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Lifting Prints Off Textured Surfaces with Gel Lint Rollers

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As a result, processing evidence and crime scenes for latent print evidence may involve the examination of textured surfaces. Unfortunately, textured surfaces can create problems with the recovery of fingerprint evidence.

Crime scene supply companies have developed and sell a number of products to assist in the recovery of print evidence from these textured surfaces, including an assortment of specialized tapes, epoxies, and gel lifters. These specialized tools are designed to reach into the nooks and crannies of the textured surface and draw out the ridge detail developed with fingerprint powder. Unfortunately, the cost of some of these products can range upwards of \$200. Today's economic environment is putting the pinch on individuals, institutions, and government entities alike. Investigators have to do more with less and not every department has the resources to provide investigators with the latest and greatest tools to recover fingerprint.

Since many latent print laboratories have a more resources to locate and recover difficult latent prints the best option is to collect the evidence. However, some items cannot always be recovered at the crime scene and taken to the latent print laboratory. Removing a burglary victim's front door or refrigerator would not make the home owner very happy, much less the investigator's evidence or property room supervisor. Consequently, crime scene investigators or police officers must process crime scenes and may or may not have the more expensive tools that are available to assist in recovering fingerprint evidence off textured surfaces.

Two main problems are created by textured surfaces. First, the textured pattern may be lifted from the surface along with the powder adhering to the fingerprint's ridge detail. The textured pattern can interfere with the clarity of the fingerprint and hinder the comparison process. Secondly, the powder adhering to the fingerprint's ridge detail in the valleys of the textured surface may be left behind by the lifting medium used to recover the print evidence. Therefore, the result is that an investigator either develops an incomplete latent print or the print is concealed by the pattern of the surface from which the print was lifted. The simple solution to this problem is to use a lifting medium that is able to reach down into the valleys and depressions of the textured surface and pull out the powdered fingerprint. As stated previously, there are specially designed tapes and epoxies that are able to reach into the fine crevices of a textured surface and in varying degrees of success, recover a fingerprint with enough detail to make a comparison. Additionally, gel lifters are designed to recover print evidence from a variety of surfaces. Although the gel lifters are not as expensive as some of the epoxy compounds, they are still much more expensive than standard fingerprint tape and they are a one-time use item, thus creating a further expense.

An effective and inexpensive solution is to use a reusable gel lint roller. These reusable gel lint rollers cost approximately \$5.00 each (Figure 1) and can be purchased off the Internet by simply searching for "reusable", "tapeless", or "gel lint roller". Although not as frequently as in the past, reusable or gel lint rollers can be found and purchased from one's neighborhood "Five and Dime" or drug store. These reusable lint rollers are designed to pick up lint and animal fur from clothing and upholstery. In addition,

when the roller is no longer able to pick up debris, it can be rinsed with water and a mild soap, allowed to air dry, and is good as new. Transforming this ingenious and inexpensive device into a fingerprint processing method is easily accomplished. The concept of using the gel roller is the same as using gel lifters or an epoxy compound, one is simply trying to have the recovery medium reach down into the nooks and crannies of the textured surface and pull out the powdered print without visualizing the patterned surface across the lifted fingerprint.

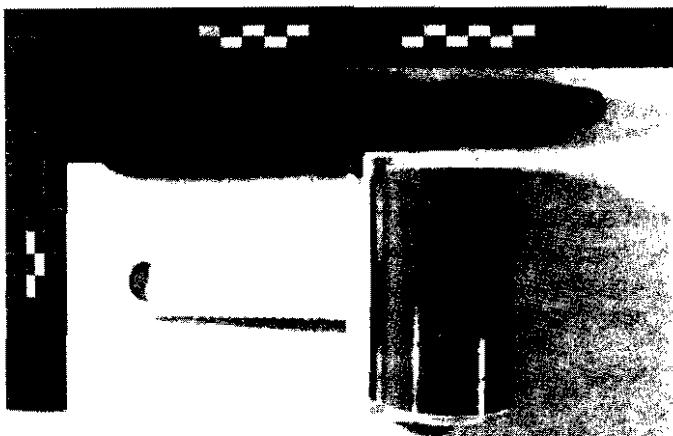


Figure 1: Two Common Types of Gel Lint Rollers

In addition to the gel roller, the investigator will need magnetic powder and fingerprint tape. A magnetic powder is a better choice because the magnetic powder is much easier to wash off the gel roller, whereas traditional powders have a tendency to stain the gel lifters over time. Standard fingerprint tape will be used to pull the latent print off of the gel roller. In addition transparency film, similar to the clear or transparent sheets of acetate once used to create documents for enlarging on an overhead projector, is advantageous. With this technique, lifting the print from the gel roller will reverse the print and the transparency film is used to return the print to its proper position.

