



ISO 17025 Accredited Calibration Workflow - Sensor -> Verification -> Report

Version 2.0 - 2025-10-01

1) Pre-Job Setup

- Instruments: IEC 61672-1 Class 1 sound level meter, 1/2-inch microphone & preamplifier, IEC 60942 Class 1 acoustic calibrator.
- Calibration: ISO/IEC 17025 traceable certificates (as-found/as-left if applicable).
- Frequency coverage: Octave bands 63 Hz to 8 kHz (extend if spec requires).
- Project metadata: client, site, job ID, objectives, acceptance criteria.

2) Sensor - Lab/Bench Stage

- Identify assets & serials; record calibration dates, uncertainties, and lab accreditation numbers.
- Verify microphone sensitivity & linearity within tolerance.
- Prepare job kit: windscreen, tripod, GPS/notes, spare batteries, weather log.

3) On-Site Verification

- Field check at start and end (94 or 114 dB @ 1 kHz). Record ambient temperature, humidity, and wind.
- Drift limit: ≤ 0.3 dB (flag if exceeded and repeat runs).
- Setup: mic height/position per method statement; wind < 5 m/s; avoid reflections < 1 m.

4) Measurement & Logging

- Record L_{eq} , L_{max} , L_n ($L_{10}/L_{50}/L_{90}$), octave-band levels; use Z or A weighting per spec.
- Duration & repeatability: per contract (e.g., ≥ 15 min per location; ≥ 3 repeats).
- Annotate events; capture photos; note distances and barriers/attenuators.

5) Reporting (Compliance-Ready)

- Structure: Executive summary -> Methods (standards, instrumentation, uncertainties) -> Results (octave-band & overall) -> Criteria comparison -> Recommendations.
- Attachments: calibration certificates, raw data (CSV/XLS), photos, site map.
- Data room: provide client access for audit trail.

6) QA / Sign-off

- Independent review checklist; version control (v#, date, author, reviewer).
- Non-conformities & corrective actions logged.
- Retention: raw data ≥ 5 years (or per contract).

Check	Threshold / Note
Field calibrator drift	≤ 0.3 dB between start & end
Wind speed during runs	< 5 m/s (or as spec)
Mic height / distance	Per method statement; document variances
Uncertainty statement	Include combined expanded uncertainty ($k=2$)

