

TENNESSEE BUREAU OF INVESTIGATION
Forensic Services Division

Violent Crime Response Team Standard Operating Procedures
Silicone Casting



10. VCRT Procedures

10.9 Silicone Casting

10.9.1 Scope

When toolmarks are present at a scene and can not be easily transported, silicone casting is the preferred method to recover the toolmark for comparative examinations in the laboratory.

10.9.2 Definitions

Refer to VCRT 11.0 Definitions and Abbreviations

10.9.3 Chemicals and Reagents

Accutrans™ or other silicone casting material

10.9.4 Equipment and Supplies

Mixing tools

10.9.5 Test Procedure

1. Squeeze out the silicone and the hardener from the two tubes through the attached mixing tip
(Note* the mixing tips are designed to dispense equal amounts of material and properly mix them upon exiting the tip).
2. Use a spatula or similar item to spread the Accutrans™ across the surface bearing the toolmark, pressing the material into the toolmark attempting to avoid trapping air bubbles in the recesses of the toolmark.
3. Curing time varies with temperature and the amount of material used. An additional amount of test casting material can be used to monitor the curing.

Observe the detail in the hardened cast and evaluate the quality. If the quality is lacking (hardened too fast or not enough, air bubbles present, debris from the mark imbedded in cast, etc) the procedure can be repeated as necessary until the desired quality of the cast is obtained.

If Accutrans™ is not available, similar silicone casting material may be used following the manufacturer's mixing instructions.

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10.9.6 Results and Conclusions

Mark the cast with appropriate information indicating its orientation such as up/down, inside/outside, and left/right directions. An impressed writing tag can be imbedded in the Accutrans™ prior to hardening to provide a surface for information. Package the cast impression in such a manner as to prevent damage during shipment and storage.