The technique to lift fingerprint evidence from textured surfaces with a gel roller is quite easy. When an investigator is processing his or her crime scene for latent print evidence and comes upon a textured surface, he or she should use magnetic powder. Once the surface is powdered and the latent print is detected, a clean and dry gel roller is firmly pressed down onto the surface adjacent to the print. The roller is then slowly, but firmly, rolled across the print as seen in Figure 2. Figure 3 shows how easy the gel roller is able to remove the magnetic-powdered print from the surface. In order to remove the latent print from the gel roller, one needs to use standard fingerprint tape. Lifting a print from the gel roller is performed just like any other surface and is shown in Figure 4. At this stage, the lifted print is a reversal. It would be advantageous to affix the lifted print to a small piece of transparency film and then that film can be flipped over and adhered to a white index card for submission into evidence. It is possible for photo editing computer software to reverse the print, but reversing the print using transparency film eliminates the extra step of having to utilize a computer for image enhancement. Figure 5 illustrates the final result, a latent print lifted off a textured surface (block of raw wood) using a gel lint roller. As a review, the steps in recovering prints off of textured

surfaces are as follows:

- 1) Use magnetic powder to process the textured surface in question
- 2) Identify location of possible fingerprint evidence
- 3) Firmly press the reusable gel roller onto the surface and slowly roll across the processed print
- 4) Using standard fingerprint tape, lift the print off of the gel roller
- 5) Affix the lifted print to a piece of transparency film
- 6) Flip the transparency film upside down and adhere to a white index card
- 7) Mark the card with the case information and submit into evidence



Figure 2: Gel Roller is firmly and slowly rolled across the area containing the processed print.

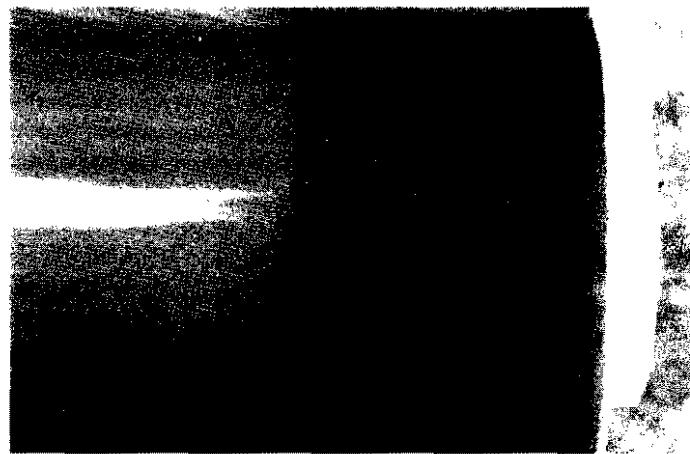


Figure 3: The magnetic powder print is visible on the gel roller

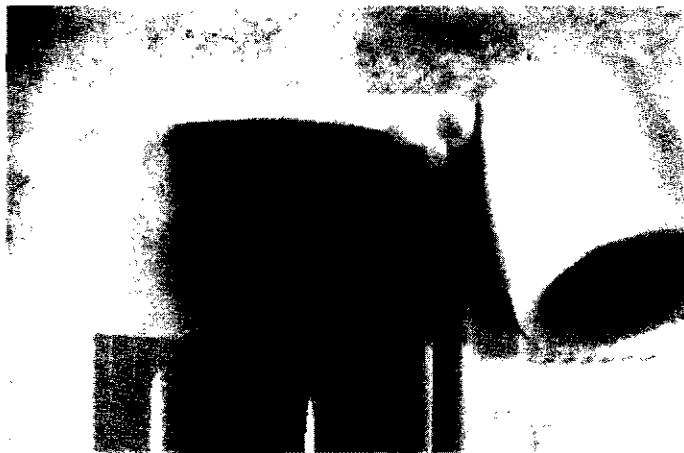


Figure 4: Standard fingerprint tape is used to lift the fingerprint from the gel roller.

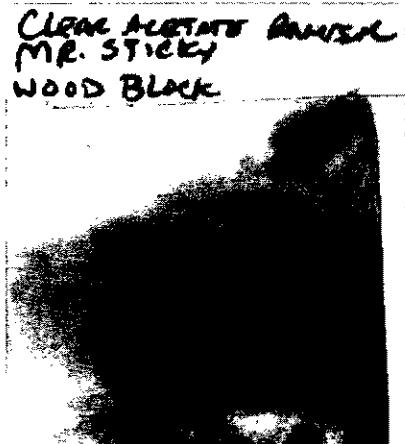


Figure 5: The fingerprint is affixed to piece of transparency film, turned upside-down, and adhered to a white index card.

