




**CALIBRATION OF WEIGHING MACHINES AND WEIGHTS
(ISO/IEC 17020, ISO/IEC 17025, ISO/IEC 17043, ISO 15189)**

1. Weighing Machines

- 1.1 Weighing machines shall be traceably calibrated. The calibration shall be carried out by a calibration laboratory that is accredited by Pakistan National Accreditation Council (PNAC) or by an internationally accepted accreditation body.
- 1.2 Weighing machines shall always be calibrated after a service, or at least once per year. The calibration shall be documented by a calibration certificate.
- 1.3 Between calibrations, the weighing machine shall be checked regularly by the use of control weights. At least two control weights should be used. If there is only one weight, this should have a mass close to the mass that the weighing machine are normally used for. If there are two control weights, then one shall have a mass in the upper end of the weighing scale, while the other shall have a mass close to mass the weighing machine is normally used for. The laboratory shall have written routines where action criteria are specified. The result of the control shall be documented.
- 1.4 In the daily use the weighing machine shall be checked according to set procedures where action criteria are well defined. The results of controls shall be documented.
- 1.5 Assuming the laboratory has the necessary competence, internal calibration of the weighing machines may be accepted, after agreement with PNAC. In such cases, an approved procedure for the calibration shall exist.

2. Control Weights

- 2.1 The quality of control weights (ref. section 1.3) shall be adjusted to the accuracy of the actual measurements.
- 2.2 Calibration of the control weights shall be documented with calibration certificates that satisfy the requirements of traceability mentioned above. The control weights may, however, be weighed on newly calibrated weighing machines.
- 2.3 Calibration intervals will normally be one or two years depending on the quality of the control weights, frequency of use and requirements of accuracy. The calibration interval is set according to the laboratory's experience with stability of the control weights.

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3. External Control of Weights

3.1 In cases where laboratories do not perform control of weights themselves (ref. section 1.3), 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:

- the procedure used is approved by PNAC;
- the laboratory has the result of the control of relevant calibration certificates for the reference normals used in the control;
- the laboratory has copies of relevant calibration certificates for the reference normals used in the control;
- the internal revision also contains control procedures and those that carry out the control of the weights.