

SOP for periodic repeatability tests (routine tests)

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General

Basic rules for using scales

- Before using a scale, make sure the scale power was switched on for a sufficient period of time (mentioned in the scale operating instructions).
- Make sure the scale is leveled.
- Minimize environmental influences, e.g. open windows, vibrations, temperature changes or strong drafts.
- Place objects gently on the scale platform.

Basic rules for handling weights

Test weights

- Only commercial test weights with up to date calibration certificates can be used for certifying the "traceability" of scale equipment.
- Test weights should always be placed gently on a clean scale platform and returned immediately in their storage place after use.
- Test weights (since they are also part of measuring equipment) need to be re-calibrated at specified intervals (ISO 9001).
- Any incident, which might have affected the value of the test weight, should trigger an immediate re-calibration. METTLER TOLEDO calibration services can offer a recommendation.
- Test weights should be protected from shocks, scratches, dirt and any other external influence that might degrade their integrity.

How to store test weights

- Test weights should be stored in their original box.
- Test weights should be stored in a clean and dry room.

How to move weights

- Small test weights should only be handled with appropriate tools such as forks or handles (see METTLER TOLEDO's accessories for weights).
- Always use care when handling test weights, to avoid possible contamination or damage.

Repeatability test

Preparation

- Before performing the test, the test weight must be acclimatized to the ambient temperature of the scale.
- Prepare a sheet where you can note the readings of the repeatability test points. Prepare 3 columns titled "w/o Test Wght.", "With Test Wght." and "Differences".

Test procedure

- Clear the scale platform
- If required, place tare load on the scale platform
- Tare the scale (if required)
- Read the stable value from the display and note it in the column "w/o Test Wght."
- Place the test weight in the center of the scale platform
- Read the stable value from the display and note it in the column "With Test Wght."
- Remove the test weight
- Repeat the measurements from "tare the scale" to "remove the test weight" until the defined number of "w/o Test Wght." and "With Test Wght." readings is performed

Evaluation

- Subtract each "w/o Test Wght." from the corresponding "With Test Wght." to calculate the difference.
- Calculate the standard deviation of the differences.
- Evaluate whether standard deviation exceeds the defined "Control limit" ¹⁾.

Deviation

Control limit ¹⁾

- If the control limit is exceeded, report the problem to the appropriate supervisor or the person responsible of the scale.
- Mark the scale as "out of control limits".
- Contact METTLER TOLEDO service organization for advice.

¹⁾ – Values within the control limit: No action is necessary.

– Values beyond the control limit show that weighing process is no longer under control and immediate action is therefore required.

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