An investigator can typically get three to four fingerprint lifts off of a gel roller before having to clean the roller. Gel rollers do come in a variety of sizes and the smaller ones typically have to be cleaned after each use, but the larger ones can be used several times before having to clean them. Cleaning the rollers is best accomplished with running water and a liquid soap. Once the gel roller is cleaned, shake off the loose water and allow the gel roller to dry. It would be advantageous for the investigator to have two rollers for larger surfaces so one roller could be used to process the scene for print evidence, while the second roller is allowed to air dry after washing. The drying time is not long, just a few minutes in most cases.

As stated before, there are some items that cannot be removed from the crime scene and tagged into evidence at the crime lab or property room. A refrigerator is one such example. The average refrigerator is too large to remove from someone's home and is known to possess some of the deepest textured surfaces found in a home. Figure 6 shows a side-by-side comparison of a standard tape lift and a latent print lifted with a gel roller. One can see how the texture of the refrigerator's surface interferes with a standard print lift, yet the gel roller was able to lift an identifiable fingerprint (Figure 6).



FIGURE 6: A tape lift and a gel lift from a refrigerator's door

Another item not easily removed from a crime scene is a wall. Certainly in more serious crimes, sections of walls can be cut out and tagged into evidence for processing; however, in most cases this is not feasible. The cost to repair the walls may well be more expensive than the property stolen in the first place. Figure 7 shows a side-by-side comparison of latent prints removed from a painted-drywall surface using standard fingerprint tape and the gel-roller technique.

HEAVILY TEXTURED WALL (PAINTED) TAPE LIFT GEL ROLLER



FIGURE 7: Comparison of a tape lift and gel-roller lift from painted drywall

Clearly, the use of a reusable gel roller has valuable applications in the field. However, it is not limited to use solely in the field. Even smaller items of evidence that could be transported to an investigator's laboratory can be processed using this technique. Oftentimes, smaller curved items are difficult to photograph and using this technique would be advantageous. Figures 8, 9, and 10 illustrate smaller surfaces where an inexpensive gel roller developed much clearer and identifiable fingerprint evidence.

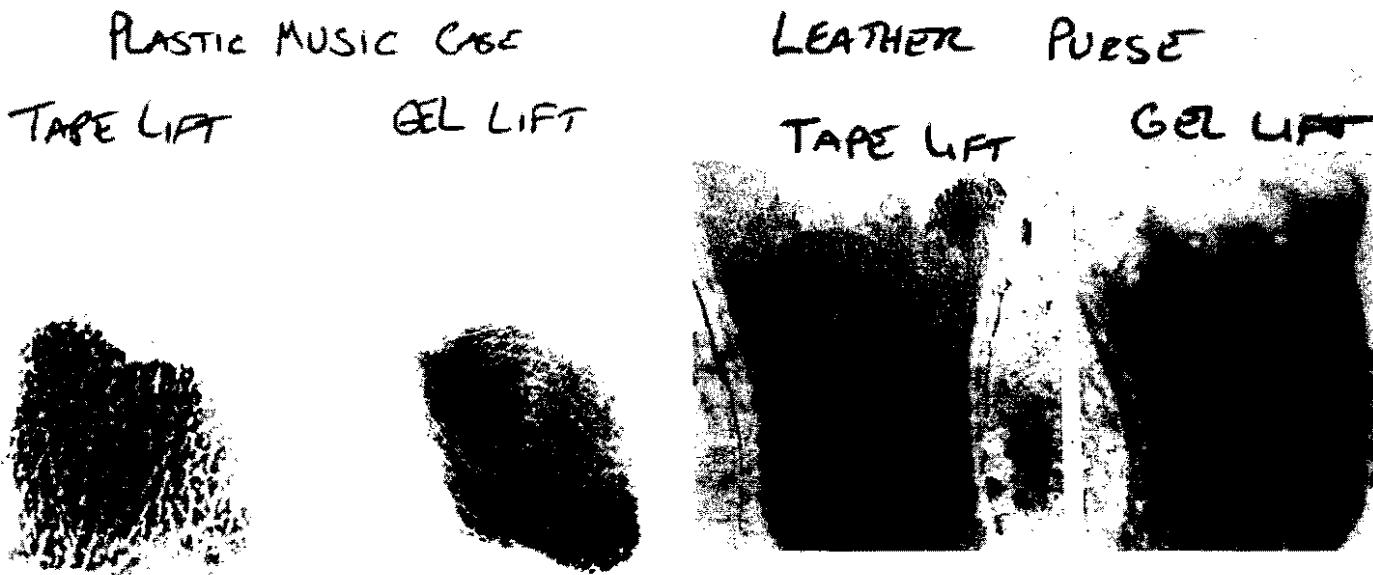


FIGURE 8: Fingerprints lifted off of a plastic music box.

