



A104 Concealment and Detection of Bloodstains Beneath Multiple Coats of Paint

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After attending this presentation, attendees will learn how different types of paint cover bloodstains and how Fluorescin with the use of an alternate light source, helps to detect bloodstains when they are no longer visible to the naked eye.

This presentation will impact the forensic community by providing information on ways bloodstains can be detected under multiple coats of paint.

This experiment used two popular brands of paint, Lucite Satin Finish latex paint and Zinssers Bulls Eye 1-2-3 Primer a product specifically formulated to hide and seal off stains. Both paints were a basic white and were applied with a standard compressed air paint spray rig. The blood spatter was applied using an Iwata airbrush rig and a paint scraper to deflect the blood and create the spatter effect.

One foot square pieces of untreated drywall were used for the experiment. Five squares were used as controls. The negative controls were treated as follows: one was left untreated, one was painted with basic primer, one was painted with one coat of basic primer and two coats of paint, and one was painted with a single layer of Zinssers. The positive control received one coat of the basic primer, two coats of paint and one coat of blood spatter.

Twenty-four squares were divided into two groups of twelve. Group A received the basic primer coat, two coats of paint, and bovine blood spattered on each square. Once the blood spatter dried, each square received a coat of paint; then additional coats of paint were applied. Square A1 got one coat of paint over the blood spatter. A2 got two coats of paint over the blood spatter and so on up to A12 which received twelve coats of paint over the blood spatter. All paint coats were allowed to dry at least 24 hours before the next coat was applied.

The second twelve drywall squares, Group B, were painted with the primer, two coats of paint, then bovine blood was spattered on the drywall, and then one coat of Zinssers applied over the blood before the consecutive coats of paint were applied. Drywall squares B1 through B12 were painted with increasing numbers of coats of paint in a manner similar to the drywall squares in the "A" sequence.

All paint and Zinssers coats applied after the blood layer were measured at exactly 40 milliliters per coat. The blood spatter was created with 2 milliliters of bovine blood. The bloodstains were no longer visible to the naked eye on drywall squares containing more than two coats of paint in both groups.

The squares were examined with an alternate light source set on 415 nanometers and crime scene setting with a yellow filter on the camera, before the application of Fluorescin. The bloodstains were visible under the satin finish paint up to four coats deep and under the Zinssers 1-2-3 Primer up to seven coats deep. After the application of Fluorescin, the squares were examined with an alternate light source set at 490 nanometers and white with an orange filter. The bloodstains were visible under all twelve coats of paint in both groups. Orange goggles were used for eye protection for viewing with the alternate light source before and after the application of Fluorescin.

During the application of Zinssers onto the twelve squares in Group B, the completely dried blood seemed to bleed. Upon closer inspection it was discovered that the Zinssers had actually separated from the blood leaving a pocked-marked surface visible under several coats of paint. The variable surface could be seen with the naked eye when holding the squares under certain lighting conditions.

Bloodstain, Fluorescin, Paint