



# CETANZ

Civil Engineering Testing Association of New Zealand

## CETANewZ

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# COMMITTEE CHAIR UPDATE



*Danny Wyatt*

Kia Ora

At the time of writing, the first budget from the incoming government has been presented, and the Winter Solstice for 2024 has been and gone. New Zealand has seen a general slowdown in business. Anecdotally, multiple ongoing sales in the retail sector, while good for bargains, are not indicative of a booming economy.

This budget appears to have focused on cost-cutting, and although there is an extensive list of new Roads of National Significance (RONS) and Roads of Regional Significance (RORS), some large recovery projects have had their funding cut significantly. The good news is that these large road projects will likely come online for testing businesses in the 3rd or 4th quarter, which is also when a slight upturn from the current situation is predicted. If this doesn't occur, we are likely to start losing employees that are heading to Aussie to join Ray-Gun in a dance battle.

We are now over halfway through 2024 and have seen some great progress in testing method restructures and documentation pushing through the pipeline.

Our Careers & Events team is gearing up for conference planning mode, preparing for the CETANZ Bi-annual Conference in 2025. Recent training courses and networking events have been successful, with more planned for Hamilton, Tauranga, and Christchurch. We're also enhancing member experience with a members-only webpage and exploring opportunities to increase CETANZ's industry visibility.

The Technical Group is busy ensuring the construction materials industry has up-to-date and reliable testing standards. Recent efforts include developing a standard for imported materials, updating testing standards like M/4, addressing inconsistencies in T19 & T20, and planning proficiency testing programs. They're also working on revised testing methods, adopting new technologies, and creating training videos.

The update to M/4 is now live, providing a range of material quality classes and introducing a statistical process control approach for compliance. Our Technical Group has been actively addressing testing issues, encouraging ongoing proficiency testing to identify gaps in methods and specifications.

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A recent workshop tackled the issue of undue influence in the industry, raising valuable points for a future solution. The completion of TG6 is also a positive step, enhancing the reliability and confidence in CPT results. Visit our website for more information and a list of accredited companies adhering to ISO22476-1 using TG6.

We look forward to seeing what the second half of the year brings and will continue to keep you updated on industry developments.

## TECHNICAL GROUP UPDATE



The CETANZ Technical Group is busy ensuring the construction materials industry has the most up-to-date and reliable testing standards. Here's a look at some of their recent efforts:

- **Keeping Imported Materials Up to Standard:** The group is focused on making sure materials coming from overseas meet the same rigorous testing requirements as those produced domestically.
- **M/4 Specification Review Progresses:** The review of this important testing standard is ongoing, with considerations for including ethylene glycol testing and addressing concerns about oven emissions.
- **Addressing Inconsistencies in T19 & T20:** Inconsistencies were identified in how these standards calculate results. The group is working with NZTA to ensure clear and consistent calculations.
- **Proficiency Testing Gears Up:** Plans are in place to relaunch proficiency testing programs for concrete cylinders, ITS, and asphalt, allowing labs to benchmark their accuracy.
- **Revised Vibrating Hammer Test on the Horizon:** Waka Kotahi is revising the vibrating hammer test method, specifying allowed hammers and providing calibration procedures for improved testing.
- **T24 Review Aims for Faster Testing:** The time it takes to perform T24 tests on stabilized materials is being addressed. A revised methodology is expected soon, streamlining the process.
- **Non-nuclear Density Meters for Asphalt Testing:** While not yet suitable for all materials, non-nuclear meters are being adopted for asphalt density testing.
- **NZGS 2005 Update on the Watch List:** The group is keeping an eye on developments related to the revision of this standard.
- **Training Videos for AQA Sampling in Development:** The group is collaborating to create training videos on proper sampling procedures for AQA compliance.
- **Feedback Sought on CBR Case Study:** A case study on soaked CBR testing is under review for potential publication on the CETANZ website.
- **Ongoing Proficiency Testing Encouraged:** The group is working to establish a regular program for proficiency testing, allowing labs to continuously improve their accuracy.

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- Combating Undue Influence: The importance of educating technical staff on how to handle situations where clients may exert undue influence was highlighted.

