

Metrology and Calibration Newsletter

Issue 5

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Salam kepada semua!

Welcome to another issue, which I am writing on the second day after the clocks went forward. I hope you have all managed to get through it okay with a not-too-difficult Monday! (Click on the picture to watch a neat video: CGP Grey is one of my favourites!)



Please let me know if you would like to see any features or otherwise included in the newsletters. We were wondering if there is a desire to see 'IANZ tips', or similar information about IANZ assessments, what might be expected etc. See below for the first examples of these! As always, your feedback is appreciated.

I am also thinking of having a 'Focus on Criteria' type feature, semi-regularly, which would pick a clause from accreditation criteria (mainly ISO 17025, IANZ specific criteria) and 'explain' how you could apply or use it, or how IANZ might assess compliance with it. Let me know if you have any ideas for what to start off with!

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Steel mesh update (from Geoff Hallam)

Recently I asked Geoff, IANZ's Technical Development and Regulatory Affairs Manager, if he could provide some commentary on the 'steel issue' in New Zealand. He wrote for me the following.

There has recently been much publicity around the 'failure' of steel mesh used to reinforce concrete slabs. Journalists love emotive words like "failure"; the truth is generally more prosaic. As those in laboratory testing know, the numbers they

produce may be critically influenced by how samples are taken and exactly how tests are conducted. When these 'failures' were investigated it became apparent that the Standard was not entirely unambiguous. Work is on-going to clarify sampling and test methodologies and this should improve the consistency of results between different laboratories. Accreditation is part of the solution to this technical issue as accreditation assessments confirm understanding and implementation of Standards. A final consultation process is currently under way and the final guidance will be published as a revision to the Building Code B1 Structure Acceptable Solution B1/AS1 and Verification Method B1/VM1.

Technical fixes are generally achievable as a matter of consensus between practitioners. Other issues unearthed following the revelation of apparently sub-standard steel products are not so easy to fix.

Investigations have revealed widespread fraudulent paperwork provided with delivered products. These include certificates using the names and logos of legitimate, accredited, laboratories when the laboratories in question had never tested the product; certificates from accredited laboratories that had been 'edited' after issue; and legitimate test certificates bundled with product that did not relate to the samples tested.

This is the tip of the iceberg of an increasing problem for purchasers but also for laboratories, accreditation bodies and regulators.

[Thank you Geoff.]

IANZ tip #1: Presentation of Units

Let's start simple and general; this applies to everyone who uses units of measurement!

One of the most common things we find on endorsed calibration reports and in other records is incorrect representation of scientific units. This is relatively minor in

terms of assessment findings, and of course, whether you write 10kg or 10 kg the reader will probably know what you mean. However, correct use of the scientific units requires there to be a space between the unit and the measurement quantity, and there are 'right' and 'wrong' ways of writing unit symbols. Writing units consistently and correctly will aid in the professional presentation of your endorsed reports.

All units require a space between the quantity and the symbol, including degrees for temperature, but excluding plane angle degrees, minutes and seconds (for example 20° of arc but 20 °C for temperature).

For more information, see the [BIPM's specific page here](#). On the Downloads tab, you can download the whole (or parts of the) SI Brochure, including a credit-card sized 'wallet' guide.



IANZ tip #2: Endorsement rules

In Appendix 1 of the Procedures and Conditions of Accreditation, you will find the statement: "*The claims of IANZ accreditation can only be related to [...] the services covered by the scope of accreditation.*" What this means, generally, is that if results on a report are not covered by your scope i.e. you are not accredited for it, you cannot make claims via the report or any other means to be accredited for arriving at those results. In some cases a 'claim' to be accredited could be the accidental placement of an IANZ symbol or sticker.

Full details are in Appendix 1 of the PCA ([download here](#)). Have a quick read of it (it's only two pages) if you'd like to brush up on the rules for endorsement.

Introduction to the BIPM

The BIPM is the Bureau International des Poids et Mesures (roughly, the Bureau of Weights and Measures).



On their [website](#), BIPM state their mission as:

"...to ensure and promote the global comparability of measurements, including

providing a coherent international system of units for:

- *Scientific discovery and innovation;*
- *Industrial manufacturing and international trade;*
- *Sustaining the quality of life and the global environment.*

The unique role of the BIPM enables it to achieve its mission by developing the technical and organizational infrastructure of the International System of Units (SI) as the basis for the world-wide traceability of measurement results. This is achieved both through technical activities in its laboratories and through international coordination."

New Zealand is indeed a member state (more info [here](#)). The [CIPM](#) is the International Committee (*Comité international*) for Weights and Measures and there are consultative committees for different areas of metrology within the CIPM (two examples are, Acoustic, Ultrasound and Vibration CCAUV, Mass and Related Quantities CCM). These committees meet yearly and are made up of 18 individuals from different countries. One example of New Zealand involvement is Dr Rod White, from MSL, being on the CCT Working Group for Contact Thermometry (CCT-WG-CTh).

The BIPM website has further information about the CIPM and much more.

Fun Bits and Internet Stuff

- Greg Reid, who works in MSL mass standards, has [just returned](#) from representing NZ in the Rio de Janeiro Paralympics!
- An IANZ accredited laboratory features "[Rock Star](#)" metrologists on their website;
- NIST, which is like the American version of MSL, have had for some time their "SI Superheroes" aimed at kids but neat for us too! You can meet them [here](#), and there are also videos on the site (and YouTube).
- A [time lapse](#) of slime mould!

Sehingga masa akan datang ...

