

<u>CETANewZ</u>

The official newsletter of the Civil Engineering Testing association of NZ

lssue 014, November 2011

From the Chair...

Spring is finally here (roll on summer) and what better way to start the earthworks season, than with a win in the Rugby World Cup. Go the All Blacks!

It's been a hard winter for most of us and like me I guess your all looking forward to getting stuck in over our traditional busy period. The volume of work may not quite be as high as we would like, but the demands on our industry continue to challenge us.

Our customers ask for more site laboratories, new tests methods, competent well-trained staff and technical innovation. Whilst our employers ask for more profit. How do we meet these challenges? Where do I get this knowledge, the required experience and skills? One possible answer is by having those with the knowledge and experience, share it among others in the industry that don't. CETANZ attempt to fill this gap with its biennial conference.

Our next conference date and venue have been decided and will take place on the 8th to the 10th of August 2012 at the new Viaduct Events Centre. The theme for our 3rd conference will be Taxes, Technology, Testing and Training.

With the economic financial crisis still being felt in many sectors and the recent launch of the new Civil Engineering Laboratory Technician qualifications, it seemed timely to focus the conference on business

management, training and use of technology in testing. All of which are key to creating sustainable testing businesses. Many of us come from technical, science and civil backgrounds and although technically strong, we could benefit from training in the areas of business, finance and people management. This conference aims to help fill some of the gaps for you. Visit the website for more information. www.cetanzconference.org.nz



On the subject of conferences, a small delegation of Kiwi civil laboratory people made their way across the ditch recently to the Australian Construction Materials Testing Conference held by the Association of Geotechnical Testing Authorities – Queensland. Nearly a quarter of the papers presented were from New Zealand. Our travel grant winner Stuart Moulding from CivilTrain presented a paper that talked about compaction

of soils and the use of the NDM. Graeme Duske of Coffey Information presented on the Testing of Permeability of Aggregates. Sarah Amoore from OPUS presented on the issues around managing knowledge transfer and succession planning. Stephen Wormald from Dyantest New Zealand talked about the LWD equipment and its possible uses, and I presented an update on CETANZ initiatives. Other New Zealand delegates included Dave Hotham from OPUS and Hayden Mason from Holcim.

We were well received, with many of us reconnecting with Australian Laboratory people who have visited our conference in the past. The conference itself was well subscribed with over 180 delegates. Sponsorship was at a maximum, all the major equipment suppliers present with colourful and education displays.

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"Our customers ask for more site laboratories, new tests methods, competent welltrained staff and technical innovation. Our employers ask for more profit. How do we meet these challenges? Where do I get this knowledge, the required experience and skills? "

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From the Chair Continued...

We learned that there are over 700 civil laboratories in Australia with over 60 million dollars worth of testing carried out in Queensland state per year alone. The mines (resource sector) are attracting technicians away from the civil sector, like us, their residential and commercial sectors are declining, as is the reinvestment in roading. The recent floods have resulted in 4.5 billion dollars flood damage and the QLD state government's books don't look good.

NATA addressed the delegates regarding the need for increased confidence, compliance and flexibility, while also mentioning the gradual phasing out of signatories in favour of laboratories assessing and quantifying their own levels of competence. AKA the "Supervision Policy". We also heard NATA had consulted with the industry and stakeholders which had lead to the change in Annex Laboratory Policy. The result being the removal of individual scopes and change in the frequency of assessments.

Another topic was how the Laboratory Registration System (QLD state Government) is working to build technical governance, sustainability, operational efficiency and partnership between industry and government.

Some of the other interesting papers covered:

Career Paths in Construction Materials Testing Sustainability Laboratory Equipment Environmental impact of CMT Laboratories of the Future Problematic Geotechnical Specifications Laboratory Information Management Systems The Humboldt Electrical Density Gauge Safety in Laboratories AGS file format for managing data

If you want more information on this conference feel free to contact me.