The group also welcomes technical updates for the newsletter. If you have any relevant information to share, please contact [info@cetanz.org.nz](mailto:info@cetanz.org.nz)

## AGGREGATES LABS - T28 IS COMING



Portly Griffiths

Over the recent months NZTA have engaged the industry to improve the dreaded 4402:1986 4.1.3. Consultation with labs, engineers, consultants and anybody else that had an interest in improving one of our most uncertain methods led to NZTA funding an Interlab Study that was published this week. The report for the study can be found in the publications section of our website – [\[Link Here\]](#)

A lot of CETANZ members have played a major part in this and have also been in discussion with IANZ and NZTA as to how our labs can manage the changeover. Here's some notes that will help you to add NZTA T28 (currently v7.0) to your scope.

The IANZ assessment process for those with 4.1.3 on their scopes is outlined below:

### 1. Assessment Process:

- Desktop Assessments will be conducted for those with 4402:1986 test 4.1.3, except where an on-site assessment is pending, in which case the review will occur on-site.
- Records under review will include:
  - PT results and follow-up on any outliers
  - Photos of the overhead frame, footing, Hikoki H60MC hammer, and hour counter (for Desktop reviews), supported by purchasing records
  - Calibration/verification records for the hammer mass, clamp assembly, tamper, and foot dimensions
  - Updated worksheets and report templates, ensuring compliance with reporting and calculation changes

### 2. Recommendations:

- It is recommended that applicants have accreditation for NZS 4407 Part 2 sampling (2.4.6.3.2, 2.4.6.4, 2.4.7, 2.4.8), 3.1, 3.7, and 3.8.1, as referenced in T28. While some tests may be subcontracted, NZTA and IANZ encourage laboratories to maintain full scope accreditation where possible. These tests should be taken from the same sample.

### 3. Solid Density Scalping:

- NZTA T28 has the material scalped for testing at 26.5mm. This causes a departure from 4407 3.7.2 (pycnometer method) IANZ and NZTA have agreed that this is minor and the samples can be scalped at 26.5mm, as long as reports include a disclaimer for the departure from the standard method. No changes are required for 3.7.1. *Portly's view*

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here - research needs to be done on the soaking and drying times in the SD tests – different rock types absorption can't be the same. Has anyone done research into this?

4. The Future:

- The introduction and research for T28 has now put the compaction of other test methods into proven doubt. The ITS, UCS, vibe CBR and RLTs all use 4402 4.1.3 Work has already started on reviewing some of these test methods, but there's more to do. CETANZ members are collaborating closely with NZTA, NPTG, and IANZ, so expect more updates soon.

Our commitment to working closely with all stakeholders remains a priority to ensure the smooth implementation of these updates. Please do not hesitate to reach out for further clarification.

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## CAREERS & EVENTS GROUP UPDATE



Clark Yparraguirre

Our Careers & Events team is gearing up for conference planning mode, eager to bring our community together again for the CETANZ Bi-ennial Conference in 2025. It's hard to believe it's been a year since we last gathered at the Aukaha Resilience 2023 CETANZ Conference in Hamilton! Check out these memories from last year's event to get a taste of the excitement to come.



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Our recent Advanced Field and Laboratory Technician Course with Civiltrain was a huge success, with 20 attendees from the Auckland and Northland Region benefiting from Stuart Moulding's expertise. A huge thank you to Stu for sharing his knowledge and to Geotechnics - Auckland for hosting us!

We followed up this training with a networking event, enjoying great company over nibbles and drinks. We're thrilled to announce that we'll be repeating this successful combo in Hamilton for our Waikato tribe soon, with Tauranga and Christchurch next in line. Stay tuned for updates!



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Our team is working behind the scenes to enhance your member experience, including setting up a members-only page for exclusive content on our website and exploring opportunities with partners and agencies to increase CETANZ's visibility in industry-wide conferences and expos.

We welcome your contributions to our newsletters and LinkedIn posts. Share your health and safety tips, technical insights, or light-hearted moments with us!

And... we need your help! Do you have stunning photos of your field or lab work that could grace the cover of our next newsletter? Share your best shots with us, and you might just see them featured!

Let's keep the momentum going!

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# HEALTH & SAFETY UPDATE



## Near-Miss Incident: Scala Penetrometer Strike

### Incident Description

A team encountered a near-miss incident while conducting scala penetrometer testing. During the testing, a live 11kVA cable was accidentally struck, resulting in a brief electrical discharge. No injuries were reported.

