

AustStab News

Industry View

Victoria's approach to introducing the Highway Rule is on track with the Upper House just about to pass the legislation. The legalisation provides the framework for VicRoads and Local Government to set up a road management plan. Hopefully this will result in better planning for road rehabilitation to maintain safe roads.

The recent addition of Huntsman Chemicals as a member of the Association will enhance the move forward with more technical information on chemical binders. The Association has now formed a chemical binders working group to make improvements to laboratory protocols, material design and specifications. One of their major projects is to develop model specifications for the application of powder and liquid chemical binder specifications for local roads.

Our Association supports academics and students with road stabilisation research projects. At the end of 2004 the student project competitions will close again and the Association will provide \$1,500 for the best student project on road stabilisation. For more information refer to www.auststab.com.au/students/ If you know of any students that may be interested in the competition, please encourage them to apply.

Warren Smith
President

RTA's latest oral history project

The Roads & Traffic Authority is just about to release an oral history CD titled *Pavement Recycling and Stabilisation*. Oral history has been described as a picture of the past in people's own words. It is told by the people who are often overlooked in official documented history.

Stabilisation is the earliest form of recycling of road materials and still represents the major proportion in terms of tonnes of road recycling in Australia.

<http://www.auststab.com.au>

[ISSN 1325-8281]

The developments that shape the process today are due to the diligence and courage of Department of Main Roads (now RTA) and a few local government engineers to explore beyond the boundaries of the process and make continuous improvements to achieve a world class process in Australia.

Some of the engineers that appear on the 2 CD set are Phil Walter, David Dash, Val Brizga, Bruce Fenton, Ken Porter Mal Bilaniwskyj, O'Mera, Harris, Hocking, Hanson, Tom Wilmot, Warren Smith, Geoff Youdale, Paul Ritchie, Brian Shackel and Bob Andrews.

This is the 9th project in the program by the RTA and a list of the previous projects can be found at www.rta.nsw.gov.au/environment/heritage/rtaoralhistoryprogram/index.html

Copies of the CD will be available from the RTA library.

Lime for acid sulphate soils

The Association's lime supplier members are currently producing a lime supply specification for the treatment of acid sulphate soils. Our members have found that the supply and application of lime treatment for acid sulphate soils is generally poor and there is no monitoring program to ensure that the soils have been effectively treated.

Warren Smith of Stabilised Pavements of Australia notes that a robust and quality supply and construction specification is long overdue and the state-based EPAs and Department of Land need to be more proactive in making sure that the work is done properly.

For more information about the specification, please contact the Association.

In this issue:	Page
Hyrock becomes a member	2
Huntsman Chemical joins	2
Stabilisation training starts soon	3
2 nd Symposium set for 2005	3
Lime stabilisation of subgrades	3
Austrroads publishes report on salinity	4

Hyrock becomes a new member



In the early 1990s Hyrock constructed a 25 m³ Ribbon Merge Cell (RMC) batch blender, which is one of the largest in Australia, to supply stabilising binders to government authorities and contractors.

The success of the RMC Batch blender at Hyrock's Charbon Lime Works led to the installation of two similar blenders at Hyrock's newly established Port Kembla Cement Terminal.

The RMC Batch Blenders have 'design-a-blend' capability, producing blends of lime, fly ash, ground slag and cement in any ratio desired by the road pavement designer. Advanced computer control ensures blends are produced to within 1% accuracy of customer requirements.

Hyrock has developed a proprietary binder based on a by-product produced by the coal fired lime kiln. The product is known as DiCal and consists of very finely divided quicklime, fly ash and limestone blended within the rotary kiln at temperatures up to 1000°C. DiCal is inexpensive and has unique binding properties not to be found in other cementitious binders.

The location of the Charbon Works and Port Kembla Terminal with their blending, storage and loading facilities ensures the efficient production and dispatch of lime, fly ash and cementitious binders throughout NSW.

For more information about Hyrock, contact Brad Brown on (02) 4276-4276 or email: brad.brown@hyrock.com.au or refer to www.hyrock.com.au

Huntsman Chemical joins

Since its creation in 1970 Huntsman has grown to become the world's largest privately held chemical company. Huntsman-held companies today have more than 15,000 employees, operations in 30 countries and annual revenues of approximately US \$9 billion. Always at the edge of new products and technologies, Huntsman manufacture basic products for the world's most significant and essential industries: chemicals, plastics, automotive, construction, high-tech and health. Huntsman Australia comprises a group of

companies supplying petrochemicals, plastics, polyurethane and surfactants, produced through their local operations.

Huntsman Chemical Company Australia introduced Soilbond, a stabilising binder, in Australia in 2000. After 4 years of field and laboratory research and development, the binder is being trialled in local and main roads in various regions of Australia. Soilbond is a water-based organic emulsion used as a chemical binder in road stabilisation and dust control.

For more information about Soilbond, please contact Jacqueline Wong-Fat, National Sales Manager, Huntsman Chemical Company Australia on (03) 9316 3491 or refer to www.huntsman.com and search for Soilbond.

HUNTSMAN

Holes in roads

Before road stabilisation became a popular rehabilitation treatment, both Council and SRA maintenance engineers would count the number of potholes in their district in the hundreds. Paul Ritchie¹ noted in a seminar last year in Sydney that after he introduced road stabilisation at Holroyd City Council (suburbs west of Sydney), within two years the number of potholes reported reduced from 700 to 250 per annum and the road maintenance budget was reduced to \$300,000 pa. This reduction in the budget and the fact that insitu stabilisation recycles the existing road materials, was an added bonus for the Council and ratepayers in the district.