Back home CETANZ held its annual AGM in Auckland. The attendance of members was good with some healthy debate over the issues discussed. No major changes or issues were noted. We learned that we have over 30 technicians enrolled in the Level 4 & 5 qualifications with more to come before the end of the year. Steven Anderson created a "Linked In" group for CETANZ where members and non-members can follow discussions relating to CETANZ and testing. Contact Brigitte for a copy of the annual report or minutes if you would like to know more.

Before I leave you, a reminder to all CETANZ members to try and make it to your next regional activity. It's a great opportunity to catch up with like-minded people and what's going on in your region.

If I don't see you soon, have a good Christmas and some great holidays!

Cheers!

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CETANewZ

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Society Activities/Careers & Training Report

The Society Activities/Careers & Training group have held four meetings since the AGM in September 2010. Members of the group are Brigitte Sargent, Michael McGlynn, Jayden Ellis, Sarah Amoore and Jennie Dingley (Team Leader). The objectives for the group for the period from 2010 to 2012 are to add benefit to our members through:

- Travel Grant/Award to AGTA conference in March
- Promotion of qualification to labs and schools
- At least 4 regional activities nationwide per year

Careers & Training:

Level 4 Technician and Level 5 Senior Technician qualifications were opened for enrolment with InfraTrain in June 2011. The release of these qualifications reflected three years of hard work from the Careers & Training group and InfraTrain. Congratulations and thanks go to those committee members and members who assisted with the development of these qualifications. There are approximately 28 technicians enrolled so far and approximately 14 assessors available nationwide for these new qualifications.

Promotion of the qualifications is to be incorporated into regional activities as a topic for discussion wherever possible.

Regional Activities:

Regional activities are all but complete for 2011. The regions have been divided up into: Nelson/Wellington, Northland, Christchurch, Waikato/BoP and Auckland.

Many thanks to those members who have agreed to organise and host regional activities so far. Thanks also to those members who have attended the regional activities.

April 2011 – Waikato/BoP regional activity was held at Opus Hamilton with Stephen Wormald from Dynatest (UK) explaining the lightweight deflectometer.

September 2011 – Wellington regional activity was held at T&T Wellington with InfraTrain giving a run down on the new qualifications.

November 2011—Auckland regional activity was held at Stevenson Quarry. Jayden Ellis gave members a tour of the quarry and a BBQ was also provided.

Northland and Christchurch activities are being planned for the new year.

Conference 2012

The conference website has up and running so if you want to register now please do so at <u>www.cetanzconference.org.nz.</u> The conference planning is well underway and will be held at the Viaducts Events Centre in Auckland from the 8th to the 10th of August 2012. Check out the website for more details!

IANZ Audit Findings

The following issues/findings have been supplied by a number of IANZ endorsed laboratories and are supplied as a means for laboratories to improve management systems or technical practices. They are not to be used for any other means.

CORRECTIVE ACTIONS

With respect to programmes used by the laboratory for calculating test results, it was noted that evidence of programme validation was not readily available. **Action required** Perform validations of all programmes used by the laboratory. Update the existing register.

