



CETANZ

Civil Engineering Testing Association of New Zealand

CETANewZ

The official newsletter of the Civil Engineering Testing association of NZ

Issue 007, August 2009

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From the Chair

From my discussions with various people through our industry, it appears that most are feeling this winter with some discontent. That is not surprising as we are involved with construction, which on a global scale has been heavily affected by economic pressures.

The story is quite different for our CETANZ development!

This issue of CETANewZ will bring you some uplifting articles about the achievements of our Working Groups. I have been very pleased with the progress from Eric Patton and his team in Careers and Training, read the articles to find out more. The Technical Issues Group has issued the Vibrating Hammer results, I am sure these results didn't surprise many of us, but how will we move on? That is up to CETANZ members to decide.

Our Societies Activities Group will be commencing the plans for our conference event for 2010, a different format to meet our economy and some great developments to be unveiled. I would recommend that you keep up with this event as it unfolds as the intention is to answer some of the issues raised at previous conferences.

Our regions will be starting to send out some details about gatherings, please support these as they are being organised voluntarily. This is of course an event where participants will understand the technical jargon that we like to consider 'interesting. Give your partner a rest from the intricacies of Sand Equivalents and meet like minded colleagues for some tech and refreshments.

Thank you for your ongoing commitment to our organisation, we are moving on and achieving the goals set by you at our conferences and improving our industry for the future.

Paul Burton



From the working groups | Technical

NZ Vib Hammer Test Method Review

The final CETANZ report has been distributed to members. The next stage will involve the formation of a new Technical Subgroup of CETANZ expert technician members and representatives from stakeholder organisations (NZTA, AQA, RNZ, IANZ). This Subgroup will look to design the next stage of the review that will likely focus on specific trials using a single lab set up and example aggregate. Comparing against benchmark BS and ASTM 'r' values. Exploring effect of different hammer models, mould type and other factors listed above. Choosing options with least variation contribution. i.e. Agree standardised hammer type, mould and technique, while ensuring data generated from chosen equipment and technique will produce appropriate MDD result for compaction and performance in the field.

CETANZ Proficiency Testing Program

Unfortunately nothing much has happened since our last newsletter mainly due to two factors:

1. The Technical Group members are busy with normal work commitments.
- No CETANZ members have volunteered to help arrange any national or local schemes.

We need your help to get more schemes started. Please contact the Technical Group if you can lend a hand.

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.



NZ Standards Review

At the last CETANZ conference, many of the members in attendance voiced their concerns regarding the need to review New Zealand test method Standards, NZS 4407, 4402 and NZS 3111.

The biggest road block to getting any review underway, is funding. Recent amendments and/or replacements to some standards have cost organisations in this industry in excess of \$250k.

In his speech at CETC 2008 and before the last general election, National MP Nick Smith, mentioned a possible restructuring of the Standards Council, Standards Act and Testing Laboratory Registration Act.

At that stage, it was thought that these changes might have generated the funding needed to review the aforementioned Standards. Although much work has already been done, the funds have not been forthcoming and CETANZ have sent a letter to the Hon Gerry Brownlee, current Minister for Economic Development, requesting an update of the situation.

The Way Forward

Regardless of possible changes to government policy or act of government, CETANZ believe that our industry, together with other stakeholders should continue to pursue the subject.

To Be Done by CETANZ

- Work with Standards NZ to choose the best approach to reviewing of test standards. *E.g. complete standard review or piece meal approach (test by test).*
- Engage with other stakeholders to assess shared interest. *E.g. RNZ, AQA, IPENZ, NZCF, CCANZ, CIC, ACENZ, NZCID, NZTA, IANZ to name just a few.*
- Survey CETANZ members to prioritise those standards requiring review or change most urgently.
- Work with stakeholders to secure sponsors for such review.
- Use IPENZ resources familiar with Government process to lobby on our behalf

Where Are We Now?

- Addressing the review process on a “tests by test” basis may be the most efficient use of resources.
- CETANZ has and will be approaching other industry organisations in the coming months, bringing the issues to the attention of those groups that will lobby across multiple forums.
- CETANZ Standard Review Survey is due for distribution in coming months.
- To date, one potential stakeholder has indicated their interest in providing a share of the required funding. In the coming months, CETANZ will contact other stakeholders in an attempt to secure additional funding.

What Can You Do As a CETANZ Member?