### Contributing Factors

- Lack of Precautionary Measures: The team did not use appropriate tools to identify the cable's location before starting the testing.
- Non-Adherence to Permit Process: The Fulton Hogan permit process was not followed.
- Misguided Confidence in Cable Alignment: Previous potholing had indicated the cable's location, but it was not traced for its full alignment, leading to a false sense of security.
- Lack of Remarketing: The existing services were not remarked at the start of the stage 3 works.

### Recommendations

- Regular Remarketing: Cables should be remarked at the beginning of each stage of construction.
- Physical Verification of Services: Excavation should not begin until the services are physically proven at a specified frequency for alignment and depth.
- Clear Underground Cable Marking: Physical markers should be used onsite for underground high-voltage cables.
- Adherence to Permit Process: All team members must strictly follow the Life Saving Rule of always adhering to the permit process when required.
- Additional Training: Consider providing lab staff with training on Locating and Protecting Underground Services.

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# WAKA KOTAHI NZTA Update



Rob Damhuis

Waka Kotahi NZTA have progressively been updating their test methods and specifications. These include:

1. **NZTA T24: Procedure for carrying out Plateau Density Testing**  
Presently industry has not recognised procedure for carrying out the Plateau Density Test, resulting in each contractor carrying out their own version. The T24 procedure will fill this gap, and a collaborative effort between several tier 1 and 2 contractors has resulted in a robust compaction and testing procedure being developed. Presently the T24 procedure is being finalised for industry consultation.
2. **NZTA M04: 2024 Specification for Basecourse Aggregates**  
AQA approached NZTA to update the M04 specification to be more sustainable. They suggested multiple classifications for the M04 so that low volume roads and parking lots don't get designed using premium crushed aggregate which is becoming scarce in parts of New Zealand. NZTA then worked with the design and construction industry to update the specification, which has now been ratified and includes four M04 categories, Class 1 to Class 4, with Class 2 approximating the present M04 specification.
3. **NZTA T28: 2024 Test Method for the Determination of the Dry Density and Water Content Relationship of Aggregate**  
In collaboration with CETANZ, NZTA has revised the vibratory compaction procedure taking many of the testing issues previously identified in research reports to improve the uncertainty of the test method. Presently an interlaboratory testing programme is being undertaken to determine the repeatability and reproducibility of the amended method, and if the expected improvements are proven, and updated method will be published as an NZTA technical specification.
4. **NZTA T29: 2024 Procedure for the Random Selection of Test Sites Within a Lot**  
Several of the NZTA specifications require the use of a random sampling procedure, and the NZTA Z08 specification requires that both sampling and testing be IANZ accredited. NZTA however recognised that no random sampling methodology is available in New Zealand, resulting in a mixed bag of processes for identifying sampling points. The new procedure, based on an international random sampling method, uses the date and time to randomly locate the exact locations for sampling and/or testing. Presently the test method is in its final stages of development, after a collaborative effort with CETANZ and industry. Once finalised, it will consist of a test method and calculations sheet for industry use.

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# IN THE LIMELIGHT



## 20 YEAR ANNIVERSARY ROWAN CARLYLE

### Background and Introduction

*Can you tell us a bit about your background and how you got into our civil engineering testing?*

I come from Gisborne and lived there most of my early life apart from 2 year stints in Palmerston North and Auckland then 3 years overseas and now happily ensconced in New Plymouth. When I got back from overseas I was cooking in restaurants and was bored of it. My father ran the Gisborne WSP Lab and needed a hand so I helped him out during the day whilst cooking at nights I was 33 years old.

*What inspired you to pursue a career in civil engineering testing?*

After working for Dad for a few months I found I quite liked the mix of indoor and outdoor work and the fact that you had to use your brain a quite a bit.

*Did you need to be qualified - Where did you receive your education or qualifications?*

I left school with only middling school certificate results and had no other qualifications relevant to the field, so I learnt on the job and I had a great mentor in my Dad.

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## Career Highlights

What has been the most rewarding project or accomplishment in your career so far?

Managing the Auckland WSP Lab was probably the most challenging so far and very rewarding. To oversee up to 18 staff and doing it successfully whilst keeping the lab operating well under ISO 17025 auspices was very satisfying and exciting. As well as keeping the clients happy

Can you describe a particularly challenging project you worked on and how you overcame the obstacles?

