Material study and conservation of face-mounted photographs and digital prints

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Introduction

This research focuses on the field of contemporary photography - a discipline fully integrated into the contemporary art scene. In recent decades contemporary photography has incorporated new processing media materials, original mountings and novel processing techniques. Particularly since the 1980s, technical advances in the photography industry have allowed the manufacture and printing of large formats that require new physical protection and new ways of exhibition presentation. The number of such works has been progressively increasing in contemporary photography collections (PÉNICHON et al, 2011: 9-20). For this reason, this research examines the need to increase our knowledge of these new photo mounting methods, often unfamiliar to the conservator.

The range of contemporary photograph mounting techniques is large, and to perform them a wide range of materials can be used. Among them, face-mounting, known as Diasec®, is one of the most widely used and its process is protected by the patent system (SOVILLA-BRUHLHART, 1970-1973). Several varieties of this kind of mounting (SEGEL, 1983; ATTILA, 1989; CLAUDIO CESAR, 1997) have been developed by photographic laboratories, with striking aesthetic results. However, they have specific conservations problems in terms of stability, due to nature of the materials, their manufacturing process, and other assembly issues (JÜRGENS, 2001: 6).
Patents on the manufacture process of face mounted photographs

To perform a protocol of preventive conservation on collections of contemporary photography with face-mountings it is necessary to know the sequence of technological advances that have occurred in recent decades. Thus, the methodology employed in this research starts with an extensive study of documentary sources - both scientific literature and original documents (e.g. original patents of invention) - as well as technical documentation and materials provided by manufacturers and suppliers.

Patents research complements the information provided by other bibliographic sources, such as technical information supplied by manufacturers (SAN ANDRÉS; GARCÍA FERNÁNDEZ-VILLA, 2008). This type of literature gives us information on the manufacturing processes and the materials used in this type of mounting.

Ongoing research

At present, the research is focused on a relevant field survey, verified by conducting interviews with various artists working with face-mounting, photo laboratory professionals, as well as experts in conservation of contemporary photography. The purpose of these interviews is to know at first-hand the different conservation problems that have been detected in this type of work.

Fig. 1 Damages on face-mounted photographs

(A) delamination, (B) abrasions, (C) cracking and (D) damages on the backing board
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Simultaneously, scientific analyses of the materials that are involved in this kind of mounting have been performed in the Materials Laboratory of the Faculty of Fine Arts, University Complutense de Madrid. They include accelerated aging of the materials used in face-mounting and several analyses revealing the nature of the material, structure and morphology, using techniques as FTIR-ATR, MO, ME, MEB (BSE) and colorimetric analysis. The assessment of long-term performance through the application of artificial accelerated aging includes variables as temperature (T), temperature and humidity (T/H), ultraviolet (UV) and both xenon and the combined action of T / H and bow-xenon protocol (aging test standard ISO 9142: 2003). Once all these trials are completed, the physical and chemical changes undergone by the materials after aging will be studied, in order to identify changes and their effect on the state of conservation.

The comparative study of face-mounting materials is essential for the correct interpretation of all results obtained with the different techniques of examination and analysis on the materials investigated (before and after artificial accelerated aging), to establish its durability and long-term behaviour. From these results conservation and exhibition parameters will be correctly established.

Fig. 2 Accelerated ageing

Accelerated ageing of samples of various materials used in face-mounting in the bow-xenon chamber.
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Conclusions

Despite the fact that traditional photograph collections have been subject of extensive research, providing strict handling and conservation protocols, contemporary face-mounted photographs lack well-defined conservation indications up till now. Damage
such as scratches, abrasions, loss of shine, yellowing or delamination can often be found on these new mountings during exhibitions.

Conservation of face-mounted photographs is a very complex matter that requires specific research to determine the materials used in their manufacture and their conservation behavior. As previously shown, the materials involved in their manufacture can be diverse and the way they are used can critically influence their conservation.

The research undertaken reveals interesting data in relation to the documentation and material study of face-mounted photographs. Historical patents provide excellent information about their materials and their manufacture process. Furthermore, scientific examination and accelerated aging tests performed showed specific problems with some of the materials used in this kind of mounting, as occurs in the case of Forex® frequently used as backing boards in face-mounted photographs.

BIBLIOGRAPHY


ABSTRACTS

Face-mounting of photographs is a method of exhibiting contemporary photography which is widespread nowadays in museums and galleries, and which presents specific problems in the field of conservation and restoration. The research presented here includes the study of its main constituent materials, considers different types of sources and documentation, and also addresses analysis and accelerated aging tests which are currently being developed.

Le montage par la face des photographies est une méthode d'exposition contemporaine de la photographie qui est bien établie aujourd'hui dans les musées et galeries d'art et qui présente des problèmes spécifiques dans le domaine de la conservation et de la restauration. La recherche présentée ici inclut l'étude des principaux matériaux utilisés, considère différentes sources et documentations et aborde également l'analyse scientifique et les tests de vieillissement accéléré qui sont actuellement en développement.

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