STRONG RECOMMENDATIONS

- It is strongly recommended that tests performed and documented in training records reflect specific test report numbers so that review of those test reports can provide validation of awarded competency levels.
- It is strongly recommended that more care is taken in preserving the good condition of measuring equipment.
- It is strongly recommended that a register of short form type contracts is developed and a system established to ensure contracts are reviewed annually.
- It is strongly recommended that estimation of uncertainty for the calibration of callipers and dial gauges is completed.
- It is strongly recommended that the CETANZ uncertainty calculator is used to record duplicate test data to be used to calculate the estimation of uncertainty for test methods, where appropriate.
- It is strongly recommended that the sedimentation cylinder internal diameters are checked using the volume of water in 50mm steps.
- The feedback system, used to record corrective actions, does not have a process to record implementation and monitoring corrective actions. It is strongly recommended that the process is reviewed to ensure that it provides for each of the actions listed in NZS ISO/IEC 17025 4.11.2 to 4.11.5 and the requisite records.
- It is strongly recommended that the MSL Technical Guide TG12 is referenced for criteria when evaluating the repeatability performance of balances.
- It is strongly recommended that customer survey activities are effectively carried out. It has been found that, to improve the response to customer surveys, direct phone calls are made to the customer, preferably by someone not directly connected to the laboratory. A standard list of questions can be used.
- It is Strongly Recommended that references to the 'year' of standards recorded on worksheets and reports, be revised and updated only once annually and that any changes be notified to IANZ. This would prevent any occurrence of reporting to incorrect standards that were not currently authorised on the organisations accredited scope.
- It is strongly recommended that the appropriate use of the IANZ logo, the list of accredited tests on the organisations scope and the 'options' for selecting accredited testing/sampling during reporting, should be reviewed and discussed among all staff to prevent any future reports being incorrectly authorised.
- Discussion took place in regard to accreditation for thermal conductivity measurements using the thermal needle probe procedure. The following are **strongly** recommended:
 - The laboratory needs to obtain the 2008 version of ASTM D5334
 - A check should be made using agar and water as well as glycerol as it is more closely related to real samples
 - The laboratory manager should review the use of thermal bonding for difficult samples such as the use of a guide tube or other bonding agents such as silicone grease
 - The Hukseflux software should be checked manually, at least for one data set, using the equations in the standard to provide confidence in its results and to confirm it complies with D5334.
- It is strongly recommended to have the go/no go gauge used for the liquid limit grooving tool calibrated with the apparatus next year. If only plastic tools are checked with it then recalibration every 10 years would be sufficient. However, if brass tools are checked it should be recalibrated every 5 years.

The laboratory is strongly recommended to have the new reference thermometer calibrated at 100 °C as well as 0 °C and 20 °C.

The competence and authorisations for laboratory staff for specific tests should be renewed each year. The laboratory is strongly recommended to consider this either at management review time via a review of work done and a blanket re-authorisation or otherwise. Or alternatively provide a space on the second page of the proficiency record for continuing authorisation.

RECOMMENDATIONS

- The local quality manual still contained reference to the previous manager; this needs to be updated to reflect current management.
- It is recommended that quality manual changes be identified by font colour change, track changes, italics or use of a margin bar to quickly and easily identify what text had been changed.
- Two reports were observed during the assessment that contained the IANZ logo referring to non IANZ endorsed tests. There reports did not in fact contain any non endorsed tests and the normal IANZ logo should have been used on these reports. It was recommended that report checking be discussed and reviewed to reduce any future errors in reporting.
- It is recommended that an amendments page be introduced at the front of the Local Operating Procedures Manual briefly outlining amendments made to the manual giving a description of the change, clause/section number(s) modified and date of amendment.
- The laboratory had reviewed a number of issues and implemented corrective actions to deal with them. There should be a process to follow up on corrective actions after a time to ensure that the actions had been effective. It is recommended that a procedure for monitoring the effectiveness of corrective actions is developed.
- It is recommended that evidence in support of competency decisions is held on technician files, particularly when technicians are approved to undertake unsupervised testing.
- It is recommended that when sampling cannot be positively shown to have been carried out in compliance with a specific standard, the sampling method is recorded appropriately with a statement such as "Unknown" or "As supplied" so that there can be no misapprehension that the sampling has been endorsed.
- It is recommended that, when sampling is not endorsed, the sampling method is not included in the report header. In such cases, the sampling method line should contain a statement such as 'As received'. 'unknown; or 'stated as....'

The following recommendations were made in relation to the Polished Stone Value test Register should be kept for tyres and sliders recording data such as initial use date, hardness test data and date of manufacture so that their ongoing compliance with the standard requirements can be checked.

