

IMPRESSION EVIDENCE

What is impression evidence?

Impression evidence can be generally defined as objects that have retained the characteristics of other objects through direct contact. Impressions are created when one object is pressed against another material with enough **force** to leave an impression of the object. **Shoeprints, tool marks, tire tracks, bite marks, and marks on a fired bullet** are several examples of impression evidence.

Impressions may be found in or on many different types of **materials**. The **quality** of the impression depends on the object making the impression and the surface conditions, such as how hard or soft it is and what type of material it is (soil, mud, dust, concrete, grass, skin, etc.)

Collection of impression evidence can be accomplished using several methods:

2-D: This type of impression is documented using photography. Some impressions may be dusted with fingerprint powder to be photographed or lifted with tape. They may also be collected using an electrostatic dust lifting process.

3-D: This type of impression can be documented using photography as well as by casting, which involves using dental stone or a similar substance to preserve the dimensional characteristics of the print.

Examples of Impression Evidence

Tire Tracks

Tire tracks are usually found in road **accident** scenes or in the access and escape **routes** of other crime scenes. Tracks help investigators identify the **type of vehicle** that left them. Investigators may make **ink prints** of a tire or **plaster casts** of a track. They will also take **photographs** that can later be used to prove a match.



Features to analyze:

- Tread pattern
- Width & depth of tread
- Unique characteristics due to wear patterns, **damage**, or material defects

Tire databases are available to help investigators determine the brand and model of the tire, which can be used to determine the type of vehicle that made the tracks.

Shoe Prints

Investigators can analyze a shoe print to determine its **class**, or the type and brand of shoe. They will also look for **individual** characteristics, such as **wear patterns** and specific **damages** or **defects**.



Features to analyze:

- Tread patterns, size, and depth
- Wear patterns caused by the way a person walks
- Material defects or damage (nicks, cuts, etc.)
- Other trace materials, such as soil, tar, rocks, and paint

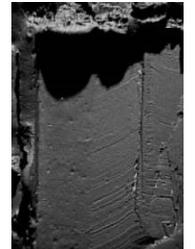
Tool Marks

Certain **defects** or **patterns** may be left on a tool when it is made or used, which can be used to find matches between evidence at a crime scene and tools or objects found at a suspect's home.

Tool marks can be classified as **impressions** or **scratches**, while some tool marks are a combination of both.

Features to analyze:

- Dimensions of the impression
- Ridges or striation patterns
- Defects, such as nicks and chips
- Paint chips or metal shards left on a tool



Bite Marks

Investigators can analyze **bite marks** for characteristics to help them identify victims or suspects as well as to exclude others. Marks can be left on a victim's **skin** or other **objects**, such as Styrofoam cups, gum, or foods. **Saliva** or **blood** may be left behind that can be tested for **DNA**.

Features to analyze:

- Type of bite mark (human or animal)
- Characteristics of the teeth (position, evidence of dental work, wear patterns, etc.)
- Color of area to estimate how long ago the bite occurred (old or recent bite)
- Swab for body fluids for DNA tests

