



Latent Print Section

Equipment Maintenance & Performance Checks

Comparative & Analytical Division



1. Equipment Maintenance and Performance Checks

1.1 Scope

- 1.1.1 This procedure details the requirements for the maintenance and performance checks of the equipment used by the Latent Print Section of the Houston Forensic Science Center (HFSC).

1.2 Procedure

- 1.2.1 Before being placed into service, equipment is validated or performance checked to ensure it meets the testing/analysis requirements.
- 1.2.2 Disposable equipment, if used, shall be used one-time only, unless otherwise stated in the standard operating procedure.
- 1.2.3 In accordance with the HFSC Quality Manual, critical equipment is any piece of equipment that must be maintained in proper working order to ensure the reliability of results produced using it.
- 1.2.4 Manuals, instructions, and other documents necessary for proper operation of equipment will be stored with the equipment or in an accessible location.
- 1.2.5 Equipment requiring periodic performance checks/validation will be uniquely identified and labeled so that records can be traced to the equipment.
- 1.2.6 All equipment shall be purchased from a reputable manufacturer or vendor.
- 1.2.7 Records associated with section equipment, where applicable and appropriate, should include the following:
 - Identity of the equipment and its software.
 - The manufacturer's name and serial number or other unique identifier.
 - Dates, results, and copies of reports and certificates of all calibrations, and due dates of next calibration or verification.
- 1.2.8 The following equipment does not require performance verification:
 - 1.2.8.1 General-Use/Volumetric Equipment – Visual exam and cleaning at time of use. No records are required.
 - 1.2.8.2 Scales – Scales are used for subsidiary measurements but have no effect on the accuracy or validity of the ACE-V methodology. Scales are not considered critical because they do not affect the scientific methodology of analysis and comparisons of latent impressions. A latent print needs to be able to be re-sized to 1:1 or near 1:1 for entry into AFIS. Adhesive and rigid scales for photography are sufficient and require no validation or performance check.
- 1.2.9 Equipment is performance checked according to the following schedule:
 - 1.2.9.1 Oven – Oven is checked before being placed into service to ensure it is working properly. Oven will be performance checked monthly and a log will be kept of the results. In addition, the oven is routinely used in the chemical processing of porous evidence and are inherently checked when controls are run during the reagent testing procedure.
 - 1.2.9.1.1 To performance check the oven, turn the oven on and let it heat to the preset operating temperature. Observe the temperature displayed on



the oven's external digital display and compare to the thermometer inside the oven. If the oven is operating within +/- 5°C, the oven is within tolerance. If the oven is outside of tolerance, refer to the operation manual to adjust the oven. If the oven cannot be adjusted, the Latent Print Manager must be notified to coordinate repairs. If the equipment is not performing correctly it will be labeled as out of service, along with the processors/examiners initials and date it was removed from service.

1.2.9.1.2 See manufacturer's operation manual for correct operation of the oven.

1.2.9.2 Balances and Weights – Balances are calibrated annually by an ISO/IEC 17025 accredited calibration laboratory. Weights are verified on these balances annually and a log is kept of the results. See additional requirements for performance checks below.

1.2.9.2.1 Balances – In accordance with the HFSC Quality Manual, balances will be performance checked at least once monthly and a log will be kept of the results. Balances are considered operational if the testing weight used is measured +/- 0.03 gram of the expected weight.

1.2.9.2.2 Weights – Verified weights can be used to performance check balances.

1.2.9.3 Fume Hoods and CA 9000 Superglue Chamber – Visual examination and function check at time of use. No records are required. Fume hoods and the CA 9000 Superglue Chamber are calibrated and maintained annually by an external ISO/IEC 17025 accredited calibration laboratory. Documentation of the service will be displayed on the external surface of the respective hood or superglue chamber.

1.2.9.4 Digital Imaging Equipment – If a scanner, digital camera, monitor, or photographic enhancement software isn't functioning properly it will be removed from service until it can be repaired/replaced.

1.3 References

SWGFAST, *Document 6, Standard for Friction Ridge Impression Digital Imaging (Latent/Tenprint)* Ver 2.0, 03/13/13.

Defense Forensic Science Center, *CILA LP 5.5 Equipment*, 11 March 2014.