Mt Messenger is currently underway and has its own unique challenges on the different parts of the project. One of them being the shotcrete trials. We were not prepared for just how many cores (hundreds and hundreds) would be coming into the laboratory and they all needed trimming and storing in temperate controlled baths. We purchased a good quality table saw and had shipping container bought into our yard, electrified and fitted out with baths which has alleviated any issues with cutting and storage.

## Industry Insight

What do you see as the biggest challenges currently facing the civil engineering and testing industry?

Getting staff who want to stay in the job for a long period of time and enhancing their knowledge of materials. The flow on affect being having people who are able to assist the industry and helping New Zealand get the most out of the resources we have for roading and other engineering projects.

What direction would you like to see the future of civil engineering testing go to?

I would like to see the industry more involved in the writing up sensible, relevant ITP's in construction contracts.

How do you think we could encourage more people to get involved in geosciences, civil testing and construction?

By having stalls at school careers expos and having dynamic people who are passionate about the industry to run those stalls. A bit of genuine enthusiasm can go a long way.

## Professional Insights

What are your favourite aspects of working in the industry?

Meeting the people on ground who are doing the grunt work and listening to their opinions on the job especially in regards to the behaviour of the materials they are working with especially if they have been in the industry for some time. Also seeing some of the amazing projects in progress and being in awe of how people have been able to figure that stuff out!! Also getting the opportunity to see some areas of New Zealand that people never normally get to.

What advice would you give to young professionals entering the field of civil engineering and testing?

Listen to the people who've been around the block so to speak and to keep an open mind.

What is your approach to problem-solving in your projects?

Keeping an open mind and reflecting on any suggestions that are made in regards to a problem no matter how they seem upon first listening to them.

## Personal Interests and Fun Facts

When you're not working, what do you enjoy doing in your free time?

Hanging out with my wife and kids and making music.



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Do you have any interesting hobbies or interests outside of your professional work?

I'm a musician (drummer foremost) and have a band called The Groundsmen and I release and play solo material under the moniker DtheBeat (check both out on [Spotify](#))

<https://open.spotify.com/artist/79kwzJYY4jQZ2qn93iJ1OR?si=NibNnkI6Q6WBMD0M8XdELw&nd=1&dlsi=9d01f2e88c0d44fc>



Can you share a fun fact about yourself that most people wouldn't know?

I'm a qualified touch typist (which is very handy indeed)!

# CPT STAKEHOLDER LETTER

Industry Update: Progress on Quality Assurance in CPT

In 2016, the CETANZ CPT working group was established to address quality assurance issues in the industry. We are pleased to report significant progress made by the working group, outlined in the attached letter.

To maintain and build on this progress, CETANZ recommends specifying and utilizing operators who are audited and compliant with the guidelines. We encourage all stakeholders to support this requirement and promote industry improvement.

You can find the full update and letter in the CETANZ website under Publications – [link here](#).

We invite you to share it with your networks and contact us with any queries.

## QUALIFICATIONS



<https://www.connexis.org.nz/civil-qualifications/>

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A graphic for a Civil Engineering Laboratory qualification. It features a background image of a yellow bulldozer on a construction site. In the foreground, a large, clear plastic bottle is being used as a sedimentation test, with a layer of sand at the bottom and a layer of water above. The text "Civil Engineering Laboratory" is written in a large, white, serif font. Below it, "Level 4" is written in a smaller, white, sans-serif font. Further down, there are icons for a magnifying glass, a checkmark, and a clock, followed by the text "NZQA #2692-2 | 77-83 Credits | 13-14 Months". At the bottom, it says "Recognised skills in civil engineering laboratory work." and "connexis.org.nz".

**Civil Engineering  
Laboratory**

Level 4

NZQA #2692-2 | 77-83 Credits | 13-14 Months

Recognised skills in civil engineering laboratory work.

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<https://www.connexis.org.nz/wp-content/uploads/2021/10/L4-Civil-Lab-Brochure.-TePukenga.pdf>

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## JUST THE JOB



Check out the Just The Job – Civil Engineering Lab video

<https://www.youtube.com/watch?v=IHYoa91NJsg>

## CALL FOR CONTENT

Do you have any site photos that's worthy of a CETANZ Newsletter cover? Submit it for review –

[info@cetanz.org.nz](mailto:info@cetanz.org.nz)