

**CALIBRATION OF THERMOMETER & GLASSWARE
(ISO/IEC 17020, ISO/IEC 17025, ISO/IEC 17043, ISO 15189)**

1. Reference Thermometers

- 1.1 Laboratories shall possess reference thermometer(s) that cover the range in question.
- 1.2 The laboratory(s) reference thermometer(s) shall be traceably calibrated. The calibration shall be carried out by National Physical and Standards Laboratory or by an accredited calibration laboratory body.
- 1.3 The laboratory(s) reference thermometer(s) shall only be used for control of the laboratory(s); operational thermometer and not be in daily operational use.
- 1.4 The Laboratory(s) reference thermometer shall be calibrated in accordance with the requirements in Section 1.2 according to a set timetable. Liquid-in-glass thermometers will normally have a calibration interval of five years and thermocouples two years.

2. Operational Thermometers

- 2.1 Thermometers used in daily operation shall be controlled against a reference thermometer with accuracy and a range suiting the actual operational thermometer. There shall exist written routines for control of an operational thermometer against the reference thermometer where action criteria are specified. The results of controls shall be documented.

3. External Control of Thermometers

- 3.1 In cases where laboratories do not perform control of operational thermometers themselves (ref. Section 2.1), but have this work carried out by other departments within the same organisation or by an external firm, the laboratory shall at least ensure that:
 - i. the procedure used is approved by PNAC;
 - ii. the laboratory has the result of the control and has routines for evaluating this;
 - iii. the laboratory has copies of relevant calibration certificates for the reference normals used in the control;
 - iv. the internal revision also contains control procedures and those that carry out the control of the thermometers.

4. Calibration of Glassware:

The CABs shall use certified Class/Grade A type glassware and calibration would be required after 5 years of first use. However, verification would be required based on the use of the glassware. In case of all other Classes/Grades, calibration is required.

Reference:

For all internal calibrations PNAC policy G-02/15 shall be applied.