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CETANZ

Civil Engineering Testing Association of New Zealand

CETANewZ

The official newsletter of the Civil Engineering Testing association of NZ

Issue 006, April 2009

In this issue...

From the Chair

We have all heard about Uncertainty over the last few years from our friends at IANZ, however it is now our business landscape that is uncertain and I am sure we all have slightly differing viewpoints. Our perspective at CETANZ continues, to improve the Civil Engineering Testing industry in New Zealand. Our committee decision's consider the changes in the economy and this is leading to some minor adjustments to our goals.

This edition will highlight some of the great developments happening for our members including our work with Infratrain to create a qualification for our Industry. We also have news of the Regional activities proposed and details of our willing volunteer co-ordinators. We have finalised all the conference accounts and we are pleased to announce that we have made a small profit to add to our accounts.

As we develop we are now able to look at providing extra services to our members, and we are keen to hear your views. Our regional activities will be available for attendance and will include both social and technical gatherings. We are keen to provide training to our members but we need to hear your opinions. I would welcome your emails, pburton@geotechnics.co.nz with any thoughts you may have on this subject.

As we look forward to the year ahead, I hope we can all take the time to acknowledge the hard work of the volunteers and companies who provide their time and money for CETANZ. We would love to see your participation whenever possible, so keep an eye out for events happening near you.
All the best for the coming months.

Paul Burton – Chair CETANZ

From the working groups...Technical

Unfortunately due to work pressures the Technical Group has not been able to get together since our last meeting in December.

But work does continue in the background.

NZ Vib Hammer Test Method Review

As many of you will have seen in the last news letter issue, the Proficiency round was completed and a report issued by the Analyser OPUS.

The full report with added commentary from CETANZ will be available soon.

CETANZ Technical Group will look to recommend further work be carried out on the NZ Vibrating Hammer test, focusing on equipment and technique issues that we believe are contributing to the poor repeatability and reproducibility of the test.

CETANZ Proficiency Testing Program

The next Proficiency Rounds that are in the planning stage are:

Soils …… Plasticity, Moisture Content and Linear Shrinkage. Coordinated by John Evans at OPUS Auckland.

Aggregates …… Weathering Quality Index and Crushing Coordinated by Stevenson Laboratory.

At this stage things seem to be going slow …….. so we NEED your help … the more laboratories that are willing to help coordinate and distribute the more schemes we can run……..

We are also looking to the regions to run area specific rounds. e.g. a Benkelman Beam round in the South Island….. or an NDM in the Bay of Plenty.

So please contact the Technical Group to volunteer.

Industry Representation – Funding for Standard Review

Steve Anderson from the Technical Group has been in contact with Standards NZ regarding possible government funding of Standard review. At this stage it appears that the wheels of bureaucracy are moving slow and no changes have been announced. The Technical Group will keep pushing the issue and in the mean time we intend to canvas CETANZ members to help identify the main test standards that need amendment.

Technical Support – Uncertainty of Measurement Technical Workshop

The Technical Group is continuing to work towards putting together a workshop and guidance notes specific to our industry. It is envisaged that this may be run in conjunction with some of the regional activities expected to take place over the next couple of years.

Technical Support – Benkelman Beam Deflection Measurement

It has been brought to the Technical Groups attention that some operators using Benkelman Beam in accordance with TNZ T/1 have recently been having non conformances raised against them from IAN with regards to the reference under section 2.1 (a) 2nd para, within the standard, of a sun shield requirement in accordance with a Road Research Unit Newsletter No 49(1976); where operators have no sun shad fitted.

The original document RRU NL No 49 only indicates that there may be an influence on beam reading if the time to complete readings is 2 minutes or greater and the beam is passing from the shade into direct strong sunshine. It is a **recommendation** that aluminium beams be fitted with a sun shield if these influencing factors occur.

Idiot!

The advice from CETANZ Technical Group is that if operators have sun shields fitted then they should continue to use them. Operators with no sun shields fitted should ensure that readings are taken in less than 2 minutes and the beam should be allowed to stabilise to the site conditions prior to commencement of testing, to minimise cooling or heating effects when moving the beam from site to site or out of storage. In other words operators should be aware that temperature could affect the readings and what steps can be taken to minimise the affect.

The CETANZ Technical Group will be recommending to the NZTA to remove the reference to document RRU NL No49 in TNZ T/1 as it is no longer in publication and review/amend the requirements under section 2.1 (a)2nd para, of the standard. A typo and clarification around positioning of the beam shall also be tabled.

