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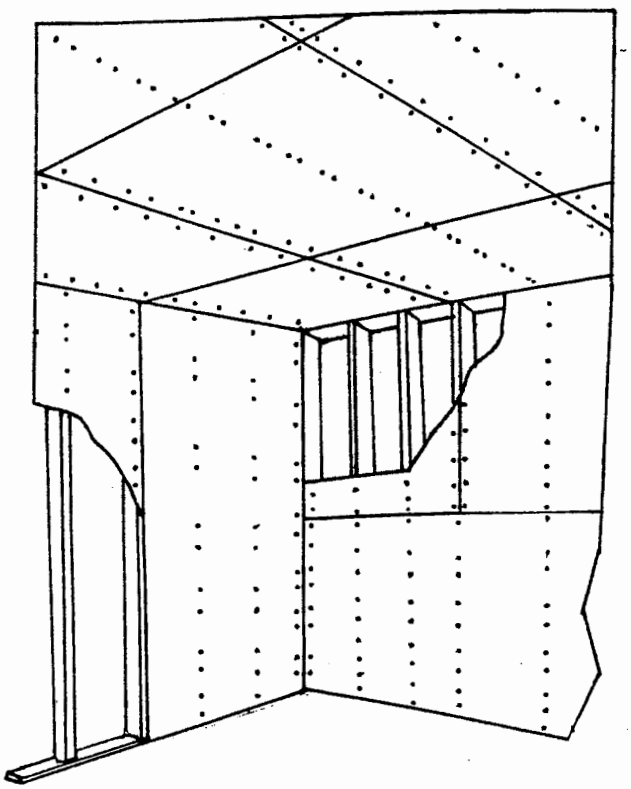
BPA - Sheetrock Surfaces

THE COLLECTION AND PRESERVATION OF BLOODSTAIN EVIDENCE FOUND ON SHEETROCK SURFACES.

By
Daniel V. Christman

Processing, documenting and preserving evidence at the scene of a violent crime can be the most important part of an investigation. Crimes of violence usually involve a struggle, use of forceful weapons and an element of unpredictability, leading to even more complications in interpretation. The collection of bloodstain evidence from the interior walls of dwellings can prove to be a challenging task. Bloodstained walls found in narrow hallways and crawl spaces, small storage areas and rooms can be hard to photograph and interpret. The best way to preserve, retain and document those areas is to keep it in the position it was originally discovered. Through a better knowledge of sheetrock, its application and its finish work, the investigator can collect, with little trouble, bloodstained evidence in its original presentation. On several occasions this author has removed complete walls (excluding studs) and reconstructed the walls for use in courtroom presentation. The physical dynamics of the "original wall" has proved to be very positive in explaining bloodstain evidence.

Sheetrock or wallboard is composed of a fire-resistant gypsum core covered on both sides with a tough layer of paper. Sheetrock can be purchased in 3/8, 1/2, and 5/8-inch thickness. The sheets are four feet wide and can be found in various lengths up to 16 feet. Sheetrock is fastened to studs with either nails or screws. The placement of the fasteners are normally two nails or screws placed closely together, eight to ten inches vertical you will find another pair of fasteners. The heads of the fasteners are "set" into the gypsum and covered with a layer of taping compound. Sheetrock is applied first to the ceiling, then to the walls. Commercial sheetrock companies usually apply the sheetrock horizontally to the side walls, staggering the vertical seams and creating one horizontal "band" (seam) around the room, four feet from the floor. In some cases application can be found where the sheetrock is hung vertical with the long edges parallel to the studs, creating multiple vertical seams from floor to ceiling with no horizontal seams. Commercial sheetrockers tend to use large pieces with minimal small piece work whereas in do-it-yourself application, to cut costs, you may find small pieces grouped together if they've run low on larger pieces.



The standard wallboard tape is a rigorous two inch wide perforated paper product. A thick layer of joint compound is used to cover the sheetrock joint and the tape is embedded in the compound. The excess compound is scraped off and two additional layers of compound follow after each layer has dried. Inside corners are taped with the same paper tape and multiple layers of compound. In outside corners, 90 degree metal edging is nailed or taped to the sheetrock and compound is applied in a thick layer over the metal.

Textures on sheetrock surfaces have long been a point of contention with interpretation. It has been my experience that textures can alter the stain pattern if they are large abstract patterns similar to a stucco finish. My suggestion is to describe the texture as the professional sheetrockers do. Beaded texture can be found on walls and ceilings. This texture can range from light to heavy in application. Knockdown texture can also be found on the walls and ceilings. Knockdown resembles a "Stucco" finish and is very rough and cavernous. Acoustic texture will be found on ceilings and consists of a pieces of spongy material sprayed onto the surface of the ceiling. This texture can alter bloodstains on impact with the ceiling.

Before an object becomes evidence it must be recognized by the investigator as having some significance with relation to the scene. Once this value is given to an object or structure the investigator will need to decide the best way to collect it and make it presentable in a court of law. Through several incidents involving bloodstain evidence deposited on interior wall surfaces, this author has developed a working knowledge of sheetrock application and its removal from framed structures.

TOOLS:
Like any profession, the tools of one's trade are important to the execution of their job. An investigator should maintain a tool box which includes the following for sheetrock removal:

* Razor knife with extra blades
* Hammer
* Pry bar
* Screwdrivers (Slotted and Phillips-head)
* Straight edge and/or Chalk line
* Keyhole saw
* Pliers with wire cutter

This basic kit will help further your efforts in removing sheetrock evidence from a crime scene.

