

CEO'S REPORT: AUSTSTAB PUTS THE SPOTLIGHT ON STANDARDS FOR NEW PRODUCTS

BY GREG WHITE

AustStab is often contacted by chemical product distributors who have a new product which they maintain is suitable for use as a binder in road stabilisation. The problem is that, too often, there is no supportive evidence of the product's properties, its effect on different soil types and the design procedure.

All state road authorities and most councils have standard specifications for the traditional binders of cement, lime and bitumen. There are standard design methods, using results from Australian Standard material test methods. The pavement designer can be confident of the engineering properties of a pavement using this design information.

The problem many distributors face is that there is a lack of understanding of Australian Standard material test methods. The proposed product is usually from overseas with little or no test information. What information is available is usually from an overseas laboratory and the test method is not as per Australian Standards.

There is also confusion whether the product is a stabilising binder or a dust suppressant. The majority of suppressants have little more benefit to improving dust generation properties than the use of straight water. Often we hear it can be bladed in with a grader, but again, the results are negligible improvement to the pavement.

In assessing a new product the first thing that must be established is which pavement properties the product is going to improve. Usually you would need evidence in a change in Californian bearing ratio (CBR), plasticity, strength and/or capillary rise characteristics.

The next challenge is which type of pavement materials does it improve? Most products will not perform in a similar manner on different materials. Usually the pavement material's clay content and the grading will change the performance drastically of the new product.

There are many classes of additive that have been used with varying success, including salts, polymers, ionic compounds or organic additives.

Recent experience has shown that some of these product types have been used successfully in unsealed roads to improve the compaction or assist in cement stabilisation.

One of the most critical and basic requirements is to ascertain if the type of treated pavement is bound or unbound. This is critical as the design method of each type is completely different. The design life and eventual failure method for each pavement type is well understood. The full understanding of the resultant pavement properties is usually not known by the distributor, which results in a negative response from pavement designers.

The exception to this rule is polymers (particularly dry powdered polymers), which have been used successfully by many road authorities over many years. Their main advantage is well known in waterproofing pavements. It maintains much of its dry strength in wet conditions, so increasing the life of the pavement. The design method is as

for a granular pavement with no increase of Californian Bearing Ratio (CBR) or strength.

AustStab, in conjunction with many road authorities, is offering a service to the chemical product distributors. The service is to advise them of the state road authority's requirements so the new product can be assessed. This would normally require a suite of tests to be carried out by a NATA registered laboratory to prove the products claims. The assessment by a pavement engineer might also be required to ascertain a suitable design procedure. Each road authority could then make an informed decision on whether they wished to take the assessment further using field trials.

More information on AustStab's service can be found by contacting greg.white@auststab.com.au.

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PRESIDENT'S MESSAGE

BY SCOTT YOUNG

In this issue, we have included an article on sustainable associations which gives an outline of the role of associations in business. This article triggered my memory of AustStab's history and the involvement of our members.

AustStab was originally setup in 1995 by a group of stabilisation contractors who saw a real need for wider representation in the industry. The initial objectives were, and remain, to:

- Set national standards of performance;
- Promote pavement recycling and stabilisation;
- Educate and train the road industry on stabilisation; and
- Assist and coordinate research.

During our recent annual conference in Melbourne, the council agreed on a five-year business plan which aligns strongly with these four objectives. Some of the

key initiatives include greater focus and output on external training; development of a structured research program; release more technical documents and gain strong acceptance of contractor accreditation.

I believe that our association focuses on the economic, social and environmental needs of our members. We are moving and adjusting to the maturity of the industry and responding accordingly.

Although my direct involvement with AustStab only spans a decade, I look back with pride at the achievements of the association.

We have in place a comprehensive range of publications which allow the industry easy access to specifications, technical and construction notes and, of course, our recently published Guide.

Our stabilisation courses, in collaboration with Centre for Pavement Engineering

Education (CPEE) are given in regional areas and cities across Australia. They have proven to be very popular and the feedback shows we are filling a real need. We are in the process of expanding our university guest lecture series as we introduce the topic to additional universities across Australia.

Our accreditation scheme, which is third party accredited by the ARRB Group, has been introduced in the eastern states. It is gratifying to find that the Queensland Department of Transport and Main Roads, and New South Wales Roads and Maritime Services have initialised talks with AustStab to work together to establish training courses for stabilisation crews, as well as managers and engineers. This work is aimed at minimising the risk of poor quality work being delivered and increasing the likelihood of asset owner expectations being met.

