

Everything you wanted to know about Calibrations but were afraid to ask!

What's the Difference between Calibration, Adjustment & Certification?

- A test certificate or certification is a report of results of measurements made during a calibration process.
- Calibration is the process of checking an instrument and validating it against reference standards or equipment.
- An adjustment is made to improve the accuracy of equipment if an 'As Found' Calibration shows that the instrument is out of specification.

What does Uncertainty Mean?

- All IANZ laboratories will issue an uncertainty clause in their Test Report
- The customer's instrument will have its uncertainty calculated so that the user knows what range any measurements lie within.
- A ruler has an uncertainty of ± 0.2 mm. If an item measures 100 mm, the user can then be 95% confident that his item will actually measure somewhere between 99.8 mm and 100.2 mm

What's all the Buzz About an Ice Point?

- The reason auditors encourage ice points is you can measure 0.0 °C quite accurately without expensive equipment. And it's not difficult to do.
- Usually if the zero point on a thermometer is accurate – then it is likely other points measured by the thermometer will also be accurate.
- Over time if your ice point drifts or changes you know there is something wrong with your thermometer or probe.
- If you want to learn how - check out this link:
<http://msl.irl.cri.nz/sites/all/files/training-manuals/TG01-July-2009.pdf>
- Ideally you should do an ice point on your temperature equipment between IANZ certifications, at regular intervals throughout the year.

When Should I Apply Corrections & How?

- All IANZ labs will provide corrections in their reports. Corrections are added to any measurement you make using your instrument.
- Choose the correction that is closest to the measurement you have made.
- If your thermometer is reading 68 °C and the correction at 70 °C on the IANZ report is -0.4 °C then your thermometer is reading 67.6 °C (\pm the uncertainty).
- Always use corrections when you require better accuracy.

Examples of Calibration:

- A production company for an international food corporation was having the instruments on their line calibrated by a local 'lab'. The local lab did not have the expertise to calibrate their equipment correctly and unbeknown to them their instrument was reading 15% lower than actual. The 12 months following correct IANZ calibrations, the plant were ecstatic and noted that there had not been one unplanned production stoppage in the preceding 12 months. Previously their equipment had been running 'hot' and nobody knew!

- A cool store had been getting their thermocouples checked by a local outfit who used the electrical simulation technique – this checked their digital display was accurate but did not test the actual temperature probe. IANZ on site specialists were called in when a new supervisor was employed. The stores temperature controlling equipment was tested using the comparison method utilising IANZ certified reference probes. It was found that the store had been running over 5 °C colder than what was required. The energy savings alone paid for the calibration in less than four weeks.

Reasons for calibrations include:

- Regulations: Someone tells us we must. E.g. local body, NZ government food regulations or it's a part of your quality management system (QMS).
- Our process is critical. We should ask ourselves why we measure. If this part of our process is critical to product uniformity, personnel or machinery safety, product quality etc. then accurate, reliable measurement is imperative.
- Market Advantage. Usually a company will require a QMS to enjoy brand trust & quality of product recognition.

Who do you get to perform your Calibrations?

- Internal qualified staff that are competently trained and have certified reference equipment.
- Outsourced to an IANZ accredited laboratory. Call Homershams Laboratory now on 0800 659 888

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January 2012

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