- Trends of control stone tests should be monitored so that tyre wear can be gauged for replacement. The number of runs that tyres have had should also be recorded and correlated.
- Review the PSV interlab results to ascertain the relative performance of this laboratory.

The following recommendations have been made in relation to the Gyratory Compaction method.

- It is strongly recommended that the material for compaction is prepared in accordance with AS 2891.2.1-1995 Mixing, quartering and conditioning of asphalt in the laboratory.
- A pressure gauge should be installed in the air line to the Servopac machine so that the air pressure can be monitored to ensure a consistent force is applied.

The rate of gyration should be checked as part of the calibration procedure for the machine.

Worksheets and reports should be modified to include all of the reporting requirements of clause 7 of the standard.

The following recommendations have been made in relation to ASTM C136-06 – Sieve Analysis of Fine and Coarse Aggregates. Consideration should be given to using ASTM D5444 for testing the particle size distribution of asphalt aggregates Consideration should also be given to adopting the NZS4407 criteria for maximum loading of sieves for this tests.

For the consolidation test core sample, it was recommended that the correct orientation be attached to the sample during testing to prevent incorrect reporting of results.

Spreadsheet validations/calculations had been carried out during May 2010. These need to be redone periodically.

Several items of equipment were not adequately identified, particularly 'sieves', 'thermometers' and 'plasticity index equipment'. It was recommended that these items be appropriately identified to ensure traceability of calibration.

IANZ Audit Findings CONT.....

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- It was recommended that estimation of the uncertainties associated with the major test methods be commenced and documented prior to the next assessment in 2012.
- The Weighbridge certificate for the Benkelman Beam truck should be located and held in the appropriate equipment file.
- A recommendation was offered that a spreadsheet or comparison data be maintained for balances, ovens and thermometers to identify any trending/deterioration in this equipment.
- Oven temperature records should include both the actual readings and corrected readings to prevent any doubt as to correct temperature.
- NDM worksheets would benefit from the inclusion of shear vane data.
- It is recommended that the positioning of the thermocouple used for checking drying oven temperatures is aligned with the standard requirements.
- A notation should be made on the worksheets to indicate those data resulting from split sieving and weighing to confirm that sieves have not been overloaded.
- It ws recommended that any inter-laboratory training be recorded in the appropriate staff members training folder.

Recommendations relating to the following equipment/methods:

- ASTM 2172 If the 'Ammonium carbonate' preparation is not used (to save time) then this was considered a 'deviation' from the test method and the client should be advised, the report should identify that this part of the procedure did not occur and also this test shall not be IANZ endorsed.
- ASTM 2341 Where estimation of 'Kerosened content' was reported this test shall not be IANZ endorsed
- ASTM D2041 A calibration sticker should be located adjacent to the flask if it was not possible to attach a permanent label to the flask.
- ASTM D5361 Advise client of any deviation from the approved sampling method.
- It was recommended that the organisation continue with the implementation of estimation of uncertainty of measurement for tests methods and particularly for equipment measurement.
- Computer programs had been validated and while validation records were being maintained the original hand calculations had not been held on file. It was agreed that the laboratory would maintain a copy of hand calculations in future.
- Weekly balance checks: It is appropriate that the laboratory sets accept/reject criteria for each balance based on individual historical performance and the most sensitive use to which it may be put. This criterion would indicate as a warning that some level of further review and action may be necessary (e.g. servicing etc) but the laboratory management would consider an approach on a case-by-case basis and document the strategy and reasons for the corrective action/allowing continued use.
 Document Control: Some wall reminders have critical information such as (timing information for the mechanical sieve tester) and these should be subject to document control procedures.
- The laboratory has been identifying tests excluded from accreditation in the footnotes at the back of the reports. It is recommended that the words "Not Accredited" be applied adjacent to the test method or result, on the results page, to clarify details.
- It is accepted that the lab has excellent control and validation of its spreadsheets via its protected folder. It could also consider providing version control within each sheet with a brief description of what has changed as it does for other documents.

