

AustStab News

Industry View

Ten years seems to be short in comparison to the age of road stabilisation, but the Association turned ten years old in August. I would like to thank all those members who have worked with other members in developing the association as it stands today.

The Association has also just developed a new application process for contracting members. Recognising the need to have competent operators run stabilisation projects, the Association has just finalised a new procedure for new members to apply as contracting members. I believe this new approach will continue to hold our current members in high standing.

Finally, I welcome our members coming to the AGM on 11th October in Sydney. More details are in this newsletter.

Thomas Curnow
President

AustStab turns 10

Ten years ago there were no documented mix design procedures, poor documentation on current best practice construction procedures and no national model specifications for road stabilisation. Over the last ten years the association and its members have worked hard in a cooperative manner with Austroads members to fill the gaps in knowledge and to develop more information to practitioners.

In the 1990s the association also broke with tradition and brought together lime, cement and bitumen suppliers into the same forum for the good of the industry.

Our web site was one of the first specialist road websites in Australia and set the bench mark for others to follow. Since 1996 it has provided free 24 hour access to all practitioners.

www.auststab.com.au

AustStab has also established a large specialist library on road stabilisation research and practice consisting of paper based and electronic documents for members to loan. The documents are both locally and internationally sourced.

Finally, insitu stabilisation of existing pavement materials remains one of the oldest recycling techniques in Australia. Thomas Curnow, President of AustStab notes, "At times we are forgetful at how the process has been great on the environment and now roads constructed in the 1960s are being recycled again. There are no other road construction techniques that can boast such success."

Crossblending construction tips

A new AustStab construction tip has been released on crossblending to address common questions with local government engineers on the best to resolve the rehabilitation of an old road with existing patching scattered over the roadway.

This new tip covers the following topics:

- Goals of crossblending
- Safety
- Site investigation
- Equipment
- Excavation and sidecasting tips
- Blending phase
- Subgrade repairs

To obtain a copy of the tip, please download the document at
www.auststab.com.au/construction/ACTips8.pdf

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AustStab 2005 AGM

The annual general meeting for the association is scheduled for Tuesday 11th October in Sydney. All members are welcome to attend and more details can be found on our web site at www.auststab.com.au/agm2005invite.pdf

Network Geotechnics joins AustStab

Network Geotechnics Pty Ltd was established in May 1995 with offices in Wollongong and Gosford and has grown into a diversified geotechnical consulting and testing group with a strong client base in the private and public sectors. Growth has been generated from repeat business appreciative of informed geotechnical advice, practical and cost effective geotechnical solutions and innovative advice on civil materials selection. The company now has:

- Offices in Tuggerah and Wollongong
- Project offices in the Sydney region
- About 45 professional, technical and support staff

The company has four laboratories covered by a single NATA corporate registration for a wide range of soils, aggregate and concrete tests. The company is an approved consultant &/or subcontractor for Landcom, RTA, Public Works, Abigroup, Leighton Contractors and Boulderstone Hornibrook. Current residential, industrial and commercial projects exceed 7,000 lots and current or completed highway/freeway/motorway projects exceed 110km.

Cooee Ecotrax presented on ABC New Inventors

It's not often that a binder is presented on the new inventors, but on 31st August Cooee Ecotrax product had hit the national spot lights.

Ecotrax is a natural binder, made of food-based products, which allows bitumen to easily mix with cold water.

The binder is being currently trialled on unsealed and sealed roads. It is mixed using conventional stabilising mixing equipment. For more information refer to www.cooeeproducts.com.au



Blue Circle introduces H₂Off

Recently Blue Circle Southern Cement released a new chemical binder called H₂Off onto the Australia market. This new dry powdered polymer is produced at Waurm Ponds in Victoria and is the culmination of several years of product development.

Rohan McDowall notes that H₂Off is a binder aimed at granular pavement materials that need better strength properties in situations where the road is likely to become wet due to high water tables or general climatic conditions.

For more information, contact [Rohan McDowall](#) on (03) 5240 6066.

Rural highways and shoulders

A recent inspection of rural highways after heavy rainfall showed the weakness of unbound sealed shoulders to the network. The photo shows rutting in the sealed shoulder after a B-double had either taken a short cut on the curve or had to move over for a wide load coming the other way.



The shoulder material has become weak after rain & yet the stabilised carriageway is still functioning without any distress.

In this instance the trafficable lanes (2 by 3.5 m wide) had been stabilised and the shoulder remained as an unbound material. To reduce costs the engineer would have allowed three mixing runs of a nominally 2.4 m wide reclaimer leaving little width of stabilised material just outside the outer white line.

Had the engineer permitted four mixing runs, about 1.2 m could have been stabilised beyond the outside lane leading to a stronger and durable shoulder. At the moment a works order will be required to carry out the repair of the shoulder and this is likely to require a mixing run with a modified reclaimer rotor.

Asset managers should take into consideration the long term efforts of reducing mixing runs in rural highways, otherwise, the ongoing maintenance to these roads will take away funds for more urgent maintenance projects in the region.

