

Preface

Ute Henniges* and Sigrid Eyb-Green

Editorial: Encapsulation and Lining – Evolving Approaches to Paper Conservation

<https://doi.org/10.1515/res-2025-0024>

Published online August 29, 2025

Many paper-based materials inevitably become brittle and fragile over time, and conservators have long sought solutions to enable the continued use and preservation of archival documents while protecting them from further deterioration. The development of polyester film encapsulation in the 1970s represented a significant breakthrough, offering a reversible method for mechanically supporting weakened documents while maintaining visual access to their contents.

This special issue of *Restaurator* brings together three complementary studies that examine different aspects of protective treatments for paper-based cultural heritage objects, providing both retrospective analysis and innovative approaches to document preservation.

Gates and McGuiggan present the first systematic evaluation of encapsulation practices across United States paper collections, approximately 50 years after the technique's introduction. This comprehensive survey reveals high levels of satisfaction among conservators and collection managers, with most reporting minimal deterioration problems with encapsulated documents and their respective encapsulation materials.

The technical foundation for informed material selection is strengthened by a comprehensive review on gas and vapor permeability compiled by McGuiggan and Gates also featured in this issue. Understanding gas and vapor transport through polymer films is crucial for conservators, particularly given concerns about volatile degradation products potentially becoming trapped within encapsulations. The research reveals striking differences between materials – over seven orders of magnitude variation in permeability – enabling evidence-based decisions about material selection for specific preservation goals.

***Corresponding author: Ute Henniges**, Staatliche Akademie der Bildenden Künste Stuttgart, Stuttgart, Germany, E-mail: ute.henniges@abk-stuttgart.de

Sigrid Eyb-Green, Akademie der bildenden Künste Wien, Vienna, Austria

While encapsulation provides excellent physical protection, many historical documents cannot be safely treated with conventional aqueous conservation methods due to water-sensitive media or concerns about dimensional changes. Procházková et al. address this challenge through the development of Butvar[®] B-76-coated Japanese tissue for non-aqueous lining. Using dimethyl carbonate and *n*-hexane as activating solvents, this method opens new possibilities for treating documents unsuitable for traditional approaches while maintaining structural integrity and reversibility.

Together, these studies illustrate the multifaceted nature of contemporary paper conservation practice. The survey provides crucial feedback on established techniques, the lining methodology expands treatment options for sensitive documents, and the permeability review offers scientific foundation for material selection. As the field continues to evolve, such integration of practical experience, innovative methodology, and scientific understanding becomes increasingly important for ensuring the long-term survival of our documentary heritage.

Ute Henniges and Sigrid Eyb-Green
Editors in Chief