Documentation:

The first and foremost task of the investigator is to examine the wall very closely. Take the time to observe the bloodstain evidence visually before it is disrupted. Anytime you alter a structure, like a pre-existing wall, there is potential for losing some evidence. Even if the wall is in close quarters, make an attempt to photograph it and document the evidence in its original state. Take care to measure the wall and the surrounding area precisely. Include the connected and adjacent walls as well as floors and ceilings in the measurements. These numbers will prove to be more than helpful later when the scene diagram is produced.

It is a good idea to work up your wall in its original state and make notes regarding pertinent data found at the scene. If there is a specific set of stains or single stain you feel might be endangered by removing the sheetrock you may choose to protect it. Of course you could capture it with photography, measure it and triangulate it, then write about it in your notes or you could place a piece of wide, clear tape over it to protect it before removing the wall.

Discussion:

Meet and consult with your colleagues about the relevance of the wall. Is it necessary to remove the wall? Will it help the case and enhance the courtroom testimony or is it overkill? You will probably get a varied response but respect and consider the discussion.

Locate the seams:

Once again examine the wall closely. If the sheetrock has been taped appropriately, you may not be able to find the seam by inspecting the wall, but try. Are the seams horizontal or vertical? Remembering the previous information, does it look like a commercial job or a do-it-yourself job? Once you believe you have located the seams, think about where you will make your cuts in the sheetrock. Now is also a good time to remove any cover plates and switch plates from the wall. By doing this you can sometimes find evidence of seams under the plates.

Cutting the sheetrock:

Measure from the floor to where you want to make your horizontal cut. By measuring exactly four feet from the floor a single horizontal cut could be made through the taped seam. Remember though that cutting through seams can produce a lot of chipping and fracturing in the seam area. The dried taping compound, once altered, becomes very brittle.

Procedure:

* Using a straight edge or a chalk line mark a straight line that you can follow with the knife blade.

* Once the line is marked, using your razor knife, score the surface of the wall. If the wall is textured and/or painted, pierce the paint and texture with the knife blade and score through their surface the entire length of the mark.

* Bring the knife back to the start of the mark and draw it through the length of the mark again, this time cutting into the gypsum. Continue to do this until you are deep into the sheetrock. Eventually, you will perforate the sheetrock entirely and as you are drawing the knife through the material you will feel the studs backing the sheetrock.

* Once you've completed the horizontal cut you can move to the inside corner of the wall and make the vertical cut where the two walls converge. If the bloodstain evidence is restricted to a small area on the wall and it's not necessary to remove the entire wall, you can make a vertical cut through the non-stained portion of the sheetrock wall, and remove a portion of the entire wall.

Removing the sheetrock:

Once all the cuts have been made, you are ready to remove the piece of sheetrock. Remember that all seams are extremely fragile, especially the outside corners where compound has been layered over the top of corner metal. When you begin to move the sheetrock off the stud wall - these areas are susceptible to fractures and loss of valuable evidential material. Extreme caution must be used in this step of the procedure. You may choose to work the pry bar through the cut in the sheetrock and pry the material off the studs. This has worked well for the author but again extreme caution must be used so that the material and seams do not fracture. Try to remove the material in an even fashion from the top down or side to side. Do not try to remove large pieces of sheetrock in one piece. It is much easier and less destructive to your evidence to make cuts in non-essential areas and remove the sheetrock in pieces. If you end up with multiple pieces of sheetrock it is advisable to number the pieces on the back and sketch a map in your notes to assist you in reassembling the wall at a later date.

If the sheetrock has been nailed to the studs, either the nails will pull through the backside of the sheetrock or they will pull out of the studs and stick out of the backside of the sheetrock. If they are sticking out, you may cut them off, flush with the back side of the material and leave the head embedded in the gypsum or pull them out from the back with a pair of pliers. If

the sheetrock has been screwed to the studs the screws will pull out of the back of the sheetrock and remain in the studs.

Protecting your evidence:

Wrap the pieces of sheetrock in clean paper and seal the open edges with masking tape. Mark the paper "FRAGILE" and make them ready for transport to the property room. Maintain a clean chain of custody. You may decide to transport them yourself.

Reconstruction:

The wall should be reassembled so that it represents the original presentation as closely as possible. For courtroom work, make your presentation as professional as possible. Using a construction grade adhesive, mount the pieces of sheetrock onto a piece of 1/2" plywood. Paper can be placed over the bloodstained wall and weight can be distributed on top of the paper to assure a good bond to the plywood. When mounting a portion of an entire wall, if possible, mount the sheetrock piece(s) the same distance up from the floor and out from the corner. This will allow the investigator to accurately portray the reconstruction of the angle of impact, trajectory and relationship to the entire wall. When mounting an entire wall, leave a one to two inch perimeter of plywood around the sheetrock edges to protect the sheetrock sides and corners. Make sure the cut edges are butted together tightly and the pieces are aligned. Prior to taking the exhibit to court, an easel can be constructed to hold the piece upright.

Conclusion:

As investigators we strive to present the most accurate representation of the crime scene in order to successfully facilitate the apprehension and prosecution of the accused. Proper collection, preservation and presentation of hard evidence certainly represents a major function of the investigator. Confidence in the quality of your final presentation brings an overall air of success to you the presenter. Remember the things you may have learned while growing up: Do it right the first time, then it won't have to be done a second time. Be certain that what you are saying is true and correct. And finally, be confident in what you have done because it represents your best.