



Specific Accreditation Criteria

ISO/IEC 17025 Application Document Calibration - Annex

Dimensional metrology

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Dimensional metrology

Purpose

In addition to the *ISO/IEC 17025 Standard Application Document (SAD)* and the accompanying Calibration - Appendix, this document provides interpretative criteria and recommendations for dimensional metrology for both applicant and accredited facilities.

Facilities must comply with all relevant documents in the NATA Accreditation Criteria (NAC) package for Calibration (refer to *NATA Procedures for Accreditation*).

For ease of use and to avoid fragmentation of the information, the relevant clause numbers of ISO/IEC 17025 have not been included.

Criteria and recommendations applicable to all types of dimensional measurements

Facilities must be familiar with the filtering characteristics of the reference instruments they use. The potential loss or distortion of captured information must be considered when selecting filter settings as well as their effect on any time-related phenomena.

Records of these settings must be retained and/or be specified in the calibration or testing procedures.

In roundness measurement, significant differences in results can occur on test items with certain irregularities depending on the filter type and cut-off value selected. Facilities should normally default to a low level of filtering for high quality surfaces (e.g. 1:500 UPR).

Ideally, all measurements will be carried out under static conditions, however in some force measurements where test machines have limited control or creep effects are occurring, different filtering (indicator averaging and update rates) used on the test and reference instruments can introduce errors into the measurements.

Ultrasonic thickness gauges

As accuracy of an ultrasonic thickness gauge is highly related to the material to be measured and the speed of sound in this material, the calibration report must include the information regarding the reference material and the speed of sound applied.

For example:

The thickness gauge was calibrated using stainless steel gauge blocks and the speed of sound set at 5790 m/s. The temperature during calibration was 20°C ±1°C.

References

This section lists publications referenced in this document. The year of publication is not included as it is expected that only current versions of the references shall be used.

Standards

ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories

NATA Publications

NATA Accreditation Criteria (NAC) package for Calibration

General Accreditation Criteria ISO/IEC 17025 Standard Application Document

Specific Accreditation Criteria ISO/IEC 17025 Standard Application Document, Calibration - Appendix

Amendment table

The table below provides a summary of changes made to the document with this issue.

Section or Clause	Amendment
Ultrasonic thickness gauges	New section covering reporting criteria for these devices.