- Talk to your superiors and highlighting the problems we face, using old and out of date test methodology as well as the advantages of the proposed changes.
- Complete the CETANZ Standards Review Survey and return it to the Technical Group.
- Suggest other possible stakeholders that CETANZ could work with.
- Suggest other possible avenues of funding to the CETANZ Technical Group.
- Talk to the other Industry Groups to which you may belong. Make this an issue that they should be looking at.
- Send a letter to the Hon Nick Smith and Gerry Brownlee asking for information or help with this issue.
- Volunteer for future possible Standard Review Committees in your area of expertise.
- Participate in CETANZ initiated proficiency rounds. These will provide evidence regarding repeatability and effectiveness of tests.

BREAKING NEWS! — NEW ELEMENT FOUND



Lawrence Livermore Laboratories has discovered the heaviest element yet known to science. The new element, **Governmentium** (Gv), has one neutron, 25 assistant neutrons, 88 deputy neutrons, and 198 assistant deputy neutrons, giving it an atomic mass of 312.

These 312 particles are held together by forces called morons, which are surrounded by vast quantities of lepton-like particles called peons.

Since **Governmentium** has no electrons, it is inert; however, it can be detected, because it impedes every reaction with which it comes into contact. A tiny amount of **Governmentium** can cause a reaction that would normally take less than a second, to take from 4 days to 4 years to complete.

Governmentium has a normal half-life of 2-4 years. It does not decay, but instead undergoes a reorganization in which a portion of the assistant neutrons and deputy neutrons exchange places.

In fact, **Governmentium's** mass will actually increase over time, since each reorganization will cause more morons to become neutrons, forming **isodopes**. This characteristic of moron promotion leads some scientists to believe that **Governmentium** is formed whenever morons reach a critical concentration. This hypothetical quantity is referred to as critical morass.

When catalyzed with money, **Governmentium** becomes **Administratium**, an element that radiates just as much energy as **Governmentium** since it has half as many peons but twice as many morons.

From the working groups | Careers & Training

From Eric Paton...

Members of the (IAG) Industry Advisory Group met in Wellington this month (July) for the first time to go over the Laboratory Qualification with InfraTrain. The IAG are Key Technical People from the Civil Engineering Background.

The outcome was very satisfactory. The IAG have put forward their strengths in what they feel will contribute to this project.

The panel will be put in to sectors so that it covers Bituminous Materials Concrete Aggregates soil and Field Testing.

The IAG will meet again in July-August in Wellington to put the final touches to the sector specialisation.

After the sectors have been identified with the key people, they will then sit down in their groups and start putting some ideas down.

Eric Paton—Team Leader, Careers & Training

From InfraTrain...(article can also be found at—<http://www.infratrains.co.nz/InfraTrainNews.htm#LabUpdate>)

Civil Engineering Laboratory Technician Project update

InfraTrain would like to thank all of the nominees for the Civil Engineering Laboratory Technician Project Industry Advisory Group (IAG).

While it is not possible to include every nominee, InfraTrain has been fortunate to be able to select from a wide cross section of the industry to represent both large and small labs, as well as other key interested stakeholders.

The following industry representatives have been selected to form the IAG:

- Toni O'Regan (City Care Lab)
- John Evans (Opus)
- Eric Paton (Fulton Hogan)
- Steven Anderson (Geotechnics)
- Stuart Moulding (Civiltrain)
- Murray Cleveland (TestLab Wanganui)
- Howard Jeffrey-Wright (Downer EDI Works)
- Kevin St John
- Jim Kelly (InfraTrain)
- Alan Stevens (Roading NZ)
- Grant Bosma (Fulton Hogan)
- Graham Duske (Coffey)

Sean Bearsley (Higgins)

The first IAG meeting was held on 8 July, with the general outline for the Lab Technician qualification successfully drafted. Interested parties should keep an eye on the InfraTrain website where the project team will post discussion documents as they become available for wider consultation. Please feel free to contact Stephen Fisher, the Project Manager at: stephen@infratrains.co.nz for further information.



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Technician Profile—Alan Bray-Gunn | Stevenson Concrete

Alan Bray-Gunn is Senior Technician at Stevenson Concrete, Alan is Mr Concrete Fixer!