Technical Group Update

1. Last meeting was 22/09/11 at Geotechnics

2. NZ Vib Hammer Study – UoA

UoA research project is completed and has been presented. Copies available from Jayden if needed. Technical Group has reviewed and decided to push for a fix or adoption of overseas version. The Technical Group will be looking for a meeting with RNZ and NZTA to plan next stage

3. Sand Equivalent Proficiency

Results in and distributed, Winstone looking to carry out analysis' and provide report. Thank you to David for his efforts.

4. Weathering Quality Index Proficiency

Frank Hu has volunteered to carry out a statistical analysis and report, Tech Group has seen 1st cut, Technical Group has reviewed and final draft should be available soon. Thanks to Frank for his hard work and expertise.

5. Plasticity Index

Sarah has collected all the results and will be checking, analysis (at this stage) will be done by PQ systems (~\$2K) as a trial benchmarking exercise.

6. PSV Proficiency

Results have been returned, RNZ are working on a report that should be available soon.

7. Bitumen Proficiency

Two of our members are running bitumen based proficiency and have volunteered to supply CETANZ with data for proficiency program. These proficiencies have sponsors and so will not require CETANZ to recover costs.

8. Proficiency Program

Technical Group has reviewed, next schemes will be getting underway soon. The first of which is likely to be a concrete strength test proficiency.

9. Scala Cone Tip Technical Report and Guidance notes

Steve Anderson has prepared a technical note and a guidance note, group has reviewed final drafts should be on CETANZ website soon.

10. TNZ T1 Review and Deflection Bowl Measurement for NPTG/NZTA

Subgroup meeting:

Meeting was held between David H (representing NPTG) Jayden E and Steven Anderson (representing CETANZ) regarding inclusion of deflection bowl measurement in T/1 method review by CETANZ. It was agreed that due to difficulties in measuring a reproducible bowl with the standard Benkelman equipment, that CETANZ would leave deflection bowl measurement out of T/1 and instead create a CETANZ Guideline document that would outline 3 different equipment technologies and methodologies that could be trialled and perfected before being adopted by NZTA as a robust test method.

11. RTSSG – 1st Working Group Up date

The working group has completed review of Parts 1, 2 and 3 of NZS 4407. Part 4 reveiwe will be started in the New Year.

12. PPAC Report

PPAC enthusiastic about CETANZ qualification and PT initiatives.

No progress on Rubber Capping, which is with RMCANZ.

The status of D3666 is unchanged – i.e. exclude the clause in the test method which references D3666 – response from ASTM has been unhelpful.

APLAC assessment was completed and went well. IANZ will have to have a structured PT policy (draft pre-

sented to PPAC).

13. AGS Electronic transfer of geotechnical and geoenvironmental data

Steven Anderson will represent CETANZ at next meeting for AGS4. Rodney Hutchison from KGA GEOTECHNI-CAL LIMITED is chairing the group. The roll out will likely mean some Labs will be asked to provide investigation/ test data in a specific format.

14. Linked IN

Steven Anderson set up a CETANZ group for Linked In so that members can network on line. Great opportunities to start discussions and gather feedback from our members and customers. Will look at setting up link on CETANZ website ...i.e. "Follow Us on Linked In" or something similar.

15. Uncertainty of Measurement Tool

Frank Hu and the technical group completed the tool and is now available for use on the CETANZ website.

16. NZS 3112.2

CETANZ has committed to funding \$2K towards review and amendment, Standards are seeking \$8k from NZRMCA to get review off the ground.



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ACCESSING GEOTECHNICAL AND GEOENVIRONMENTAL DATA

The NZ Geotechnical Society (NZGS) is looking at improving and streamlining the way in which we can all access geotechnical data from field investigation and testing as well as laboratory testing. It is about to launch Version 4 of the AGS data transfer format. This will supercede the current Version 3.2. It will enable laboratories to seamlessly and reliably export their test results electronically to clients.