IANZ Audit Issues

This new section comes from Keith Towl of IANZ who has kindly contributed the following to help keep Laboratory personnel up to date with the latest developments coming out of IANZ audits around quality, equipment and technical issues.

From Keith,

Many of you would have had Graham Smith or myself asking for more progress to be made in estimating uncertainty of measurement (EUoM) over the past year.

NZS ISO/IEC 17025 requires, under Clause 5.4.6.2, that procedures should be in place and applied to complete this task. In some cases the process has been slow to be implemented, given that this clause has been part of the standard since 1999, but the wording of the clause is not exactly transparently clear on what needs to be achieved. It is hoped that some help and training will be available through CETANZ (see above) for this work for test methods.

The part of the uncertainty of measurement requirements that are clear are those in Clause 5.4.6.1. This refers to EUoM for calibration and specifically refers to the clause applying to "a testing laboratory performing its own calibrations". Many laboratories carry out in process checks (e.g. routine single point and repeatability checks for balances) and these are not considered to be calibrations. However, often items of equipment are calibrated against calibrated reference equipment as their only calibration and, in such cases, the estimated uncertainty of measurement for the calibrated article must be calculated. The most common calibrations in laboratories are of vernier callipers and dial gauges using reference gauge blocks and callipers used as reference items to calibrate moulds and sieves etc.

Fortunately, calculation of the EUoM for calibration is generally simpler than that for test methods because fewer variables are normally involved. The inputs are generally:

- the uncertainty of measurement for the reference device being used
- a measure of the variability of the measuring process which is the standard deviation of repeat measurements during calibration. If s.d. is zero use resolution of the item
- sometimes other factors such as temperature effects should be accounted for.

A free uncertainty calculator, which makes the calculation of the uncertainty estimate simple, is available from the Measurement Standards Laboratory (MSL) website, http://msl.irl.cri.nz/, in the "Uncertainty Tools" section of the Training and Education Resources section. Some laboratory staff may also like to take part in the MSL one day course on Measurement, Uncertainty and Calibration which will be run in August in both Lower Hutt and Auckland

Jayden Ellis, CETANZ Technical Group Leader.
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info@cetanz.org.nz

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Now calibrating and servicing just about all your civil testing gear.

The Measurement & Calibration Centre

New Calibration Services

In addition to our existing suite of services, we have recently gained IANZ accreditation for:

- Compression machines
- Tension machines
- Balances
- Load cells
- Proving rings

Civil Testing Equipment

Nuclear Density Meters, Shear Vanes, Impact Testers, Concrete Airmeters, Schmidt Hammers, Measuring Wheels, Scala Penetrometers, Skid Resistance Testers and more...

Metrology and Lab Testing Equipment

Dial Gauges, Calipers, Liquid Limit Devices, Length Bars, Micrometers, Rubber Hardness Testing (ShoreA, IRHD), Measuring Tapes, Steel Rules, Weight Gauges, Engineers Squares, Spirit Levels, Dumpy Levels, Bevel Protractors, Inclinometers (Bevel), Graticules, Paint Gauges, Gauge Blocks, Thread Gauges, Surface Texture, Surface Plate and more...

MCC - The Measurement and Calibration Centre

For more information call us on: Ph: (09) 362-1720 or visit our website www.themcc.co.nz
19 Morgan Street, Newmarket, Auckland, New Zealand

Independent Testing Services

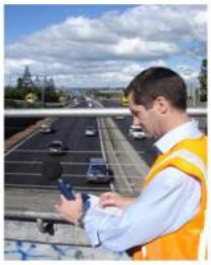
THE AUCKLAND LABORATORY

The Auckland Laboratory rigorously maintains an **independent** and **unbiased** testing facility for our clients as part of our IANZ requirements where: accuracy, confidentiality and customer service are of the utmost importance to us. We have a broad range of clients in both private and public sectors and are happy to assist even if only for **impartial advice**.

The laboratory is **IANZ accredited to NZS/ISO/IEC 17025** for mechanical testing under the areas: 4.01 Aggregate, 4.02 Bituminous Materials, 4.08 Soils, 4.15 Operations by Seconded Personnel and 4.20 Pavement Testing; the scope covers a wide range of national and international test methods. The separate specialist laboratory in Tauranga offers a comprehensive suite of performance assessment and test methods for emulsions and binders.

We are available for **Research and Development** work for both design of and assistance with projects for clients. We have the expertise to arrange and provide advice on a wide range of materials testing and assessment requirements, not covered on our standard scope, either in house or through collaboration with other test facilities, these could be: accredited / non accredited testing or **bespoke options** designed specifically for the client. We are happy to discuss individual requirements.






