

* Clause 6: Measurement Procedure

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- * **6.1 Field calibration check**
- * **6.2 Measurement locations**
- * **6.3 Precautions against interference**
- * **6.4 Weather conditions**

6.1 Field Calibration Check



6.1 Field Calibration Check

Key Changes:

- Is a “field calibration check”, not a calibration
- Sets the acceptable drift to $\pm 0.5\text{dB}$ for attended measurements
- The drift can exceed $\pm 0.5\text{dB}$ for long period monitoring (more than a few days)
- If the drift exceeds $\pm 1\text{dB}$ you should investigate why this has happened
- Any drift beyond these limits results in your data being questionable, and should only be used with great caution.

Modern SLMs are very stable and shouldn't drift this much

6.1 Field Calibration Check

- 1) At the end of a **short** (e.g. 1 hour) attended measurement:
 - $<\pm 0.6\text{dB}$: Use the data without question
(but I would be cautious and investigate if more than $\pm 0.3\text{dB}$)
 - $\pm 0.6\text{dB}$: The data can be used with caution. The error should be investigated, reported, and the uncertainty carried through to the conclusions. This could indicate a fault with the SLM or calibrator.

6.1 Field Calibration Check

- 2) At the end of a **long** (e.g. 1 week) unattended measurement:
- $< \pm 0.6\text{dB}$: Use the data without question
(but I would be cautious and investigate if more than $\pm 0.5\text{dB}$)
 - $\pm 0.6\text{dB}$ to $\pm 1\text{dB}$: Use the data with some caution and investigate the cause of the drift
 - $\pm 1\text{dB}$ \rightarrow the data can be used with great caution. The error should be investigated, reported, and the uncertainty carried through to the conclusions. This could indicate a fault with the SLM or calibrator.

6.1 Field Calibration Check

Dramatically altering the SLM offset at the first calibration check can result in an unacceptable drift at the final check

Instead:

- Check the calibrator coupling
- Allow more time for the pressure inside the coupling to settle
- Disconnect and reconnect the microphone etc
- Check the batteries in the calibrator
- Consider any changes in the weather conditions (particularly the atmospheric pressure)

6.2 Measurement Locations



6.2 Measurement Location

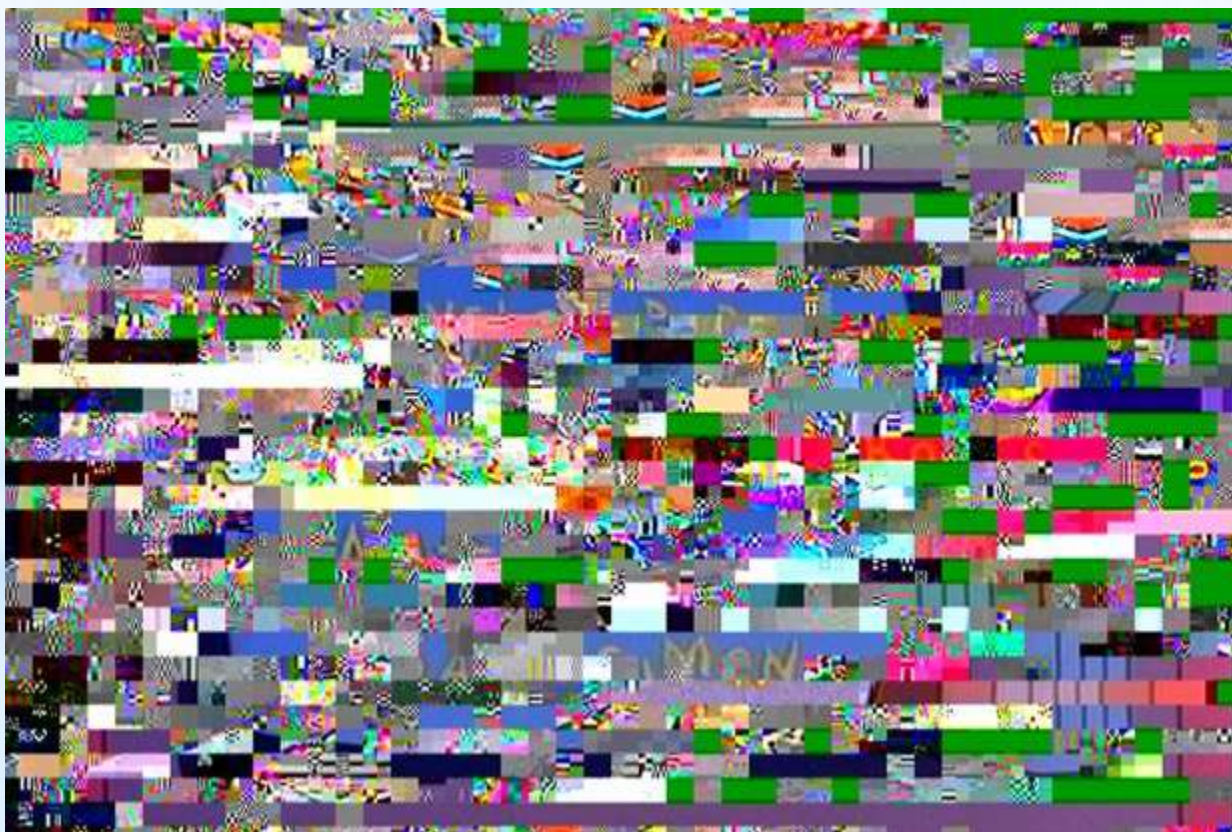
Facades:

- Formalises the 3dB facade correction factor
- Also allows for a 1-2dB facade correction factor for facades that are >1m away or are not perpendicular to the sound pathway

So long as your ambient and residual measurements are taken under the same conditions, the presence of a facade should make little or no difference.

- Removes the requirement that that measurements have to be made at a residential locations (i.e. can be made at **proposed** residential locations, as well as at surrogate monitoring locations)

6.3 Interference



6.3 Interference

Very little change from BS4142:1997

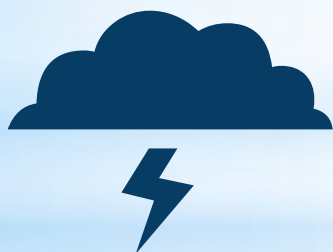
Minimise the risk of:

- Wind induced microphone noise
- Rain noise
- Electrical and EMF

- Now includes temperature

More detail on weather conditions is given in section 6.4

6.4 Weather conditions



6.4 Weather Conditions

Substantially changed from BS4142:1997

- Wind speed (using an anemometer)
- Wind direction
- Cloud cover (oktas)
- Rainfall
- Temperature (beginning and end)



Must be measured at the monitoring location. Not weather forecasts, or data from other locations.

6.4 Weather Conditions

- For long-term unattended measurements use a logging weather stations
- A logging anemometer alone is not enough
- The anemometer needs to be close to the microphone position and at the microphone height to be able to identify the risk of wind-induced microphone noise.



6.4 Weather Conditions

- Use a wind-shield that is effective for the expected wind speeds
- Even though oversize or double wind-shields can be effective at reducing wind induced microphone noise at speeds $>5\text{m/s}$, high winds will still result in atypical foliage and turbulence noise that shouldn't be part of the measurement.



A microscopic view of several cells, likely yeast or bacteria, showing their internal structures. The cells are stained in shades of blue and green. Several question marks are overlaid on the image, suggesting a focus on inquiry or questions.

Any Questions?