Historically and, to an extent currently, the geotechnical industry has relied upon obtaining investigation data (field and laboratory) in paper form. While most organisations have internal data management software in place, they continue to rely on manual transcription of data from outside parties into their systems. This reduces access to the base data and introduces the possibility of transcription errors. In the case of laboratories, the data is generated and stored electronically in their LIMS or similar. What is needed is a universal 'bridge' between the parties generating and using the data. At the present time this does not effectively exist in New Zealand, with laboratory test data generally being provided in paper form or using bespoke spreadsheets.

The problem was identified and addressed in the UK by the Association of Geotechnical and Geoenvironmental Specialists (AGS) who developed a relatively simple file structure protocol. This allowed suppliers of data to provide their data electronically in a reliable and universally readable form, without having to rewrite or modify spreadsheets for each supplier or receiver. This protocol has proven to be exceptionally successful, with close to universal acceptance.

In New Zealand, we continue to rely on hard copy paper reports to pass on data. In 2007, The NZGS set up a Working Group to establish a version of the protocol for local use. This was published in the form of a document "Electronic Transfer of Geotechnical and Geoenvironmental Data" Version 3.2 NZ v1.0, which is available for download from the NZGS website.

The NZGS is now updating this document to follow the Version 4 currently being finalised by the AGS in the UK. The updated version will also include a number of New Zealand specific data fields to ensure that it continues to meet the needs of New Zealand users. By maintaining close alignment with the UK Version 4, we will ensure that the mainstream geotechnical data management software will be able to provide data files in AGS (NZ) form.

The question is commonly asked as to whether the AGS 'Format' requires rewriting of existing databases. The answer is no. The concept of the data transfer format is a basic, spreadsheet type file (ASCII CSV), laid out to a set of prescribed rules to ensure that, once generated, it can be read by any other software using the same set of rules. The concept is extremely simple and relatively easy to implement. It also only has to be set up once.

The AGS and the NZGS recognise that the needs of our industry continue to change and evolve. They have therefore incorporated provision to update the Format as and when required. Suggested updates will be able to be put to the NZGS Working Group who will consider them and then add those agreed to the published Format to allow inclusion into the respective software packages.

The data transfer format is set up to accommodate geotechnical laboratory data, as well as geoenvironmental laboratory data. A review of the geotechnical tests has been completed to ensure that local New Zealand requirements are included. This will be followed by geoenvironmental tests in due course.

The updated Version 4 of the AGS (NZ) data transfer format will be completed by the end of the year and will be published on the NZGS website for free download. Provision will also be made for posting questions and responses, as well as notification of updates.

Rodney Hutchison Geoffrey Farquhar For NZ Geotechnical Society

TBR (Todd Bearing Ratio) test for Lime/Cement Stabilised Sub-Grades and Sub-Bases

Introduction

From an examination of the available literature, or more correctly the lack of it, on the design of pavement incorporating a lime or cement stabilised layer, it is readily apparent that this topic has caused designers and researchers considerable trouble. Many reports on the use of lime/cement stabilised layers in pavements specify a minimum strength requirement, but unfortunately leave the question of incorporating the layer into a meaningful pavement design unanswered.

Basis of analysis for design

From laboratory testing conditions to the field construction site it is evident that much variability is introduced as a result of differing techniques between the two. The TBR test method described below better represents conditions of the onsite construction in the laboratory and better represents the CBR values expected. This then should inform the design phase of the upgrade much better and lead to fewer failures.

Figure 1. Shows a typical TBR sample.