For more information or to arrange a visit please contact either, Phil Archer, David Aubrey or Howard Jeffery-Wright at *The Auckland Laboratory*—

Phone: Office +64 (0) 9 580-2494

Mobile: Howard +64 (0) 276 837 681
David +64 (0) 272 427240
Phil +64 (0) 272 434813

Email: Aucklandlaboratory@downerediworks.co.nz

new zealand accredited laboratory

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News from the groups….Careers and Training

By Eric Paton, Team Leader

A list of Subjects has been put together by myself and will be viewed by the training group for comments shortly. Mike Ruki has been appointed as a new InfraTrain manager from England to get this qualification of the ground and will be in Auckland in the next week or so to have a look at some laboratories and to get a feel for what we do.

The next meeting for the training group will be soon.

But wait there's more...

Another member of the Careers and Training working group has also made some progress with new industry unit standards. Stuart Moulding of Civiltrain has been working with Marcia Huso of InfraTrain to develop 3 new unit standards which should be registered on the NZQA framework around the time that this newsletter is sent out.

The titles for the 3 new units are below, and some of these units may possibly form part of a laboratory based qualification which is of interest to CETANZ members:

- Describe and hand test road construction subgrade materials in relation to compaction
- Understand soil mechanics to achieve the best result through compaction
- Use a nuclear density meter to measure compaction of soils, sands, or gravels

Situations Wanted

Nataliya Agarkova

Laboratory Manager

Education and affiliations

Bachelor of Hydrogeology and Engineering Geology (Hons) Kiev

Fields of expertise

- Laboratory testing for physical and mechanical properties of soils
- IANZ Approved Signatory.
- Laboratory management
- laboratory testing
- laboratory staff training
- maintenance of standards and equipment calibrations to IANZ and ISO 17025 standards.

Career Summary

- Coffey Geotechnics (NZ) Limited 2007-Present
- Foundation Engineering, Auckland 1997 - 2007
- "Kievprojekt", Kiev Ukraine 1988 - 1996

Contact details:

home ph: 09 536 6865
mobile: 021 1487226

or

nyagarkov@xtra.co.nz

Member Profiles

This issue…Mick Zeewoldt from Civil Engineering Services Ltd—Nelson

1.**What is your current position, who do you work for and briefly describe your role?**

Laboratory Manager/Director, Civil Engineering Laboratory Services Nelson.

2.**How do you see CETANZ benefiting your business?**

A good support and voice for smaller labs

3.**What do you enjoy doing when you're not working?**

Mountain Biking and lots of it!

4.**If you could visit just one country in the world where would it be and briefly why?**

Moab Utah, USA, did 2 weeks of mountain biking with 5 mates there last year and it was fantastic

5.**What is the best piece of advice you have ever been given?**

If I told you that I'd be giving away a trade secret….!!!!

Standard Alert!

Cement & Concrete Association – 2008 RED Book
The updated Cement & Concrete Association RED Book *(Examples of Concrete Structural Design to New Zealand Standard Code of Practice for the Design of Concrete Structures – NZS 3101)* is available to purchase.
This edition was written following the 2006 revision of NZS 3101 (including Amendment 1). At this stage only sections A1, A2, B1 and B2 (structural frame building) are included. However, sections B3, C1 and C2 (structural wall system and low rise industrial building) will be released later in 2009.
For further information, email CCANZ: admin@cca.org.nz.

Amendment 1 to NZS 3116:2002 Concrete segmental and flagstone paving
Concrete segmental and flagstone paving, NZS 3116:2002, sets out provisions for the non-specific engineering design and construction of pavements using segmental and flagstone pavers. Amendment 1 to NZS 3116:2002 is now available – it provides New Zealand variations to paver manufacture and tests for AS/NZS 4455 and AS/NZS 4456. The amendment also extends the scope of the Standard to include flagstone paving.

Revision of NZS 3122:1995 and NZS 3123:1974 Committee: P3122-3123
Project Manager: Mani Taare
Estimated Publication Date: August 2009
Comments: A project for the amendment of NZS 3122:1995 Specification for Portland and blended cements (General and special purpose) and revision of NZS 3123:1974 Specification for Portland pozzolan cement (type PP cement). First committee meeting took place on 12 February 2009.

Want more info ….. go to www.standards.co.nz and click on the "Public Comment" Tab. Here you can download the draft version for an 8 week period and submit your comments.

