When a crime is committed, it is almost unavoidable that footwear would come into contact with at least one surface. If any marks can be found, then comparison with a suspect’s footwear may provide useful or even a conclusive link of a shoe to a scene.

The location and medium footwear marks are made in can provide useful information to help in the reconstruction of incidents or identifying a sequence of events. Detailed examination of marks at a scene can also help to corroborate or contradict accounts given by a suspect or a witness.

Cellmark’s highly skilled team can also examine marks on skin as a result of assault/murder involving kicking.

Not only is it possible to compare marks on skin with the sole of a shoe, it is also possible that details from the uppers of the shoe may be reproduced on the skin.

Their work is carried out in a team with a full range of complementary skills relating to the recovery, preservation and analysis of trace evidence and biological materials.

This enables the results of any comparison to be considered within the context of all of the scientific findings to maximise the overall effectiveness of the scientific outcomes.

**Introduction**

Footwear is a basic wardrobe item and there are many manufacturers producing a range of footwear with a vast range of different under surface patterns.

When an item of footwear comes into contact with a surface, a two-dimensional mark may be left. The mark may be visible or it might be latent, requiring physical or chemical development to reveal the mark. If the contact is with a soft deformable surface, a three-dimensional impression may be left.

If a mark, or the item bearing it, can be recovered, it is possible to compare it with an item of footwear suspected of having made it by checking characteristics that the shoe acquires as a result of being worn, such as the pattern, distribution and amount of wear or damage to different areas of the shoe. If features corresponding in position, size and shape with damage to a shoe can be found in a mark, an unequivocal link can be established between the shoe and the mark.
The first application of a footwear impression as evidence in a crime investigation can be dated back to the Richardson murder case in 1786 in Scotland. The investigator recognised that a positive identification could be made through a comparison between a footwear impression made at the crime scene and the sole of a questioned shoe.

In addition to being a reliable piece of evidence of a person’s presence, a footwear impression can reveal vital information about the wearer, such as body size, shoe size, and walk style. Ultimately, its internal characteristics, such as size, pattern, and damage, may constitute sufficient details to identify a specific shoe.

Case study
Footwear marks discovered at the scenes of two murders were linked due to an unusual boot sole pattern.

Marks left in blood at one scene linked the suspect to that murder through both DNA and footwear marks.

The same footwear marks at the second murder scene were mapped to show movement around the property.

This was used to disprove the suspect’s claimed version of events.

Through examination of a footwear impression, the forensic scientist may provide the investigator with valuable information about the footwear and sometimes even about the wearer. The characteristics of an impression can be so unique that it provides for identification with a suspect shoe.

Cellmark has the facilities to record, recover and enhance marks through the use of detailed photography, using a range of lifting techniques, casting and using physical and chemical development methods.

Our scientists are experienced in assessing the potential significance of the location and types of marks discovered and in using the information gathered to assist the process of reconstructing potential sequences of events including the mapping of scenes to describe the movements of people.

We are committed to delivering a swift, responsive service to assist police in the rapid resolution of criminal cases.