After 28 years as a concrete technician he's seen first-hand the numerous advances in concrete technology and applications over the past decade. 'The industry went from using the old type of water reducers and plasticisers to high tech polymer water reducers and plasticisers, which have given us more control over the end product. The old additives were like adding liquid soap to concrete. The new products are the equivalent of adding millions of ball bearings, which makes concrete appear wetter, even if it's not.' Alan was born on a farm in Levin, 'fifty-odd years ago – too many years to remember!'

Following a five-year stint in the New Zealand Army, first as a tank driver and then in its ordnance division as a motor trimmer, his career took a different path when he began training in the laboratory at the Ministry of Works as a site investigation technician. Once he joined Stevenson his training also included the standard technicians' course run by the New Zealand Ready Mix Association. Alan has now worked at Stevenson for 15 years, two years at Stevenson Laboratory and 13 years with Stevenson Concrete. His job takes him all over greater Auckland and brings him into contact with a wide range of people and businesses. He visits project sites to check the quality of concrete and to advise on any technical issues that may have arisen. 'I love the problem-solving aspect of my job. When concrete goes wrong, it goes majorly wrong and my job is to find out why, to keep customers happy and to ensure that they get what they've asked for. Fortunately, things don't go wrong that often. 'It's important to use the right product for the job. I get a lot of calls from customers enquiring about the appropriate mixes to use for specific jobs and what's realistically achievable. Clients may want concrete wetter than we normally make it, if they want it to flow further, for example, if there's a lot of steel in a project or to get the concrete into a very tight site.'

He also enjoys being able to work outside. 'I'm not an inside person.' Outside work, Alan says he is 'pretty much a homebody'. He has five adult children and eight grandchildren. He loves rugby and was club captain for Glenfield until five years ago. 'Now I enjoy gardening, rock fishing and seeing my grandchildren. Two of them are in Auckland and six others are spread across over the country.'



From the editor...

If you would like to see yours or someone else's profile here then drop us a line at **info@cetanz.org.nz** and you may see it in the next issue of CETA-NewZ!

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Member Profiles—Danny Wyatt | AECOM

- **Name, company and position**

Daniel Wyatt (Danny), National Laboratory Supervisor - AECOM www.aecom.com

- **What do you expect to gain from your CETANZ subscription each year?**

Access to a knowledge base that is friendly, approachable and professional.

More round robin testing?

Discussion on issues that are industry wide, this is an important one for me being the only Lab in my organisation, although through the conferences I have made excellent contacts..

- **When your not at work in Hamilton where might we find you and what do you like to do on a sunny Waikato wintery weekend?**

When I am not at work in Hamilton you could find me possibly....

- A.) Spending time with my 18month old twins
- B.) Hunting Deer in Te Urewera, Kaimanawa, Kaimais or Atawhenua (Fiordland)
- C.) Hunting Pigs in North Canterbury
- D.) Hunting Tahr In Central Otago
- E.) Fishing for snapper in Coromandel/ BOP / Northland, Raglan
- F.) **Trying** to get a marlin outta the family trailer boat (hooked one last summer! – fell off)
- G.) Diving – see fishing locations
- H.) Surfing – Raglan
- I.) Playing squash – every other lunch time

Basically I find NZ an inspiring playground and you are really only limited to your imagination as to what you can do, I love reading or hearing stories of far off fabled places and researching the areas and getting out amongst it.

Winters weekend in Waikato??? – Surf breaks are usually fairly empty from the summer crowds but generally spending time with my young family and earning brownie points for the next trip!!

- **Where is the best place you've visited in the world and why?**

I am not well travelled but I really liked Fiji for its relaxed atmosphere. In NZ - Northland for its beaches and southland / fiordland for its ruggedness and sheer beauty.

- **Marmite or Vegemite?**

Marmite and cheese sambo's!

- **If you could be any famous figure in the world who would it be and why?**

William Wallace – haha he was the man!!

I think it would be incredible to have that much passion and motivation about something and to actually do things about it, instead of whinging and complaining.