Whilst a lot of pot holes are unlikely to occur when districts are in drought conditions, the next decent rain onto roads will open unbound pavements to the potential for rutting and pot holes.



Pot holes require regular maintenance and cause traffic disruption.

¹ P Ritchie has spent 40 years as a local government engineer at Bankstown, Blacktown and Holroyd City Councils (Western Sydney Councils).

Stabilisation training starts soon

The Association will commence a competency based training program for road contract supervisors in August this year. The two-day course will be based around front-line managers at AQF4, and it will be the first course of its type offered to road authority staff and consultants.

For more information about the course, please contact the Association by email at inquiry@auststab.com.au

2nd Symposium set for 2005

Cimbeton and the French Lime Association have announced the 2nd *International Symposium on Treatment and Recycling of Materials for Transport Infrastructure* to be held in Paris, France in October 2005. The main purpose of this second Symposium will be to present advances made on various aspects, including: technical, technological, economic and environmental. This Symposium will be receptive to recycling techniques for materials originating from construction and civil engineering activities.

Australian engineers wishing to send a synopsis for the Symposium should contact George Vorobieff at AustStab.

Lime stabilisation of subgrades

One of the main mechanisms for the failure of granular pavements is vertical deformation of a weak subgrade leading to shoving or rutting at the surface of the pavement. Changes to public liability legislation in most States will require road authorities to act quickly to remove unsafe road surfaces that may lead to accidents.

The temporary treatment of unsafe roads by milling undulating surfaces and resurfacing rutted pavements is not cost effective compared to engineered solutions to fix up the weak subgrade material. For instance lime stabilisation of black soil subgrades constructed in 1997, using modern laboratory and construction techniques, on the Cunningham Highway in southern Queensland are showing excellent performance.

This project was reported in 1998 by Evans, Smith & Vorobieff and the paper *Rethink of the design philosophy of lime stabilisation* detailed that 8% of quicklime was used to stabilise a subgrade material with a PI of 60. Prior to stabilisation the rural highway was in poor condition due to the expansive nature of the subgrade.



This section of the Cunningham Highway has the black soil subgrade stabilised with lime.

The stabilised subgrade layer was assigned a design CBR of 20%. For more information refer to www.auststab.com.au/19arrb/19arrbEvans.pdf

Another problem for road asset managers is the housing boom and the renovation market where some houses are requiring substantial additions that result in many heavily loaded vehicles wrecking local roads traditionally only subjected to light traffic. These heavy vehicles overload the granular base material or deform the weak subgrade and cause permanent damage to roads. Simply milling and resurfacing the road is likely to result in further shoving and rutting.



Renovators delight but Council nightmare

Fixing a subgrade by insitu stabilisation is rapid, and successful half road closure and repairs can be achieved by experienced contractors.

An interim subgrade pavement design model is now available and for more information refer to the technical paper titled *A New Approach to Pavement Design Using Lime Stabilised Subgrades*. Download the paper from www.auststab.com.au/21arrb/21ARRB01.pdf

Western Geotechnics

Western Geotechnics is a NATA accredited materials engineering laboratory specialising in all forms of materials testing, from the base laboratory in Welshpool, to regional laboratories in Kalgoorlie, Karratha and Port Hedland, and from numerous temporary field laboratories.

Bruce Hawley, General Manager, was previously manager of BGC Contracting and a member of the Association as a contracting member. Its great to see old colleagues move from one side of the industry to the other.

For more information about Western Geotechnics refer to www.westerngeo.com.au/

Austrroads publishes report on salinity

Austrroads recently published a report titled *Salinity and rising water tables – Risks for road assets* (Report No. AP-R246) which summarised the outcomes an Austrroads research project.

The purpose of the project was to identify the potential impact of dryland salinity on construction and maintenance of the road asset. These impacts may require changes to the way road design, construction and maintenance is carried out if an acceptable service life is to be achieved, which in turn may lead to cost increases.

This report is structured as follows:

Part A provides some insight into how high water-tables and salinity are presently affecting road assets in Australia.

Part B provides an overview of recent studies of 'damage cost functions' that can be used to estimate the economic costs of salinity and rising water-tables on road infrastructure.

Part C provides a summary of the main salinity management options available to land, water and infrastructure managers in salt-affected catchments.

Part D outlines a program for future research.

A copy of the report may be downloaded from the Austrroads web site or quickly downloaded at www.auststab.com.au/salinity/570_AP-R246.pdf

AustStab Member Details

The following lists of companies are contracting, binder and equipment supplier members of AustStab. Details of contacts in the organisation by region may be obtained by contacting the Association's office or visit the AustStab website.

Contractors

Highway Stabilisers

Tel 03 9775 2202
Fax 03 9775 2656

Pavement Salvage

Tel 02 9672 7199
Fax 02 9672 7211

Pavement Technology

Tel 03 9706 6100
Fax 03 9706 6911

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
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 Main Roads (QLD)
Department of Transport &
Works (NT)
Roads & Traffic Authority (NSW)
Transport SA
VicRoads



Those wishing to obtain further information about membership to AustStab, should contact George Vorobieff,
PO Box 797 Artarmon, NSW 1570
Phone (02) 9411 8857
Fax (02) 9411 8897
Email: inquiry@auststab.com.au
