A COMPARATIVE STUDY OF COTTON BLOTTER, EVOLON®, AND TEK-WIPE AS ABSORBENT SUPPORTS FOR PAPER CONSERVATION TREATMENT

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INTRODUCTION

Cotton blotter paper has traditionally been used in paper conservation for a variety of treatment techniques and is ordinarily employed during blotting, drying, and flattening in the past few years, however, two major factors have motivated this disparity to explore alternatives to cotton blotter: the pursuit of cost-effective sustainable treatment practices and the unique treatment demands of many modern and contemporary works of art on paper. De-inked networks necessitate larger substrates for treatment, and the moisture selection of modern and contemporary paper supports and media prevents the need for raw materials that allow precise control of the blotting process and removal of inks during treatment. Two products—both non-woven fabrics made from micro- and fiber blends—have recently emerged as interesting alternatives for cotton blotter: Evolon® and Tek-Wipe. This paper explores the advantages and disadvantages of both materials as compared to the performance of cotton blotter.

THE MATERIALS

COTTON BLOTTER

Cotton blotter is a non-woven fabric with approximately 95% cotton pulp and adds the following:

- Non-woven fabric: made from cellulose fibers
- Consists of approximately 10% cotton and 90% polyester

Evolon®

- Constituents: Microfiber blend of polyester and polyamide
- Thickness: 0.30 mm
- Absorbency: 4.5x its weight in water
- pH: Near neutral (pH 7)
- Reactivity: No noticeable reactions
- Reactivity to solvents: Resistant to most solvents
- Reactivity to acids and bases: Resistant to most acids and bases

Tek-Wipe

- Constituents: Microfiber blend of polyester and polyamide
- Thickness: 0.033" (0.8 mm)
- Absorbency: 3.75x its weight in water
- pH: Near neutral (pH 7)
- Reactivity: No noticeable reactions
- Reactivity to solvents: Resistant to most solvents

OVERALL PERFORMANCE

Mock up tests were conducted to compare the performance of the three materials during blotting washing. Two sets of tests were run: the first with a group of test-inked prints containing the same set of inks, and the second with a set of four inked, non-acidified prints. The prints were then treated with demineralized water for one hour and then for three additional hours. After visual examination, it was determined that the print fragments washed from treatments performed with the three materials.

UNIFORMITY AND CONTACT

Mock-up samples were tested to compare washing uniformity and contact between the material and the three washing substrates. Sheets of chromatography paper were uniformly colored with cow-poo and left to dry. Cotton, the slowest of all three materials, shows excellent overall contact with the sheet. (Evolon® and Tek-Wipe) the most hydrophilic of all three materials, shows the least homogenous contact. Poor contact can compromise more and uneven washing. Nevertheless, further testing with these materials proved that for the present treatments the sheets were adequately-for instance by compressing them together under the blotter to prevent damage to the object. The washing of the entire wash can be greatly improved.

DETAIL IMAGES FROM VERSO OF WASHED PRINT FRAGMENTS

Cotton Evolon® Tek-Wipe

Cotton Evolon® Tek-Wipe

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RESULTS & DISCUSSION

Other applications of cotton blotter paper have been washed in a GORE-TEX® sandwich—the object is very thoroughly humidified—for instance by compressing them with a brayer—and if the object is strongly humidified but must be handled, the layers are reduced—for instance by compressing them together under the blotter. Nevertheless, further testing with these materialsproved that for the present treatments the sheets were adequately—for instance by compressing them together under the blotter to prevent damage to the object. The washing of the entire wash can be greatly improved.

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