

Gloss Meter Verification With Reference Tile

1.0 Maintenance Objective & Frequency

The objective of this procedure is to verify the accuracy of a gloss meter against a certified reference tile to ensure reliable and repeatable gloss readings. This verification detects drift, sensor contamination, or calibration errors that could lead to out-of-spec surface finishes. The procedure must be performed at the start of each shift, after any impact or drop, or whenever readings appear inconsistent.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** No electrical isolation required. The gloss meter is battery-powered and low voltage. Remove batteries if performing internal cleaning.
- **Chemical Safety:** Wear nitrile gloves when handling cleaning solvents to avoid skin contact.
- **PPE:** Safety glasses and nitrile gloves are mandatory when cleaning the reference tile or gloss meter optics.
- **Work Area:** Ensure the verification surface is clean, dry, and free of vibration or strong air currents that could affect readings.

3.0 Required Tools, Parts & Lubricants

- Certified gloss reference tile (high-gloss, typically 90+ GU, with current calibration certificate)
- Lint-free optical wipes (e.g., Kimwipes or microfiber cloth)
- Isopropyl alcohol (99% purity) in a squeeze bottle
- Compressed air duster (oil-free, moisture-free)
- Gloss meter under test (e.g., BYK Gardner micro-TRI-gloss, Elcometer 480, or equivalent)
- Calibration log sheet or digital CMMS (ServiceGrid) for recording results

4.0 Step-by-Step Maintenance Procedure

1. Power on the gloss meter and allow it to warm up for at least 5 minutes to stabilize the electronics.
2. Inspect the reference tile for scratches, chips, or contamination. If damaged, do not use; obtain a replacement tile with a valid calibration certificate.
3. Clean the reference tile surface using a lint-free optical wipe lightly moistened with isopropyl alcohol. Wipe in one direction only, then immediately dry with a dry optical wipe. Avoid rubbing.
4. Clean the gloss meter measurement aperture using compressed air duster to remove dust or debris. If residue remains, gently wipe the aperture rim with a dry lint-free wipe.
5. Place the gloss meter on the reference tile with the measurement aperture fully seated and centered on the tile surface. Ensure no gaps or tilting.
6. Press the measurement button to take a reading. Record the displayed gloss value in GU (gloss units) on the calibration log or directly into ServiceGrid.

7. Repeat the measurement at least three times, lifting and repositioning the meter between each reading to verify repeatability. Record all values.
8. Calculate the average of the three readings. Compare this average to the certified value printed on the reference tile (e.g., 92.5 GU). The acceptable tolerance is ± 1.0 GU for high-gloss tiles (above 80 GU) or as specified by the tile manufacturer.
9. If the average reading falls outside the acceptable tolerance, perform a full calibration adjustment per the gloss meter manufacturer's instructions. If the meter cannot be adjusted to within tolerance, tag it as 'Out of Calibration' and remove from service.
10. If the average reading is within tolerance, record the pass status, date, technician name, and next due date in the calibration log or CMMS.

5.0 Verification & Return to Service

1. After a successful verification, clean the reference tile again with isopropyl alcohol and store it in its protective case away from direct sunlight and temperature extremes.
2. Perform a quick verification on a known production sample (e.g., a standard panel) to confirm the gloss meter reads consistently with historical values.
3. If the meter passed verification, it is cleared for production use. Attach a 'Calibration Verified' sticker with the date and technician initials if required by your quality system.
4. Sign off on the PM work order in ServiceGrid, attaching the recorded readings and any notes about the verification.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.