TNZ B6 to B8? Word is circulating that NZTA Stabilisation Working Group (SWG) is about to start developing new Specifications following on from the recent "TNZ B/5 : Specification for insitu stabilisation of modified pavements" release in 2008. The new specifications will focus on In-plant mixing of aggregates and binders (Pugmills), UCS and ITS testing. CETANZ will be working with the AQA and RNZ to ensure we get a chance to comment during development.

Want more info ….. go to www.standards.co.nz and click on the "Public Comment" Tab. Here you can download the draft version for an 8

www.cetanz.org.nz

Fulton Hogan

A member of the Fulton Hogan Group
www.fultonhogan.com

AUCKLAND LABORATORY SERVICES

Who are we?

The Fulton Hogan Auckland Laboratory is a test facility accredited by International Accreditation New Zealand (IANZ) in the field of Mechanical Testing and Water Testing level 2. The Laboratory is a subsidiary of the Fulton Hogan Group.

Where are we?

The laboratory is situated within the Fulton Hogan Auckland complex at Reliable Way, (off Leonard Road), Penrose, Auckland.

Samples may be delivered or dispatched to the above location or alternately, we can take samples from your site on your behalf.

A test facility for undertaking
Asphalt / Bitumen, Aggregates, Concrete, Soils, Water & Construction Quality Control

Contact us at:

Fulton Hogan
Auckland Laboratory Services

Private Bag 11-900
Ellerslie
AUCKLAND (NZ)

Telephone *09-5804664*
Facsimile *09-5792337*
Free phone *0800 Laboratory*

Ewan Cameron (Manager)
Ph: 09-5804618
Mobile (027) 2427484

Email:
ewan.cameron@fultonhogan.com

See our scope at
www.ianz.govt.nz/ianz/directory/index.htm

An IANZ Accredited Test Laboratory

Broad Testing Capability:

- *Asphalt Mix Design and Quality analysis*
- *Soil Classification Tests*
- *Soil/ Aggregate Compaction Targets (MDD,OWC)*
- *Soil Strength/bearing Tests*
- *Insitu density testing of Soil, Aggregate and Hotmix Asphalt*
- *Characteristics, Compliance and Compaction Control of Crushed Aggregate Products*
- *Bitumen / Emulsion analysis*
- *Earthworks Compaction Control*
- *Pavement Testing (Benkelman Beams, Nuclear Densometer)*
- *Site Investigation*
- *Materials Sampling*
- *Water Testing*
- *Statistical Control*
- *E2 Bitumen distributor compliance testing*
- *Fresh / hardened concrete testing*

What do we do?

The scope of testing carried out at the Laboratory includes Asphalt, Aggregate, Soils, Concrete, Bituminous materials, Asphalt mix design, production control testing of construction materials such as roading and asphalt concrete aggregates. We also offer a range of construction control testing services such as insitu density, pavement deflection and classification tests for soils. We have recently opened our new water lab for drinking water testing and we are IANZ accredited to level 2. The services we provide are available to a broad range of clients such as construction and civil engineering companies, consulting engineers, and manufacturers.

What are our Objectives?

To provide a Quality Service to our clients which is driven by efficiency, accuracy and value, focusing on fostering long term partnerships and meeting our clients' needs by using innovative methods with effective feedback and pro-active communication.

Test Focus...Liquid limits and the Casagrande Cup issue

At the recent CETANZ committee meeting held in March the ongoing issue of Casagrande liquid limit bowl calibrations was addressed.

The problem has been prevalent in our industry over the last few years and is now becoming more and more serious with the majority of liquid limit bowls, imported to BS/NZS standards, not meeting the standard and therefore not passing calibration. These bowls are supplied from the UK (supposedly meeting BS1377) but upon calibration do not meet the NZ standard, although the dimensions and tolerances are exactly the same as the British standard. This raises the question, how can the majority of Liquid Limit bowls supplied to BS1377 not meet NZS4402, where the dimensions are exactly the same; yet the UK is not reporting the problems we are having? The answer to this may be that they have a lower level of calibration performed in the laboratories, without asking British laboratories for their calibration records we will not know.

Replacement bowls suffer the same fate plus have the added problem of the downtime in waiting for suitable replacement. It can easily cost us and the supplier an additional $1000.00 by the time we have had a bowl calibrated and failed, sourced a replacement which has also failed calibration and then tried to re-work whichever is the best of the bunch.