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

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Heavy Duty Scala Penetrometer

- Available in Standard or Heavy Duty models
- Heavy Duty scala has components made from higher tensile material. Available in Heavy Duty upper assembly only or Heavy Duty to 1 m
- Suitable for investigations up to 5 m (material dependant)

Auger

- T-handle, extensions and Auger head in a canvas carry bag
- Standard auger head is 50 mm Ø
- 70 mm and 100mm heads also available

Geotechnics Impact Tester

- Meets internationally recognised ASTM and AS standards
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- Simple correlation from the impact value to an inferred CBR

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- Determines strength of cohesive soils
- Reading in kPa and Nm
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- Widely accepted engineering tool

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- Quickly and accurately measures density and moisture content of soils and aggregates
- Can be used for asphalt thin lift measurements
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- Automatically calculates moisture, air voids and % compaction
- Simple to use
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Standard Alert!

The following standards are up for review.....or have been updated.

Overseas Standards of Interest

BS EN 1097-8. tests for mechanical and physical properties of aggregates. Part 8 Determination of polished stone value (PSV)

This standard is currently at Draft Stage for public comment. Contact the BSI web site for more information.

BS 6100-5:2009 Building and Civil Engineering Vocabulary

"Civil Engineering, Water Engineering, Environmental Engineering and pipe lines."

New and revised standard available now from BSI.

New Zealand or Joint NZ Standards

Road Traffic Noise – New and altered Roads Committee: P6806

Project Manager: Stuart Ng

Estimated Publication Date: July 2009

Comments: The draft is ready for public comment. SNZ is working with stakeholder organisations to coordinate workshops to assist those intending to submit public comment. The public comment process started in late February.

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.

Specifications in review or under development

TNZ M/3 Notes Word is circulating that NZTA is looking at reviewing the TNZ M/3 specification (guidance notes) on Sub Base aggregate. At this stage the review is in the earliest of stages. For more information contact David Alabaster of NZTA.

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NOW**



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A member of the Fulton Hogan Group
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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



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 proactive communication.



Test Focus | The Scala Penetrometer



The dynamic cone penetrometer was invented by A.J. Scala and presented at a conference in Australia in the 1956. It was developed to be a simple and rapid in-situ test for subgrade investigations. Since then it has been adopted as a standard method to measure pavement strength and variation with depth.

The DCP invented by Scala is still the same we use today with the exception that the units are now metric: the 9kg (20lb) hammer dropping 508mm (20 inches) with a 16mmØ (5/8 inch) rod driving a 30° angle cone.

Scala determined a correlation between the DCP results and the California Bearing Ratio (CBR), which is still widely used.

Special Features

Great at finding water pipes and creating a water feature.

If you do not have a services locator it can generally find a power cable or phone line.

- There is a small exclusive Scala Club who go through a ritual of removing their finger tips by placing their finger between the anvil and falling weight.
- The people who back hammer scala rods out of the ground usually find the weakest link - between the thread and the rod. This method is not recommended, but is appreciated by Scala penetrometer manufacturers.
- Scala penetrometers work best in summer, especially if the soil is allowed to dry out – warning do not perform retests in these areas in winter, because for some reason it seems to soften.
- Scalas are great at finding competent ground, every time another rod and adaptor is screwed on, the penetration rate slows and the ground seems to get stronger.

Thanks go out to Steve Anderson of Geotechnics for preparing this article

There is a small exclusive “Scala Club” who go through a ritual of removing their finger tips by placing their finger between the anvil and falling weight.



From the editor...

We're always on the lookout for something interesting for this part of the newsletter. If you have any relevant articles that relate to testing then fire 'em through to...

info@cetanz.org.nz

[illegible]

2 This acid does not like glass.
5 Pascal with a small p is the unit for this.
6 Special table used in chemistry lessons.
8 Has lots of Monomers.
9 This common 'blue' Thiazine dye is used
as a bacteriological stain as well.
10 Sometimes confused with Porosity but
not related.
11 Crystalline form of 'C'.
13 Spreading of a wave (eg. light) in
physics.
15 Commonly a suspension of one liquid in
another.
16 Device used for measuring pressure.
21 name of SI unit for energy, work, heat.
22 This speeds up reactions without being
consumed.
23 Radioactive non metallic gas.

1 Simply, this effect is proportional to the
force in a straight line.
3 Sticky artificial or natural polymer.
4 The p in pH.
7 Heat transfer in a fluid such as liquid or
gas.
12 This paper is used to test alkalinity or
acidity.
14 This condition prevents decomposition in
peat bogs etc.
17 Diffusion of a solvent across a
semi-permeable membrane.
18 In short the study of interrelationships
between environment and organisms.
19 Uncharged particle in the nuclei.
20 Sir Isaac *****

[illegible]