Foamed bitumen material survives July floods on Gold Coast

Foamed bitumen was used as the binder for the recent upgrading of Jacobs-Well Road at Stapylton (QLD). The stabilisation was carried out by Stabilised Pavements of Australia and consisted of a 300 mm layer of stabilised material consisting of 3.5% bitumen and 2% of hydrated lime (see picture below). An initial 7 mm stone primer sealed was used with a full seal being planned in 2006.

Three weeks after completion the road was flooded to a depth of 600 mm with the road closed to all traffic for 2 days. After the water subsided the foamed bitumen and primer seal showed no distress. It has been common in the past for foamed bitumen materials subject to flooding, but not at a very early age. Further ongoing inspections will be carried out to confirm that foamed bitumen materials have the ability to be inundated and perform without much distress.



This foamed bitumen stabilised road was inundated for several days after the July floods..

Subgrade stabilisation of subdivision a great success

Prospect lies some 30 km west of Sydney and is one of the rapidly developing areas in Sydney close to the construction of the M7 motorway. Pockets of land that are being developed have been opened up to housing and industrial estates with some of this land in saline clay subgrade, presenting a challenge for engineers.

Roads for Lakelands Estate Stage 1, a residential subdivision at Prospect is being built on weak, typically moderately saline subgrade. Richard King from Network Geotechnics had two solutions with this site, with the first to remove the subgrade material to spoil and replace with imported material. The next solution was to stabilise the material with lime to improve the subgrade strength and thus reduce pavement thickness and excavation into the

saline subgrade. This latter option saved costs to Stockland's, the developer.

King used his experience to establish the minimum lime content of 3 % and this translated to 14 kg/m² (for 350 mm depth) or 16 kg/m² (for 400 mm depth) of quicklime spread and slaked on site. With traffic levels on new estates very high during the construction period, the final pavement configuration was 350 mm or 400 mm of lime stabilised subgrade and 275 to 350 mm thick pavements including 30 to 50 mm of asphalt.



The stabiliser mixing quicklime into the thick clay subgrade followed by the addition of water to optimise the subgrade.

Subgrade stabilisation work was carried out by Stabilised Pavements of Australia (SPA) using various stabilisation machines. Andrew Middleton from SPA noted that one of the challenges for this project was working with 'thick' clay to depths of 400 mm in some sections. The machines had to crawl during this operation to thoroughly mix the lime and soil. However, at the end of each day, construction traffic was permitted onto the stabilised subgrade.

Some of the work was subject to heavy rain after stabilisation and unlike the alternative of subgrade replacement, the bad weather did not create delays to construction nor extra cost to the developer.

Holroyd City Council has tight pavement deflection criteria for roads constructed in new estates with the maximum deflection typically 1 to 1.3 mm and curvature typically < 0.2 mm. The deflection criteria was generally satisfied at subbase level, except where trenches were excavated after stabilisation. In contrast, on an adjacent site under development where no lime stabilisation had occurred, substantial sections of road could not meet Council's deflection criteria.

King noted that Network is using this approach on other sites and anticipate similar success. The benefits of this approach are:

- Avoid removing material from site
- Approx. 30% reduction in the quantity of imported pavement material

- Reduced truck movements due to above two points
- Quick construction process
- Access to site the same day
- Bad weather unlikely to impact on road access after construction
- Lime reduces acid level and locks in strength to soil

competency standards will be finalised in early 2006.

Next year will also coincide with the development of units by AustStab for supervisors interested in road stabilisation works. These units will meet the new outcomes being sought by RIISC and will allow supervisors to take these units in conjunction with other units to obtain a Diploma or Advanced Diploma.



Training for supervisors

The Association has been supporting the Resources and Infrastructure Industry Skills Council (RIISC) with the development of better training for supervisors for road construction, and more data on the competency based training is on the RIISC web site at

<http://riisc.elcom.com.au/Development-Project%20update/default.aspx>

Whilst work had been completed for civil construction plant operators years ago, the work at AQF 4 to 6 is well underway and it is hoped the

Student awards

The awards program for undergraduate and postgraduate students was postponed last year due to the failure of reaching a minimum of three entrants. The competition is still open to students wishing to receive a first prize of \$1,500 for the best thesis.

If you are seeking a topic for next year on road stabilisation, please go and visit our web site at www.auststab.com.au/students/ for suggested topics. These topics have been developed by several practitioners to allow students to explore new areas of uncertainty in this field.

If you have any questions, please contact the association.

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 Auststab or visiting their website.

Contractors

Highway Stabilisers

Tel 03 9775 2202
Fax 03 9775 2656

Works Infrastructure

Tel 08 9475 6041
Fax 08 9479 5788

Stabil-Lime Distributors

Tel 03 9737 0777
Fax 03 9737 0333

Stabilised Pavements of Australia

Tel 02 4340 0111
Fax 02 4340 1299

Binder Suppliers

Adelaide Brighton Cement
Blue Circle Southern Cement
Cooee Products
Huntsman Chemicals
Hyrock
Independent Cement & Lime
Pacific Lime
Polymix Industries
Shell Bitumen
Sunstate Cement
Unimin Australia

Equipment Supplier

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)
Transport SA
VicRoads

The AustStab logo consists of the word 'Aust' in a serif font and 'Stab' in a bold, sans-serif font, both in white, set against a black rectangular background.

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

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