



# Footwear Photography Tutorial & SoleMate<sup>®</sup> FPX Database



# FOOTWEAR PHOTOGRAPHY TUTORIAL

Footwear evidence can be valuable evidence if collected properly from a crime scene. The analysts at the crime lab are often limited in their analysis due to how the footwear evidence is being photographed at the scene. A few things to keep in mind when taking photographs of questioned footwear at a crime scene:

## 1. PROPER SCALE PLACEMENT

An L-scale, or two rulers should **ALWAYS** be used when photographing an impression for analysis at the crime lab. If a scale is not used, the analyst is not able to make the impression its true size for comparison to any known standards. The analyst may still be able to conclude the outsole *design* is similar, but they will not be able to state anything about the size of the outsole design elements.

The scale should **ALWAYS** be on the same plane (depth) as the impression. If the scale is not on the same plane as the impression, again, the analyst is not able to accurately make the impression its true size for comparison purposes.

- If the impression is in snow or mud (3-D impression), the scale should be placed down to the same depth as the impression. Consider the depth of the impression and scrape away material to provide space for the scale. Do not disturb the impression during scale placement.



Above image **DOES** have the scale on the same plane.



Above image does **NOT** have the scale on the same

- If an impression is on a hard surface (2-D impression), the scale should be placed **flat**, next to the impression.

**\*NOTE\***-Avoid holding the scale in your hand against any vertical surfaces, instead secure the scale to the surface next to the impression with tape.



## 2. USE OF TRIPODS

A tripod should be used when photographing any impression for analysis. This ensures that the impression remains in focus. Just a slight movement can be enough to make it come out of focus and reduce the likelihood of capturing small cuts, etc., which are essential in making an identification.



Impressions on the ground should have the tripod set up so that the camera is directly above the impression.

Impressions on vertical surfaces should have the camera directly parallel to the impression.

**\*NOTE\***- It is still critical to use a tripod for impressions on vertical surfaces, even if you feel you can hold the camera directly parallel to the impression. As mentioned above, just a slight movement can blur an individual characteristic and make it useless during the comparison.

**\*NOTE\***- Any photo that is taken at an angle may create distortion of the impression and make it difficult to determine accurate size for the comparison. Always ensure you are directly above, or parallel to the impression.



Above photo depicts a proper tripod set up: directly above the impression.

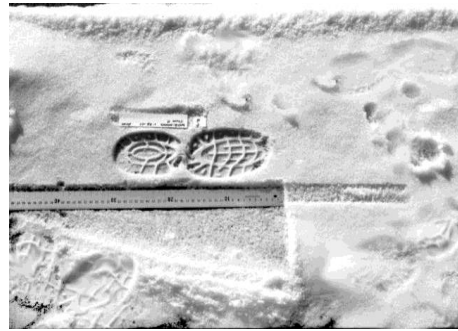
Below photos are examples of images taken at an angle, without use of a tripod.



### 3. FILLING THE FRAME



**FILLING THE FRAME**



**NOT FILLING THE FRAME**



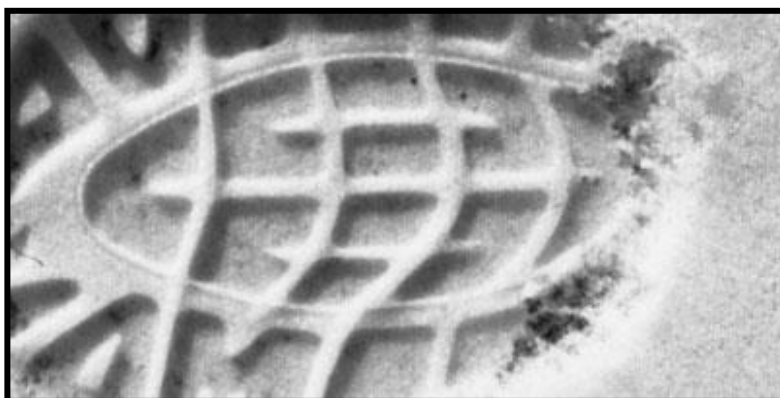
To fill the frame, the impression and scale should fill the camera view finder from right to left, NOT from top to bottom.

If the impression is not filling the frame, information is lost when the analyst makes the impression its true size or enlarges the image to look for minute detail. The image becomes blurry or pixilated and the analyst may have a hard time interpreting what is information from the impression and what is information being introduced due to the pixilation. Keep in mind, what could make that impression unique could be as small as the tip of a pen. It is very important that the impression fills the frame for the analyst to be able to see such detail.



**Low Quality Image:**

This is an example of when a photograph is taken without the impression filling the frame.



**High Quality Image:**

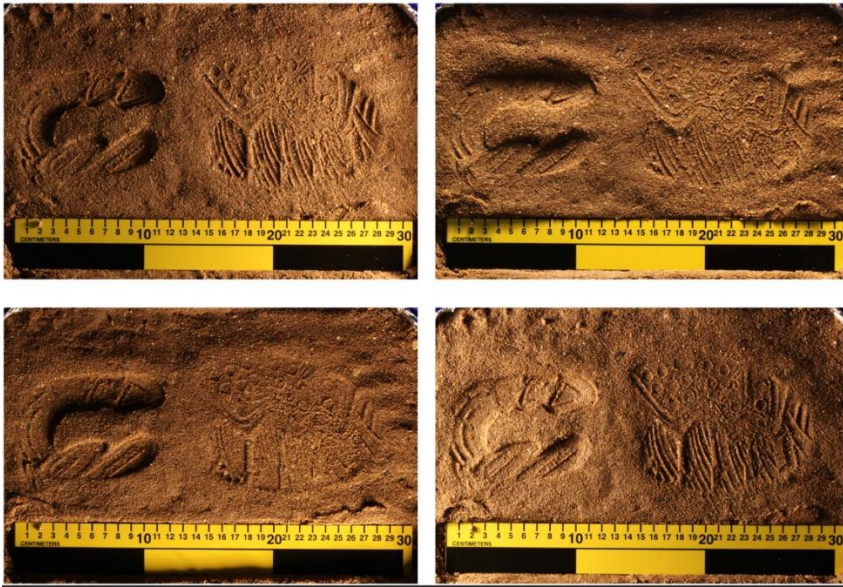
If the impression is filling the frame when it is photographed, the quality of the detail is much clearer.