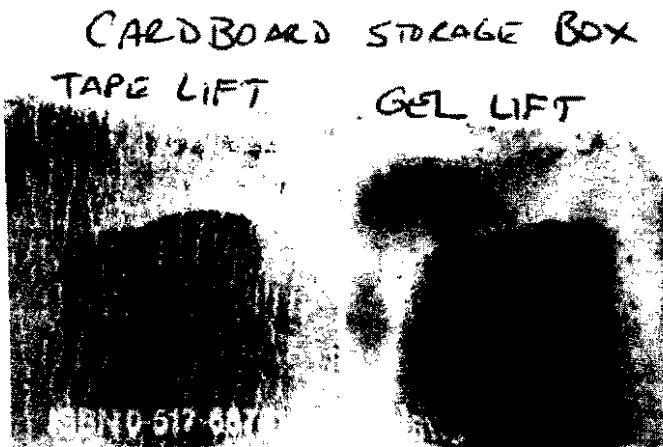


FIGURE 9: Fingerprints lifted off of a cardboard storage box.

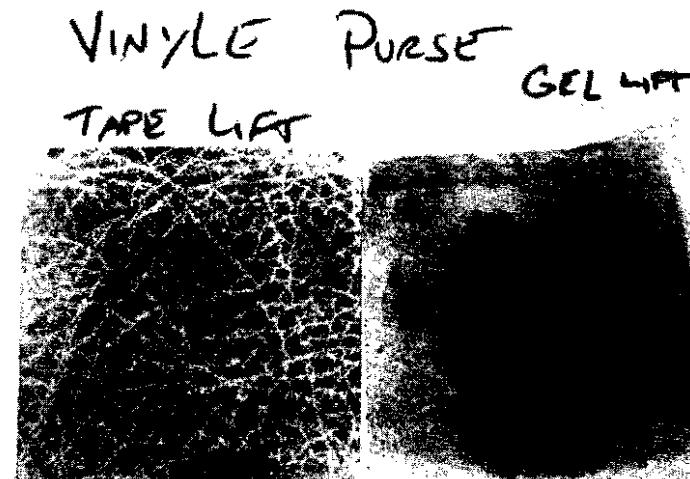
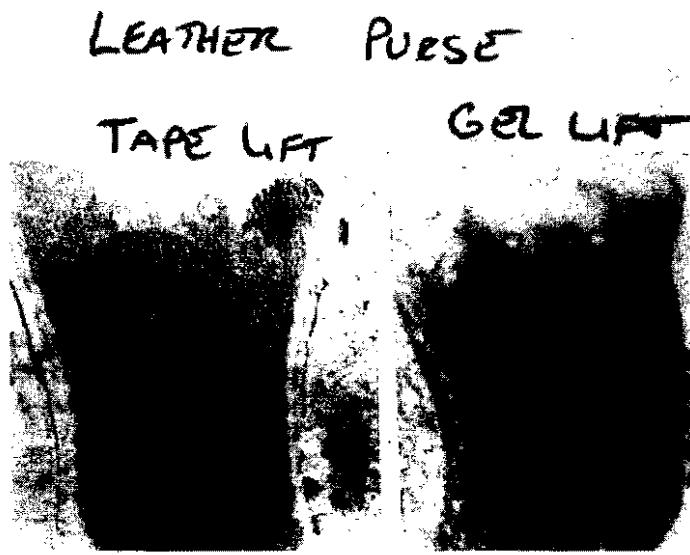


FIGURE 10: Fingerprints lifted off a leather purse and a vinyl purse.

There are an abundance of tools, techniques, and tricks used to lift latent fingerprints off a variety of difficult surfaces. Some of these techniques require a significant investment in equipment and supplies. Unfortunately, not every investigator has access to such equipment and must find alternative methods for processing crime scenes. Necessities, being the mother of invention, investigators are required to think outside of the proverbial box and develop alternatives to costly endeavors. A reusable gel lint roller is just such a device. The lint roller is completely affordable, starting at approximately \$5.00 per unit, and is easily washed with soap and water for repeated use. The gel wedges itself into the small nooks and crannies found on a variety of surfaces and can pull out the most stubborn of fingerprint details. This technique may not solve every latent print examiner's problems with textured surfaces, but it certainly offers another alternative for processing such challenging surfaces. ★