University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Resources from the IQSC | International Quilt Study Center

2-2-2004

Answers to Frequently Asked Questions Concerning the IQA Special Report on Adhesive-Containing Quilting Products

Janet Evenson
University of Nebraska-Lincoln

Patricia Cox Crews
University of Nebraska-Lincoln, pcrews@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/iqscresources

 Part of the Social and Cultural Anthropology Commons

Evenson, Janet and Crews, Patricia Cox, "Answers to Frequently Asked Questions Concerning the IQA Special Report on Adhesive-Containing Quilting Products" (2004). *Resources from the IQSC*. Paper 2.
http://digitalcommons.unl.edu/iqscresources/2

This Article is brought to you for free and open access by the International Quilt Study Center at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Resources from the IQSC by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Answers to Frequently Asked Questions Concerning the IQA Special Report on Adhesive-Containing Quilting Products

by
Janet Evenson, Ph.D. and Patricia Crews, Ph.D.
University of Nebraska-Lincoln

Why didn't the report contain a complete description of the experimental methods, the actual data, and a reference list?
The report published in IQA was written for a general audience rather than for the scientific community. Therefore, we did not include a complete description of our experimental procedures, nor did we include tables with all the data. This would have lengthened the article beyond the space allocated for it in the IQA Journal. Neither IQA nor the authors expected so many readers to be interested in seeing all the data. However, a more complete summary of the research containing tables of data and a more thorough description of the experimental methods will be published in *2003 American Institute for Conservation Textile Specialty Group Postprints*. Copies of *AIC Postprints* will be available for sale on the AIC website in 2004.

Was this research replicated?
Yes, we conducted three replications of every experimental procedure.

Why was such a high temperature (135◦C) used in the accelerated ageing tests?
In order to accelerate ageing, one must speed up chemical reactions. Raising the temperature is an efficient way of speeding up chemical reactions for accelerated ageing tests. We selected a protocol for the accelerated ageing tests that was developed by the American Association of Textile Chemists and Colorists (AATCC) and one that has been used to predict the ageing of textiles for decades. A temperature of 135◦C was specified in the AATCC protocol.

Furthermore, 135° C falls within the temperature range recommended by the manufacturers for applying the fusible webs and battings. Some of the manufacturers recommended that a silk setting (121-135° C) be used, others recommended a wool setting (149-163° C) for applying the products. We monitored the ironing temperature periodically throughout the fusing process. (The temperature ranges for settings on irons came from AATCC Test Method 133-1999: Colorfastness to Heat: Hot Pressing.)

Finally, a temperature of 140◦C was one of the temperatures presented by Dr. Robert Feller, director emeritus of the Research Center on the Materials of the Artist and Conservator at Carnegie Mellon Research Institute, along with accelerated ageing times for estimating approximate years of intended lifetime at room temperature for various classes of materials.

(Dr. Robert Feller is director emeritus of the Research Center on the Materials of the Artist and Conservator at Carnegie Mellon Research Institute and regarded as a giant in the field of conservation. After earning a Ph.D. in physical-organic chemistry from Rutgers University, he joined the Carnegie Mellon Research Institute as senior fellow of the National Gallery of Art Research Project on artists' materials. He has written one of the most useful overviews of accelerated ageing: *Accelerated Ageing: Photochemical and Thermal Aspects*, Research in Conservation Series, Getty Trust, 1994.)

Does the accelerated aging process truly affect fibers, polymers, dyes, finishes, adhesives and so forth in the same way that the passage of time will?
Accelerated ageing and accelerated light exposure tests are useful experimental protocols for predicting the useful service life or probable life span of products. They are used by the textile industry, automotive industry and by museum professionals. At the same time, it must be

acknowledged that there are well-recognized difficulties with these tests. Some fibers, polymers, dyes, finishes, and adhesives behave differently than predicted by accelerated aging tests – some products perform better and some worse. Although much progress has been made in the past twenty years towards refining accelerated ageing tests, more work remains to be done.

Have museum curators and conservators observed damaging effects of adhesives in textiles found in their collections?
Yes, that is one reason we decided to conduct this study. Many curators of textiles and dress, as well as textile conservators, have reported undesirable stiffening and yellowing of textiles treated with adhesives and consolidants in the past. These have been reported in a variety of publications including these prestigious publications: *Journal of the American Institute for Conservation* and *Studies in Conservation* (J. of the International Institute for Conservation).

What other tests have been developed to simulate ageing?
Dr. Robert Feller, director emeritus of the Research Center on the Materials of the Artist and Conservator at Carnegie Mellon Research Institute, has written one of the most useful overviews of accelerated ageing. (*Accelerated Ageing: Photochemical and Thermal Aspects*, Research in Conservation Series, Getty Trust, 1994) A number of protocols are briefly described or cited in his publication.

Why was undyed, bleached mercerized cotton from Testfabrics used? Would the results be similar for blends, or dyed and printed fabrics?
We purchased cotton muslin from Testfabrics so that others who wished to replicate this study could buy the same fabric. Testfabrics is a supplier used by textile scientists and conservation scientists nationwide as the source of fabric for experiments because it has proven to be a trusted and reliable source.

We decided to use bleached cotton muslin in this study because many quilts historically have contained large amounts of undyed cotton muslin. In addition, discoloration would be more visible and easily measured on bleached, cotton muslin than on dyed or printed cottons.

Why were the fusible webs sandwiched between fabric and batting instead of between two fabrics as is the more common practice for appliqué?
We sandwiched the fusible webs between fabric and batting for two reasons.
First, we know of quilters who have used the fusible webs to quickly “baste” a quilt top to a batting using a fusible web. So it is a way that fusible webs have been used, despite manufacturers’ suggestions otherwise. In fact, fusible battings evolved as manufacturers learned that quilters were using fusible webs for this purpose.

Second, for the purposes of controlled comparison of products included in this study, we deemed it preferable to fuse a top fabric to a batting in all specimens.

Why weren’t all commercially-available fusibles and adhesive-containing products for quilters tested?
Testing is very expensive. We simply could not afford to include every commercially-available product. Therefore, we included a selection that represents some of the most widely available products.

Did you use an unusually heavy application of spray adhesives in your research?
No, we made every effort to apply the products uniformly and in an amount that would reasonably simulate actual use.

Why did the fusible battings age safely, while the fusible webs did not?
The adhesive resins used in the fusible battings are different compounds than the ones used in the fusible webs. Some compounds are much more stable than others.

Has the research been submitted to a peer-reviewed journal?
The research was presented to our peers in at the June 2003 annual meeting of the American Institute for Conservation Textile Specialty Group. It will be published in the proceedings of that meeting in the *2003 AIC Textile Specialty Group Postprints*. The editors of the publication review each paper prior to publication. In addition, we plan to submit a manuscript regarding this research with a detailed description of the statistical analysis of the data to a peer reviewed journal in the near future.