Our industry has grown rapidly as more road authorities see the advantages of recycling pavements using stabilisation. It is interesting that stabilisation has grown as the recognition of sustainable development achieves more and more traction in society. It is now ever more important that the standards of design, construction and maintenance of our road network are given a high priority by governments and the civil engineering industry.

It is disappointing when I see too often road authorities taking the cheap alternative of minor patching or resealing a failed pavement as a quick fix. The result is a repeat of the failure often in under a year. If we are to have a sustainable road network authorities are going to need to develop a rehabilitation program that will ensure we maintain our large road network to at least its present standard. It is gratifying to read the steps being taken by the IPWEA in Victoria which are outlined in the article on the recent forums on Effective Road Maintenance.

This year saw the association grow with the introduction of the inaugural Awards of Excellence, supported by Caterpillar Australia, at the annual conference that was hosted in Melbourne. The winners of the Awards are announced in this edition of the Roads magazine.

In closing and, as I have often been heard saying, "There are quarries and there are quarries. The best ones are those that we drive on every day, so why not recycle them?"

It is now ever more important that the standards of design, construction and maintenance of our road network are given a high priority by governments and the civil engineering industry.



AUSTSTAB INAUGURAL AWARDS CELEBRATE 37 YEARS OF WORK

AustStab celebrated distinction in the pavement stabilisation industry at its inaugural Awards of Excellence, sponsored by Caterpillar Australia, at the Sebel and Citigate in Albert Park, Melbourne on 21 August 2012.

The collective work of the six award winners for the inaugural AustStab Awards of Excellence have taken 37 years to complete, saved end-users over \$17.2 million in direct costs, saved over 215,000 tonnes of previously used pavement materials from waste disposal such as landfill, and saved over 165,000 tonnes of virgin quarry products from importation to pavement construction sites across Victoria, New South Wales and Queensland.

Awards for 2012 were bestowed upon:

CATEGORY 2: EXCELLENCE IN EDUCATION OR RESEARCH:

Richard Yeo The performance of cemented materials under heavy axle loading.

Richard completed his research over an eight-year period. His findings were recognised as significant developments for stabilisation with clear immediate application to the industry by developing new tests for strength, breaking strain, modulus and fatigue life for dynamic 4 point bending flexural beam test. These elastic characterisations were previously treated empirically by industry and road authorities.



Richard Yeo: with completed thesis

CATEGORY THREE: INNOVATION OR EXCELLENCE IN SUSTAINABILITY IN PAVEMENT STABILISATION:

Leighton Contractors: Upgrade of Tarrone Road North, Tarrone Victoria.

Short in duration, partially as a result of stabilisation, this Leighton Contracting project was part of the Macarthur Wind Farm project. Completed during a wet winter, 7.5km of pavement was reconstructed over a period of six weeks. It clearly demonstrated economic, social and environmental benefits in the nomination.



Leighton Contractors - Tarrone Road North Tarrone

CATEGORY FOUR: INNOVATION OR EXCELLENCE IN STABILISATION IN LOCAL GOVERNMENT:

Campbelltown City Council: Pavement Stabilisation in Campbelltown is providing Sustainable Outcomes in Road Network Management.

A 21-year commitment by Campbelltown City Council to stabilisation has resulted in 261 stabilisation projects, covering 605,000m². This has generated direct cost savings of over \$17 million, saved over 200,000 tonnes of material from disposal to landfill and saved the importation of 150,000 tonnes of material from scarce raw material sources. Other indirect cost savings were also sighted including reduced construction traffic, reduced damage to local roads from transportation operations, significant energy savings and drastically reduced construction delays due to lane closures.



Foamed Bitumen Stabilisation Cumberland Highway Campbelltown - One of Campbelltown City Council's 261 stabilisation jobs since 1991

HIGHLY COMMENDED CERTIFICATES WERE AWARDED TO:

A/Prof Arul Arulrajah, Dr J. Piratheepan, Dr Mahdi M. Disfani & Prof Jay Sanjayan: Stabilization of recycled waste materials for pavement, road and footpath applications.

