



# INDIANA STATE POLICE LABORATORY DIVISION

## PHYSICAL EVIDENCE BULLETIN

### GLASS

**INTRODUCTION:** Broken glass is commonly encountered as physical evidence in crimes. Windows, automobile glass, bottles, and other glass objects may be crucial evidence in burglaries, murders, hit-and-run and many other types of crimes.

It is known that any person standing in close proximity to glass when it is broken or someone walking through broken glass can pick up fragments, particularly on shoes and clothing. Consequently, the clothing and shoes of burglary suspects in cases where windows have been broken will often retain microscopic glass fragments.

In hit-and-run accidents, windshield glass, tempered glass, and mirrors may be broken. Both the scene of the accident and the clothing of the victim can be sources of glass fragments.

Glass panes can be examined to determine the direction of force, type of impact, and the sequence of the impacts.

### COLLECTION, PRESERVATION, MARKING AND TRANSPORTATION OF GLASS

#### A. FRAGMENTS OF MICROSCOPIC SIZE

##### 1. COLLECTION PROCEDURE:

Glass fragments may be found on articles of clothing, and shoes. Keep handling to a minimum, wrap the articles of clothing SEPARATELY and label. Wet or bloodstained clothing should first be dried before packaging in paper. Other objects such as tools or bullets may contain glass fragments and are packaged as described on the following page.

2. **MARKING AND PACKAGING PROCEDURE:**

Carefully place in a container into which any debris will remain inside the packaging and the object will comfortably fit. **DO NOT PACK WITH COTTON OR OTHER PROTECTIVE MATERIAL DIRECTLY TOUCHING OBJECT.** To prevent rattling, object may be wrapped and sealed in butcher or brown paper and packed with crumpled paper or packing material.

Seal completely, leaving no holes or open seams through which the glass may be lost should it become loose from the object.

Label container completely and transmit to laboratory.

B. **LARGE VISIBLE FRAGMENTS**

1. **COLLECTION PROCEDURE:**

There is a chance that physical matching (jig-saw puzzle type) may be accomplished with the fragments. Therefore, collect and submit all the fragments present to permit reconstruction. If the nature of the breaking force, or the direction of force, or sequencing is required, all fragments should be collected. The glass should be placed in a sealed paper bundle or a folded and sealed paper or plastic bag, depending on size. Large pieces of glass with sharp edges should be put into sealed containers (such as cardboard boxes) in which they will not cut their way through.

2. **MARKING AND PACKAGING PROCEDURE:**

Place in pill box or similar boxes with tight-fitting lids. **DO NOT USE GLASS CONTAINERS.**

If glass is submitted for purposes of determining direction of impact of a bullet or other fracture analysis, **RECORD WHICH SIDE OF GLASS WAS ON THE OUTSIDE OF THE WINDOW AND WHICH SIDE WAS ON THE INSIDE.**

C. **COMPARISON SAMPLES**

1. **COLLECTION PROCEDURES:**

The laboratory examination of glass fragments is almost exclusively a process of comparison. For this reason, as much broken glass as possible must always accompany the rest of the evidence submitted.

2. **MARKING AND PACKAGING PROCEDURE:**

If size limitations preclude collecting all the glass, always attempt to obtain a sample from an area near the point of impact and then collect and mark separate specimens from distant corners of the pane as well. If multiple sources of glass have been broken, a standard from each source should be obtained.

3. **Submittal of all Sources of Glass:**

Each potential source of glass needs to be collected and submitted as separate items. If more than one side window of a vehicle is broke, a standard should be collected for all pieces of broken glass. Likewise, for each piece of glass from a display case a standard should be submitted.

**ALWAYS KEEP THE COMPARISON SAMPLES SEPARATE FROM THE QUESTIONED FRAGMENTS.** Place in separate containers and label accurately.

**RESULTS POSSIBLE FROM LABORATORY EXAMINATION OF GLASS**

If the pieces of broken glass can be made to fit together in the manner of a jig-saw puzzle, it can be said that the pieces were once physically connected to and a part of each other.

Even glass fragments as small as the head of a pin can be compared. However, even if unusual properties are present, only an indication of common origin can be given, not an absolute identification.

If a window has been struck with a blunt instrument such as a rock, stick, or fist, it is possible to determine the side of impact and the nature of the force involved.

If a window has been penetrated by a bullet, it may be possible to determine the direction from which it was fired.

If two or more points of impact are in close proximity, it may be possible to determine the sequence of firing.

For further information you may wish to consult with your local Indiana State Police District Crime Scene Investigator or the Indiana State Police Laboratory in Indianapolis. The laboratory number is: toll free 1-866-855-2840 or 317-921-5300