**\*NOTE\***- Photograph one footwear impression per frame to maximize clarity.



#### 4. PROPER LIGHTING

Use an off-camera flash, or flashlight from all four sides of the impression. Lighting from all four sides helps to ensure that small cuts and unique characteristics are visible in the image. If the impression contains individual characteristics, but these areas are not depicted in the image due to a shadow, or improper lighting, this information cannot be used during comparisons. What may have been an identification, no longer can be.



The four images to the left are of the same impression, but you can see how different they look by being lit on four different sides.

Taking photos with lighting from all four sides is best practice.

#### 5. PROPER PHOTO EQUIPMENT

As mentioned, proper photography is vital for the comparison process at the lab. You can follow every suggestion and tip that has already been mentioned, but if you don't use the proper equipment, it may limit the analysis that can be completed at the laboratory.

The greater the resolution your camera has, the better. Digital cameras with a resolution of less than 8 megapixels are not recommended. If your camera has a resolution of 8-16 megapixels it is recommended to take one photograph of the entire impression and then also photograph the same impression in overlapping sections (heel and toe areas). For cameras with a resolution of 16 megapixels and above it may not be necessary to photograph in overlapping sections, though it is still best practice to do so.

See the low quality image on Page 4 for an example of what a low resolution camera produces, even if photographed filling the frame.



Keep in mind, the individual characteristics that are needed to make a footwear identification can be as small as the tip of a pen. Sometimes these characteristics are not reproduced in the questioned impression, other times they are, but are not visible due to poor photography. These individual characteristics not only have to be in the same location as those found on the known standard, but they also need to be the same *size* and shape. Without proper scale placement, it is impossible to determine the true size of these characteristics.



**Each cut, scratch, hole, etc. as depicted on the left can be considered an individual characteristic. These can be very small, so it is vital that all of the above tips are followed.**

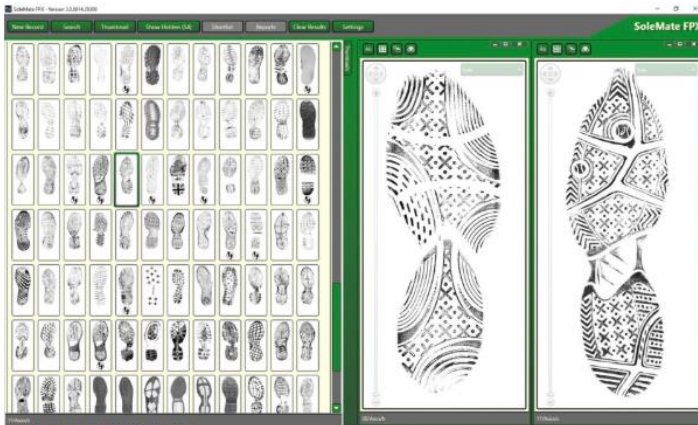
Help us help you get the most out of your evidence. After proper photography, lifts and casts should be taken of the impression and submitted as evidence, along with the images.

Contact any Wisconsin Crime Laboratory Footwear Analysis Unit with any additional questions.

- Madison Crime Laboratory: 608-266-2031
- Milwaukee Crime Laboratory: 414-382-7500
- Wausau Crime Laboratory: 715-845-8626



# SoleMate® FPX- New Service Announcement!



Have a questioned footwear impression from a scene, but don't have a shoe standard for comparison? Want to know possible makes and models of the shoe that could have left the impression behind at the scene? SoleMate® FPX is a footwear database designed to do just that!

Even if no suspect shoe standard is available, footwear impression evidence can be submitted to the Wisconsin State Crime Laboratory for a search in the SoleMate® FPX database. These database searches can generate information about a shoe's possible make(s) and model(s) which may provide the investigator with valuable leads that would otherwise go unknown.

SoleMate® FPX will be piloted at the Madison Laboratory. Images or physical evidence that you wish to have searched in the SoleMate® FPX database can be submitted directly to the Madison Laboratory Footwear Unit, or to your local Crime Lab for transfer to the Madison Laboratory.

## What and how to submit impressions for a search in SoleMate® FPX:

Items of physical evidence, or digital images, that contain questioned impressions can be submitted!

- Submit physical items or images on electronic media directly to the lab.

-OR-

- Email digital images (18 MB size limit) and a completed Transmittal form to:

[footwearch@doj.state.wi.us](mailto:footwearch@doj.state.wi.us)

**\*While we do not recommend it (see photography tutorial), unscaled images can be searched in the SoleMate® FPX database, HOWEVER, if a suspect shoe is later found, these types of images will limit our comparisons and conclusions.**

**\*If suspect shoes (standards) are located after a SoleMate® FPX report has been issued, the suspect standards and properly scaled images of the questioned impressions should be submitted to the laboratory in your service area for a complete comparison.**