Roadtek: Rehabilitation Warrego Highway between Dalby and Warra, South East Queensland



Lime Stabilisation - Warrego Highway

Effective use of Stabiliser

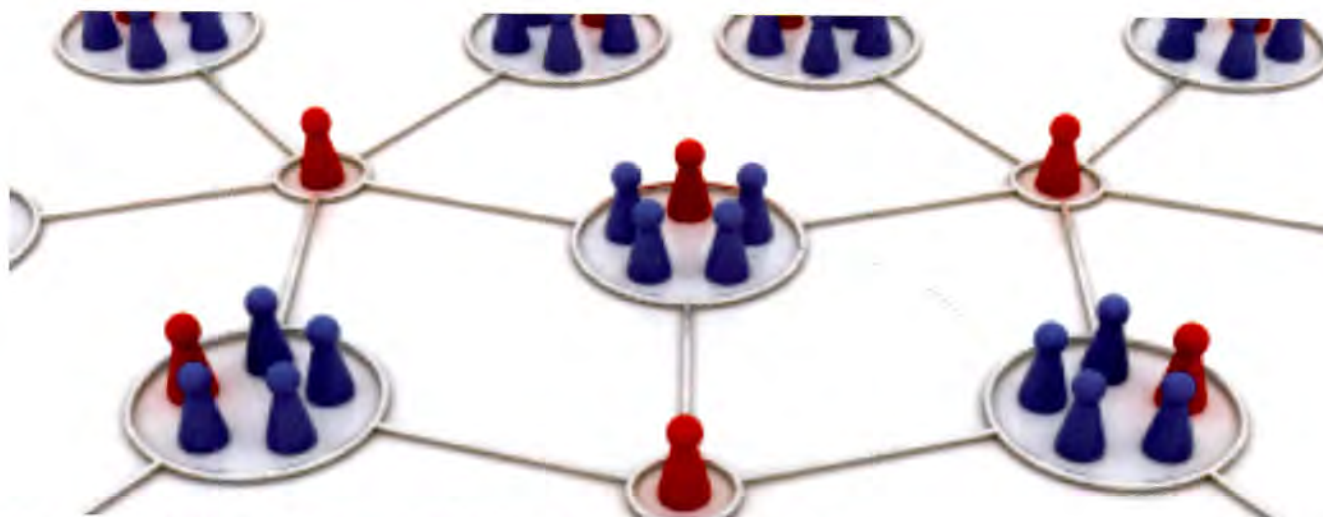
We value our customers, our people and our reputation.

Lime Stabilisation by RoadTek Warrego Highway between Dalby and Warra South Queensland

Frankston City Council: Rehabilitation McClelland Drive, Skye, Victoria



Frankston City Council: Emissions and Waste savings Highly commended AustStab Excellence Awards 2012



SUSTAINABLE ASSOCIATIONS HAVE LONGER TERM PROSPECTS

What makes a lasting association? Enduring associations should be sustainable. Sustainable associations consider the economic, social and environmental viability of the industry, and therefore its members.

When joining an association organisations must consider what they are hoping to gain. Are they seeking to gain economically, socially or influence their external environment? Perhaps the initial motivation is in one or more of these areas. Associations should monitor what drives organisations to join and stay involved with an association.

Once the decision to join the association has been made the best return to the member is achieved by getting involved. This means more than turning up at meetings or receiving the regular newsletters. To gain the greatest benefit from an association, members must volunteer to be involved in the activities of the association. What this looks like will vary with each association. It may involve joining working groups, attending industry or association meetings, leading training sessions or representing the association at industry events.

The purpose of the association may change over time. What members want from the association may change over time. An association for an embryonic industry will have significantly different strategic requirements to a mature industry body.

An embryonic industry may have buyers unfamiliar with the members' product. Here the association's purpose is perhaps to give the industry credibility through promotion and demonstration. For example; in the road stabilisation industry, a road agency may not be experienced with the process of stabilisation. The association's purpose would be to network with the road agency

to facilitate trials of the stabilisation process to gain the confidence of the road agency. If confidence were gained then the road agency may adopt the process. The market size may increase benefiting all members. Members would gain both social and economic benefits in this scenario.

A mature industry often experiences more stable demand and consumers may have more brand loyalty, and the organisations may focus more on unique products to differentiate themselves from the market. The association may focus on promoting the products offered by its members and influencing the operating environment by establishing new standards for the emerging product.

In a mature industry, members may look to receive more tangible economic rewards for their involvement in the association such as discounts on training or publications. The members may gain social benefit with peer recognition of industry awards.

Active members of associations demonstrate their core values to their industry peer group through their involvement. Commitment to the industry can be gauged by the effort and involvement in the association. Networking at conference or working group meetings may provide social benefit to the member. The networking may be with suppliers, customers, regulators or other associations in related industries. The networking may generate economic gain by increased business with another member organisation.

