

## ABSTRACT

The purpose of this research is to delve into the intervention methodologies and criteria applied for adhesion and consolidation of uncovered contemporary paint layers, as well as the study of the aging behaviour of various polymers and their potential viability in the treatment of vinyl paint, a type of binding agent widely used in contemporary painting.

Stability problems presented – lifts and powdery – compromised the integrity of the work and pose treatments of limited reversibility and high technical complexity. Besides optical type changes and the effect of the concept of the work, physical, chemical and mechanical processes can take place since introduced polymers should provide correct adhesive and cohesive bonds, and also compatible and durable bonds. We must therefore select safer systems and more stable materials.

The theoretical part starts with the analysis of the state of the question, the establishment of objectives and the description of the methodology. After an introduction on materials, techniques and finishes of contemporary paint, the main typologies and causes of change are analysed. The following chapters are devoted to the polymers used, the physical and chemical principles involved, and the current techniques and systems of intervention. All of this has been illustrated with multiple examples from sources of study and intervention of works or the survey conducted with experts in the field.

In the experimental part, a comparative study of optical stability has been performed: chemistry (pH) and mechanics versus the accelerated aging of 16 natural and synthetic polymers. Finally, it has been included a section with the assessment of the optical changes and the degree of adhesion and cohesion obtained before and after aging, after applying three consolidants and three adhesives on test tubes that simulate powdery (high PVC layer: vinyl medium, titanium white and ultramarine blue) and lack of adherence (low PVC layer: commercial titanium white vinyl paint).

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