



World Meteorological Organization

Weather • Climate • Water

Traceability of the calibration
certificate
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Traceability of the calibration certificate: **ISO 9001 Clause 7.6** Control of monitoring and measuring equipment

- What monitoring and measurement is to be undertaken?
- Which monitoring and measurement equipment is needed to provide evidence of conformity of product to determined requirements.

To ensure valid results, measuring equipment shall:

1. Be calibrated or verified, or both, at specified intervals, or prior to use, against measurements standards traceable to **international** or **national** measurement standards
2. Be adjusted or re-adjusted as necessary
3. Have **identification** in order to determine calibration status.

Records of the results of calibration and verification shall be maintained (*preferably in an equipment file*)

Definitions

Monitoring implies observation and supervision activities (using monitoring equipment) over a period of time. *(For service organization, (e.g Met service provider, schools) typical methods of monitoring may include the use of monitoring equipment, questionnaires, test sheets, telephone or internet surveys). Monitoring equipment can be validated but may not be calibrated)*

Measurement considers the determination of a quantity, magnitude or dimension, by using measuring equipment. *(The use of measuring equipment (e.g measuring tape) will deliver a value of a quantity, whereas the use of monitoring equipment (e.g. survey questionnaire) could deliver non-quantitative results. Measuring equipment is or can be calibrated or verified or both.*

Calibration

- Calibration is the process of **comparing** your measuring equipment **against a reference standard** to determine how accurate it is and whether or not it is still capable of meeting the accuracy required for the measurement made with it. *(The underlined portion is where traceability comes in)*
- You need to establish what reference the **reference standard** is going to be

A reference standard

- A reference standard might be provided with the measuring equipment or in other instances, to get access to a suitable reference standard you might need to buy one or use a calibration laboratory. For a reference standard to have **validity**, it needs to be **traceable back to an appropriate recognized national or international standard**.
- If you decide to carry out your own calibrations, you will need to have procedures for calibrating each type of measuring equipment well documented and showing the standard one used for comparing. You will also need to have a label.

In addition to calibrating any measuring equipment, records need to be kept to show:

- 1. When the equipment was **last calibrated**, by who, the procedure used, acceptance criteria etc
- 2. When **next calibration** is due , this period depends on the type of measuring equipment, its usage and how critical the measurements are for control of a process or for verification of product conformity to requirements

Most important

1. You must know and be able to show what and where your reference standard is!
2. Have a calibration process in your Quality Manual
3. Self calibration must be done by competent people/technicians (*with certificates in their personal files*)
4. Maintain a file for all equipments at the main office where calibration records are kept!



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Thank you for your attention

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