Note: The name "Double Decker CBR" is now referred to as the Todd Bearing Ratio (TBR)



The in-situ sample of the clay sub-grade is tested as per a normal CBR test (NZS 4402:1986 test 6.1.2) – the mould with the sample is placed in a loading machine to ascertain the penetration force, soaked for 4 days and then repeated. An extension mould is then placed on top of the in-situ sample, and this is then treated as a remoulded CBR test (NZS 4402:1986 test 6.1.1). Aggregate material from the existing roads sub-base is mixed with the appropriate stabilisation material (according to the results obtained from RRU TR.2 Appendix C Unconfined Compressive Strength test already completed) and compacted on top of the in-situ sample, as would happen in the field. This "remoulded" specimen atop the in-situ sample is then placed in the loading machine and tested twice, 1 hour after compaction and then four days later after curing.



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Our laboratory came up with this test method to improve the relationship between laboratory testing and onsite testing during construction and to prevent unnecessary pavement design failures. These main reason for this - designs relying upon data from the NZ standard remoulded CBR test (NZS 4402:1986 test 6.1.1) that yield higher CBR values (as they are compacted in a single mould of their own with a rigid base, not on clay sub-grade as would happen in the field). In the design phase Engineers tend to use the higher CBR Values obtained and based on the results reduce the thickness of the aggregate layers causing premature failures. All moulds were compacted using standard compaction as outlined in NZS 4402:1986 Test 6.1.1 - Remoulded Specimens. The TBR is an in-house test method which is a variation on this.

This test method has been used for 15 years in our laboratory, for approximately 660km of roads in 8 different district and local authority areas. There have been no significant failures reported in this time.

Figures 3+4 over the page show a comparison of the CBR values found using the different test methods Remoulded CBR test (NZS 4402:1986 test 6.1.1) versus The Todd Bearing Ratio.

As is shown, the CBR values are considerably different between the TBR and the remoulded specimens, more than double in many instances. The lower TBR values are more indicative of the expected conditions contractors will have out in the field.

 Table 1. shows the differing Dry Densities between these two methods and the onsite compaction percentage of the road after it was stabilised,

 based on results from the TBR method. It seems to confirm the lab

Test Hole no.	Single Mould	Todd Bearing	NDM Readings	based on results from the TBR method. It seems to confirm the lab results using the TBR method.
	D/D	Ratio D/D	On site D/D	
1	2.18	2.03	2.02	able 1. Dry Density Results for Tremaine Ave test holes
2	2.16	2.08	2.09	Note: the double decker dry density results for each individual test hole were used as the proctor value when the Nuclear Densometer
3	2.17	2.06	2.05	
4	2.19	2.11	2.10	was used to measure the compaction over the site of each original test hole onsite.
5	2.20	2.14	2.13	It is our contantion that this test should be further investigated and
6	2.22	2.19	2.19	ratified so that engineering design in the future could better reflect
				field conditions and lead to longer pavement life. The flow-on effects

of better design are considerable and should not be overlooked.

Should you wish to offer any feedback or would like to know more about this test please contact Dennis Todd "Civil Engineering Testing Services" (CETS) at the Palmerston North City Council laboratory.

dennis.todd@pncc.govt.nz P (06) 3514479



This in-house test method is currently being evaluated by the New Zealand Stabilising working group to become a NZ standard test method.



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Dinner at the British High Commission



Who: -

Her Excellency, Vicki Treadell - British High Commisioner, Wellington

Peter Hansford, President of Institution of Civil Engineers (ICE), London

8 other invited guests

And Paul Burton – Immediate Past Chair of CETANZ

Where:-

Residence of British High Commission in Wellington

What:-

A dinner in Honour of Peter Hansford, President of ICE whilst visiting New Zealand

When:-

October 2011

Why:-

CETANZ is now recognised as an engineering organisation. We were provided this opportunity to network with overseas colleagues.

The dinner and company were outstanding. All silver service, an amazing selection of New Zealand foods and wines was served through the evening whilst guests shared experiences and discussed areas of interests. Unfortunately I cannot divulge too much with the use of Chatham House Rules, but I can certainly say that I met some very interesting people who I look forward to developing ties for CETANZ with over the coming years.

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