Purpose: To obtain test impressions of patterns present on suspect item(s) for inter-comparison purposes with questioned imprint/impression.

Responsibility: Forensic Science Examiners assigned to the Imprint Unit are responsible to follow the guidance of this procedure.

Safety: All proper personal protection equipment will be used as appropriate.

Procedure:

Materials:

1. Fingerprint or printer's ink
2. Fingerprint powders/brushes/magnetic powder applicator
3. Backing board
4. Large transparent adhesive acetate lifters
5. Large white backed adhesive acetate lifters
6. Large black backed adhesive acetate lifters
7. Large transparent cover sheets
8. Large transparent gelatin lifters
9. Large white backed gelatin lifters
10. Large black backed gelatin lifters
11. BIO-FOAM®
12. MicroSil
13. Bubber
14. Inkless pad
15. Chart board/foam board

16. Petroleum jelly/clear shoe polish

17. Fixative Spray

18. Other, as needed

Procedure:

1. Conduct preliminary physical and, if necessary, microscopic review of evidence to determine appropriate test impression process to employ.

2. Photograph all items prior to processing.

3. Two-dimensional test impressions may be made by applying a thin layer of ink or fingerprint powder medium on the item (shoe outsole, tire, etc.) and transferring an imprint of that item onto an appropriate receiving medium (adhesive acetate lifter, gel lifter, foam board, etc.). Alternatively, a layer of petroleum jelly, clear shoe polish, etc. can be applied to the item and transferred to an appropriate receiving medium (foam board, paper, etc.). This clear imprint can be enhanced using fingerprint powders to make a test impression. Test impressions of tires should be made with the tire on the vehicle if possible.

   Test impressions of evidence that may be processed for DNA or may contain blood or other body fluids can be made using a magnetic powder applicator and magnetic fingerprint powder. The magnetic powder applicator can be cleaned before and after use utilizing a bleach solution in order to prevent contamination.

4. Three-dimensional test impressions can be made by impressing the shoe/tire into BIO-FOAM® or Bubber. This may be photographed using acceptable methods (See SOP-IM-4 Photography). Additionally, a cast may be made of the three-dimensional impression (See SOP-IM-6 Casting Impressions).

5. Other methods for making test impressions may be utilized as necessary.

6. Test impressions may photographed, scanned, photocopied, or otherwise documented.

Retention:

Test impressions will be packaged in an appropriate evidence container, sealed, sub-itemized in JusticeTrax, barcoded, and returned to the submitting agency along with the original evidence.

Quality Assurance:

When a chemical/reagent is utilized for the first time, the examiner opening/preparing the chemical or reagent will ensure that the container is properly labeled as to its contents, its safety information (NFPA or GHS) and the ability of the performance of the chemical/reagent (see section a. below). The examiner will also place the date opened/prepared and his/her initials on the container. Most chemicals/reagents are purchased as packaged kits.

Per GL-21 General Laboratory Equipment, chemicals/reagents are considered "equipment"as they can influence the correct performance of laboratory activities (i.e. creating test impressions or enhancment). The very first control test impression developed with a newly opened or prepared chemical/reagent will demonstrate the ability of the performance of that lot of chemical/reagent. A log will be kept of this control test impression. The log will include the chemical/reagent name, the date opened/prepared, the lot number, the initials of the analyst who opened/prepared it, if the control test impression was acceptable and the manufacturer's expiration date, if there is one. This information will be logged on the Reagent Log form (QR-IM Reagents/Chemicals). Once the chemical/reagent has been found to be acceptable, a colored dot will be initialed and dated and "OK" or "OK for use" will be written on it. This dot will be taped to the chemical/reagent bottle and will signify the chemical/reagent is okay to use.

Before any chemical/reagent is used, every analyst should check for this sticker. If it is not present, the above stated procedure must be followed.

Fingerprint or Printer's Ink Quality Control:

The quality control procedure for fingerprint/printer's ink will be to apply a small amount of this ink to a stamp and then transfer the impression to the surface such as paper. If the impression of the stamp is visible and legible, then the result is considered acceptable and this fingerprint/printer's ink is considered acceptable and this lot of fingerprint/printer's ink may be used in casework. The quality control will conducted once on the initial opening of the tube of ink. Once tested, that tube is considered acceptable for use in casework. If at any point, the ink appears to have hardened, the quality control should be repeated or a new tube should be opened and tested.

Powder and Cast Material Quality Control:

Please refer to IM-SOP-07 for the quality control procedure for magnetic powder and IM-SOP-06 for the quality control procedure for dental stone.

Sources of Error: N/A
Quality Assurance: N/A
References: See Bibliography.