produced a guideline for the use of treated water for:

- Earthworks construction
- Dust suppression
- Watering vegetation
- High pressure water blasting for pavement retexturing

This document (Environmental Direction No.19) can be downloaded from the RTA website or members can request a copy from AustStab.

If you wish to use treated sewerage effluent in your next project, please contact an AustStab member to seek their advice.

## Nanotechnology for road stabilisation may be just a few years away

Nanotechnology is a growing area for concrete and asphalt materials in Europe, Canada and USA. It is the measurement and manipulation of matter at the scale of atoms and molecules. For instance, the

most widely used nanoscale binder in concrete is silica fume.

Applications of material nanotechnology in road stabilisation are:

- Delivery of the binder before mixing with further minimisation of binder dust leaving the road site under windy conditions and allowing contractors to have less downtime.
- Improved strength gains through the controlled release of the hydration process
- Use of less water for successful hydration and compaction

AustStab believes that this will be the growth research area in the next decade. For more information on this topic refer to [www.nano.gov](http://www.nano.gov)

## Recycling week

In November last year we again celebrated *recycling week* and Australians are to be commended on their recycling efforts over the last decades. Whilst incentives in some areas have assisted with the growth in recycling, the road industry sector has yet to see the same incentives to recycle existing pavement materials.

Although, insitu stabilisation of existing roads has been a common practice for many councils for up to 50 years, its key achievements of recycling up to 98% of the road goes unnoticed.

The benefit of insitu stabilisation goes unnoticed by many engineers and councillors and these benefits are:

- Low construction costs
- Quick construction method
- Ability to use marginal materials
- Capable of repairing the subgrade to improve the overall pavement structure
- The stabilised pavement material can be recycled again and again
- No potholing after rain when the material is bound
- Helps conserve dwindling quarry product reserves
- Reduces noise, energy usage, emissions, truck traffic and lowers landfill demand



Insitu stabilisation is a rapid rehabilitation technique and in local government applications about 500 m of roadway can be rehabilitated when the kids leave for school and be almost finished when they return from school!

If you haven't considered road recycling recently, please think about sustainability and the benefits of fast, low cost insitu stabilisation for upgrading our roads.

## Soil Testing Handbook published

Australian Standards recently published a new handbook on soil testing which is available on the SAI Global website. The 122-page handbook covers the following topics:

- Definitions and Equipment
- Sampling and Preparation
- Moisture Content
- Classification Tests
- Chemical Tests
- Compaction and Density Tests
- Strength and Consolidation Tests
- Soil Reactivity Tests

AustStab supported the development of the handbook and is a good reference document for graduate students who have received little laboratory experience in their undergraduate course.

## IPWEA CEO Chris Champion has been elected President of IFME

IPWEA CEO, Chris Champion, has been elected President of the International Federation of Municipal Engineering (IFME) for the next triennial period 2006-2009. IFME is a Federation of member organisations with similar objectives to the IPWEA. It comprises membership of countries that include the United Kingdom, Canada, The Netherlands, Sweden, Finland, Norway, Belgium, Italy, San Marino, Israel, South Africa and Australia.

A key objective of the Federation is to foster technical and cultural exchange between municipal and public works engineers worldwide. International exchange of information, innovations, skills and experience is even more important in today's global world than when the Federation was first formed over 40 years ago.

A major activity of the Federation is the triennial World Congress on Municipal Engineering. The next World Congress will be held in conjunction with IPWEA's own National Conference to be held in Melbourne in 2009.

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## AustStab Member Details

The following companies are contracting or binder and equipment supplier members of AustStab. Contact details for these organisations by region, can be obtained by contacting Auststabs or visiting their website.

### Contractors

#### Andrew Walter Constructions

Tel 03 6249 8799  
[www.awconstructions.com.au](http://www.awconstructions.com.au)

### Highway Stabilisers

Tel 03 9775 2202

### Stabil-Lime Distributors

Tel 03 8739 3888  
[www.stabil-lime.com.au](http://www.stabil-lime.com.au)

### Stabilised Pavements of Australia

Tel 02 4340 0111  
Tel 07 3807 7600  
Tel 07 4729 1311  
[www.stabilisedpavements.com](http://www.stabilisedpavements.com)

### Works Infrastructure

Tel 02 9672 7199  
Tel 03 5940 1688  
Tel 08 9475 6041  
[www.works.com.au](http://www.works.com.au)

### Binder Suppliers

Adelaide Brighton Cement  
Blue Circle Southern Cement  
Cement Australia  
Hyrock  
Independent Cement & Lime  
Polymix Industries  
Shell Bitumen  
Sunstate Cement  
Unimin Australia

### Equipment Supplier

Conplant  
Wirtgen Australia

## State Road Authority members

Department of Infrastructure, Energy and Resources (TAS)  
Department of Infrastructure Planning and Environment (NT)  
Department of Main Roads (QLD)  
Roads & Traffic Authority (NSW)  
Dept. for Transport, Energy & Infrastructure (SA)  
VicRoads



AustStab

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Those wishing to obtain further information about membership to AustStab, should contact:  
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