Only one of the last seven bowls brought into New Zealand has passed calibration and this was with minor rework. We have now taken to advising potential customers that we cannot guarantee that the Liquid Limit gear will pass calibration. We have tried to fix the problem in various ways, however nothing has worked consistently. At the present moment Geotechnics has taken the onus of finding a solution by looking at avenues closer to home with possible supply from local fabricators and toolers.

As an industry we need to decide……..

Bearing in mind the final use of the information gained from the test, is it necessary to have such tight specifications? Will relaxing these likely cause problems in the long run?

If the specifications are to remain as they are, what are users willing to pay for this equipment? Will this mean the cost of testing needs to be raised to cover costs?

Do companies with old LL bowls that still meet the spec gain a competitive advantage over those trying to replace their bowls (and unable to test to spec while this happens which is sometimes a lengthy processs)?

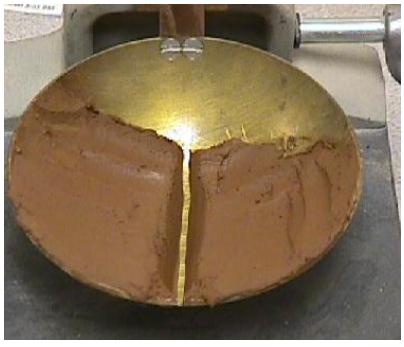
Maybe it's time to look at adopting another standard such as ASTM (one which does not have the same problems) or for CETANZ to approve a method that is recognised within our industry.

Geotechnics Sales are working closely with CETANZ and IANZ to come up with a satisfactory outcome and we will keep you posted on our success

We look forward to resolving the issue.

Geotechnics Sales

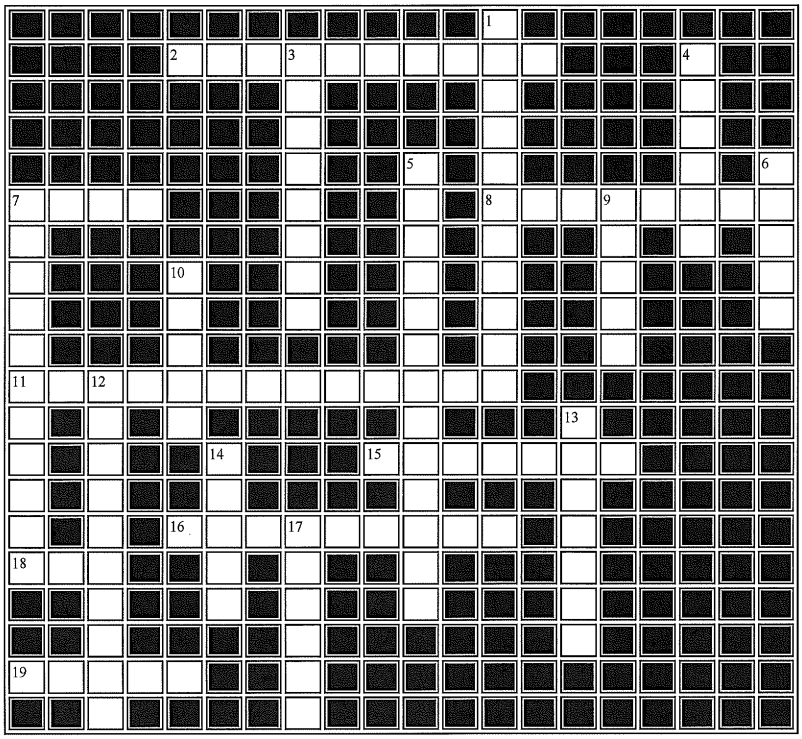
Only one of the last seven bowls brought into New Zealand has passed calibration and this was with minor re-work



Crossword corner....

Standards and Testing

Howard Jeffery-Wright



Across

2. Alternative method of sub-dividing a sample
7. Dynamic **** Penetrometer
8. It has three axis and we use it for testing materials
11. Same operator, sample and equipment
15. For some materials this is the end of their life
16. Can be Kinematic or Dynamic
18. Site instrument used for density measurement (Abbr)
19. Another method of Asphalt mix design

Down

1. Some of us aren't quite sure of this
3. Method of sub-dividing a bulk sample
4. We can measure this if we apply stress
5. The 'A' in IANZ
6. Measure of concrete workability
7. Equipment check
9. Accreditation representative comes to check the biscuits
10. A mode of failure under stress
12. This type of container is used in NZS 4407 test 3.7.1
13. All good laboratories should have one of these manuals
14. We measure these in Soils, Asphalt or concrete
17. The 'C' in w/c and a/c ratios for concrete

Answers from last issue