Industry associations in all stages of development will seek to influence their environment. They will seek to move the regulations and requirements of the external environment in a favourable direction. This may be with an intention of influencing the global, political and legal, demographic, socio-cultural, economic or technological forces at play in the market for the benefit of member organisations. A strong association will monitor these forces on behalf of members and forecast the influences that these may have on members.

Sustainable associations continue to monitor the external environment to ensure they maintain relevance to the industry. Longstanding associations continue to focus on the economic, social and environmental needs of their members. To stay relevant and viable associations must be prepared to move and adjust to the stages of industry development, and respond appropriately.



AUSTSTAB SUPPORTS IPWEA (VICTORIA) DISCUSSIONS ON EFFECTIVE ROAD MAINTENANCE

The Institute of Public Works Engineering Australia (IPWEA), Victoria Division, undertook three regional forums during May 2012, in Ballarat, Shepparton and Warragul. AustStab was the key sponsor of the forums which aimed at identifying opportunities for the public works industry to undertake more effective road maintenance on limited budgets.

Over 175 participants and over 30 organisations participated in the forums and discussed ideas, problems and possible efficiencies in road maintenance. The forums identified a number of key issues that should be addressed for more effective use of the road maintenance dollars.

The key challenge that IPWEA members face is managing an asset which is increasing in size, age and complexity on a stagnating or reducing road budget. This is consistent within Victoria and on a broader national scale.

Delegates workshopped the issue identifying six key issues that were common across all three forums: maintenance of roadside drainage, heavy vehicles, community expectations, appropriate level of funding for roads, availability of skilled maintenance staff and planning and consideration of built environment. Other issues that were identified were a scarcity of suitable affordable virgin quarry products and water ingress into pavements, particularly following flood events.

Delegates workshopped strategies to respond to the issues. These strategies varied in complexity and economic, social and environmental values.

The responses included focusing a greater emphasis on:

- roadside table drains, culverts and shoulder maintenance;
- developing strategies for dealing with higher mass vehicles on the local road networks beyond the arterial network;
- engaging and educating the community about levels of services for the road network;
- establishing robust asset management plans which can be used to discuss the growing renewal gap;
- increasing industry training; and



Delegates workshopping effective road maintenance on reducing budgets - Shepparton May 2012

- tighter regulation and supervision of new subdivisions before they are handed over to the community.

Involvement in the forums provided all delegates and presenters with a clear understanding of the key issues facing IPWEA members. These issues are not unique to Victoria.

AustStab presented information about regionally presented training opportunities such as a session to be hosted in October 2012 in Melbourne in conjunction with CPEE, on Insitu Pavement Stabilisation. Providing nationally recognized training courses in regional locations reduces travel costs for delegates while still providing them with access to suitable industry training - helping to manage assets on reducing budgets.

Graeme Freestone, Regional Director North East Victoria VicRoads, explored using alternate

models for delivery such as the North Eastern Maintenance Alliance, which have successfully been implemented in the region. Highlighted by Graeme, proper treatment selection is vital to managing the road network on a reducing budget. Each delegate with an interest in stabilisation later received the 2010 IPWEA NSW Conference paper reviewing pavement patching as a maintenance tool from AustStab.

AustStab completed a *Federally funded research project into Recycling unsealed roads to reduce dust & maintenance using insitu stabilisation* in 2010. The findings of the research project supported that stabilised pavements performed better when compared to gravel re-sheets, particularly in wet weather conditions. They also demonstrated, when considering whole-of-life costing, that significant savings were identified in maintaining stabilised pavements. These findings were presented to delegates at two of the three discussion forums.

Victoria is not in a unique position regarding state income revenue. The reducing revenue base, with declining GST revenue and reducing stamp duty revenue will not change significantly in the near future. All asset managers will need to continue to explore new ways of managing asset maintenance on reducing budgets. AustStab commend the Institute of Public Works Engineering Australia for undertaking these regional forums that were so well supported by their members.

	Stabilised Base	Granular overlay
Initial cost/km	\$17000	\$13000
Life before replacement	12 years	8 years
Resultant cost pa	\$1,400	\$1,600
Minor maintenance schedule	Once per year	2 – 3 times per year
Cost per maintenance/km	\$1,000	\$1,000
Cost per annum	\$1,000	\$2,500
Total Cost	\$2,400	\$4,100

Table: Research Outcomes - DOTARS Recycling unsealed roads to reduce dust & maintenance using insitu stabilisation AustStab, 2010

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