



Trace Evidence Service



Key Forensic  
Services Limited



Trace Evidence



Fibres



Glass, Paint and  
other Particulates



Hairs



Toolmarks

## Right People. Delivering Results.

Experienced scientists delivering forensic effectiveness, unquestionable integrity, focused customer service and value for money.

# Glass

A window may often be broken at the point of entry in a burglary, or as a result of criminal damage. Similarly, glass objects may be broken during an assault. If someone is close to breaking glass then tiny fragments of glass are transferred onto their skin, hair and clothing.

These glass fragments can be recovered at the laboratory and compared by physical and chemical tests to the control glass from the crime scene. If the recovered glass fragments match the control glass, then the examiner will decide on the strength of evidence based upon the number of matching fragments and the frequency of occurrence of the control glass.

## **Within the Glass Service we provide:**

- Searching of submitted items to confirm and quantify the presence of glass
  - Assessment and interpretation of the distribution of any recovered glass
  - Identification and selection of samples suitable for analysis and subsequent examination and comparison, in accordance with the agreed examination strategy
  - Comparison between the reference samples and/or the recovered samples to establish a link
  - Interpretation and justification of the degree of association between the compared samples
  - Intelligence or information relating to the possible usage/origin of any recovered samples
- Assessment and interpretation of the significance of the position, number and distribution of the recovered glass
  - Provision of abbreviated statements or reports, experts' statements suitable for court presentation in line with customer requirements and the provision of expert court testimony
  - Scientific, technical advice and forensic training.



# Paint and Particulates

Minute fragments of paint, plastic or other materials may be recovered from the clothing or tools of someone who has forced entry into a building or vehicle.

The layer sequence of fragments of recovered paint can be determined by microscopy and compared to that of the control paint from the scene. In addition, the physical and chemical properties of the paint or other particulates can be measured and compared to the control materials from the scene.

The significance of the evidence will depend to a large extent on how unusual the material is that has been transferred to the suspect during the incident.

## **Within the Paint and Particulates Service we provide:**

- Examination of one item, including an assessment of suitability for likely retention, to recover debris and screen to identify the presence, location and quantity of particular material or staining
- Examination of one known control sample to identify its characteristics
- Selection and comparison of up to one recovered particulate or areas of staining with one control sample
- Assessment and interpretation of the significance of the position, number and distribution of the recovered evidence
- Provision of intelligence or information relating to the possible usage/origin of any recovered samples
- Provision of abbreviated statements or reports, experts' statements suitable for court presentation in line with customer requirements and the provision of expert court testimony

- Scientific, technical advice and forensic training.
- We also offer a Gunshot Residue (GSR) service.

GSR is the collective term for the microscopic material contained in the cloud of gas that is created when a firearm is discharged.

GSR may contain;

- Microscopic metallic particles formed when the shock sensitive chemicals in the primer charge are ignited by the firing pin.
  - Particles of un-burnt propellant which could contain detectable additives
  - Microscopic metallic particles originating from the projectile, the cartridge case or the firearm.
- GSR evidence can be useful in any incident involving a firearm including the following instances;
- Murders / Woundings
  - Armed robberies
  - Firearms possession
  - Suicides

# Hairs

Physical contact between people may result in hairs (head, body or pubic hair) being transferred from one person to another. Hairs may also be found at a crime scene, for example adhering to woodwork or glass at the point of entry in a burglary.

Hairs are identified and compared using microscopy. If the root and sheath material is still adhering to the hairs, they can be subject to DNA profiling and compared to a reference sample from a subject. Hair examination can also provide information about racial origin.

If a DNA profile is obtained from hair, then it may uniquely identify a person. Otherwise, it is more likely that hair comparison will only suggest that the hair is more probably from one person rather than another.

## **Within the Hairs Service we provide:**

- Searching for and recovery of hairs from one item using an appropriate recovery technique
- Basic microscopic examination of hairs to establish potential for DNA analysis and submit for analysis as appropriate
- Comparison between recovered hairs and reference hair samples to establish a possible link
- Assessment, interpretation and reporting of the significance of the findings, taking into consideration the microscopic appearance and the number and distribution of the recovered hairs
- Provision of abbreviated statements or reports, experts' statements suitable for court presentation in line with customer requirements and the provision of expert court testimony
- Scientific, technical advice and forensic training.



# Fibres

Fibres evidence can provide information about whether there has been physical contact between people, or whether someone was present at the crime scene.

Physical contact between people may result in fibres being transferred from the clothing of one person to another. In addition, fibres from someone's clothing may be left at a crime scene, for example adhering to woodwork or glass at the point of entry in a burglary.

The recovery of fibres must take place under carefully controlled conditions to avoid inadvertent transfer of fibres between the suspect's and the victim's clothing. Fibres are identified and compared using microscopy and chemical analysis.

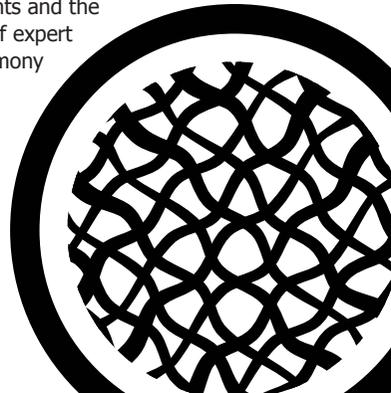
The strength of evidence depends upon the number and type of fibres recovered.

## **Within the Fibres Service we provide:**

- Examination of one item of clothing or two items of clothing if garment-to-garment transfer is being addressed. This examination will typically include recovery of extraneous fibres using tape lifts. It will also include an assessment of the suitability of the item as a potential source of fibres for transfer, and how readily any transferred fibres would be retained
- Generation of known (reference) samples of constituent fibres from item and/or clothing as appropriate, and identification of the fibre types contained within them
- Assessment, interpretation and reporting of the significance of the findings, taking into consideration the types of fibres and

their commonality, together with their number and general distribution and whether the fibres were transferred in one or two directions

- Provision of abbreviated statements or reports, experts' statements suitable for court presentation in line with customer requirements and the provision of expert court testimony
- Scientific, technical advice and forensic training.



# Instrument Marks (Toolmarks etc.)

This involves the testing of marks and impressions for physical fit, manufacturing marks, defects, damage etc. and comparison of the marks to a crime scene or recovered object.

## **Within the Instrument Marks Service we provide:**

- Basic examination/assessment of impressions, identification and selection of impressions suitable for comparison and examination in accordance with the agreed examination strategy
- Use of enhancement techniques as necessary to improve the visualization of the impression marks
- Production of appropriate control marks from submitted instruments for intelligence and comparison purposes
- Comparison between the instrument/ implement control mark and/or the recovered crime scene marks
- Interpretation and justification of the degree of association between the instrument/implement and crime scene marks
- Determination of whether an instrument/ implement can be eliminated from an enquiry
- Intelligence information relating to the possible identification of the type of instrument/implement responsible for making the impression.
- Intelligence information and control marks to approved third parties as authorised
- Provision of abbreviated statements or reports, experts' statements suitable for court presentation in line with customer requirements and the provision of expert court testimony
- Scientific, technical advice and forensic training.



# Contact Us

For more information on our Trace Evidence Service, please contact our Sales & Marketing team:

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