

Introduction

In this poster we will try to count and study each case of the new supports most commonly used to remount a deposited mosaic.

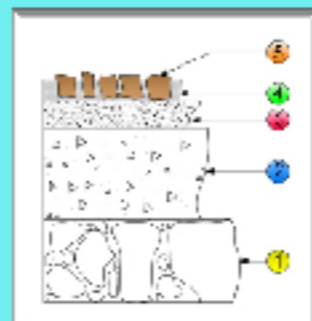
Antique Support

The mosaic is a technique of coating and decoration of an edifice's floors built on a solid support in order to reduce the impact of the environment aggressions and the human being trampling.

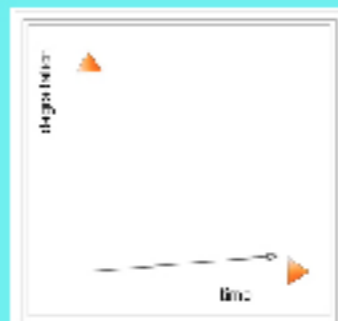
There is not a typical model of a mosaic preparatory layers stratigraphy but it varies according to the period and the workshop of a definite time, but generally the most common model consists of four preparatory layers:

- 1- STATUMEN: it is the foundation layer composed of large stones that serves to stabilize the soil.
- 2- RUDUS: it is the layer situated above the statumen, composed of a lime mortar with large aggregates.
- 3- NUCLEUS: it is the layer that is in direct contact with the bed of pose, less thick and composed of a mortar based on lime and fine aggregates.
- 4- BEDDING LAYER: this is the layer in which the tiles are inserted. It is made of a mortar very rich in lime which allows it to remain soft and malleable for a long time period.

The beginnings of the 19th century were the period of the apogee of archaeological excavations which brought to light a significant number of pavements of ancient mosaics that were either exposed, stored or relocated on site, and since the Conservators become more and more concerned with the need to reassemble the mosaics on a new basis, believing that this is the most common and effective way to keep mosaics detached from their original locations.



stratigraphic section



degradation curve as a function of time

Legend:

- 1 Statumen
- 2 Rudus
- 3 Nucleus
- 4 Bed of pose
- 5 Tessellatum

stratigraphic layers in situ

Cement support

The technique of reassembling antique mosaics on a reinforced concrete panel has been used since the beginning of the 20th century. These panels are generally of medium thickness, they are exposed to the ground as well as to the wall and also in the outdoors sites thanks to their rigidity and their heavy weight.

This type of support has produced a set of problems related to the mosaics component materials deterioration.

The reinforced concrete panels deterioration mechanism:

- The structure iron oxidation causes an increase in the bars volume.
- The relative scale presence in the cement.
- The water penetration by micro fractures

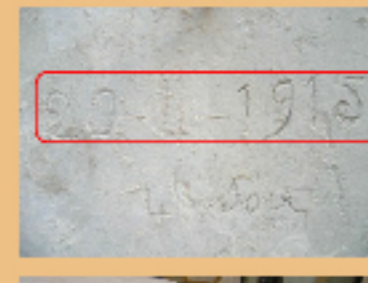
These deterioration factors will exert pressure on the tessellatum layer causing:

- The panel fracturing.
- A surface lifting.
- Mosaic distortion.
- Edges lifting.
- Separation between the assembled mosaic fragments.
- Separations between layers.
- Tiles loss.



fracturing of the

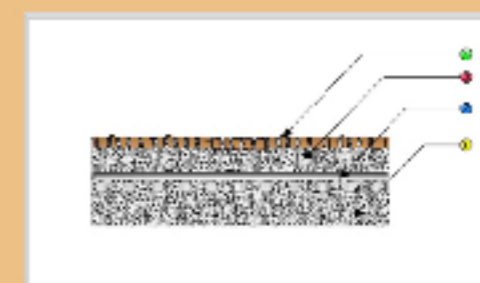
The technique of reassembling the mosaic on reinforced concrete panel has its disadvantages especially due to its authenticity and resistance, so it can not constitute a solution for the mosaic preservation in the long term. The proof is that the majority of the deposited and reassembled mosaics on a cement support, in situ or exposed, are much damaged. This has led to the idea of finding an alternative solution.



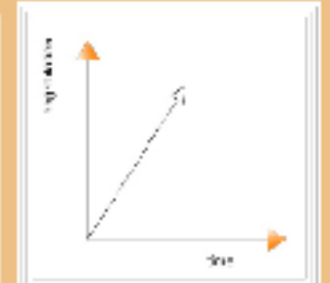
cement support



panel fracturing



Layers section



degradation curve as a function of time

Legend:

- 1 cement mortar
- 2 metal frame
- 3 cement mortar
- 4 Tessellatum

Plaster support

This type of support was used from the 1980s until now. One of the conveniences of this panel is its light weight, although it is rather bulky.

Unlike panels raised on a reinforced concrete support, panels made with plaster can only be kept in museums or deposits vertically.

This panel is reinforced by the tow (material consisting of the filaments taken from the stem of the plants) or sometimes by means of burlap, mounted on a wooden frame and reinforced by rafters and wooden cleats and sometimes with slats metal.

According to the experiences of the Southern Mediterranean countries, this type of support has proved to be relatively efficient with a life span of approximately half a century and can exceed it if the mosaics are kept in a moisture-protected environment. Once the conditions are broken the plaster goes problematic especially to the presence of the moisture which is its worst enemy. Thereafter the anomalies that can be observed are:

- Detachment between the mosaic layers.
- Uplift and / or depression.
- Surface cracking and fracturing.
- Tiles loss and detachment.
- Inlays and efflorescence.
- Rotating wooden frame.
- Plaster crumbling.



Rotating wooden frame.



Degradation curve as a function of time

After decades of use, this panel type did not obey to the conservators' ambitions who continued their search to win this challenge.



Plaster support



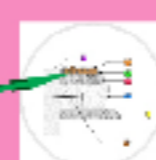
corrosion of slats metal



Layers section

Legend:

- 1 plaster
- 2 tow
- 3 plaster
- 4 tessellatum



Legend:

- 1 slats
- 2 tow
- 3 plaster
- 4 tessellatum
- 5 wood
- 6 galvanized steel
- 7 fine plaster

oxidation of slats metal

aerolam support

Aerol panels are commonly used in modern conservation, indeed its use begins since the mid-1980s.

Conservators use it mainly for inside preserved mosaics and can be installed on the wall as on the ground thanks to its structure which serve to reinforce the resistance in vertical compression of the panels while guaranteeing a maximum lightness.

It should be noted that this type of panel is not accessible for some countries because of its very high cost.

The panels in aerolam consist of an aluminum (anodized) layer, a lime-based mortar compatible with the original one and a bonding layer (Puzolan - resin).



execution aerolam support



aerolam support



Layers section

Legend:

- 1 aerolam
- 2 bonding layer
- 3 lime mortar
- 4 Tessellatum



degradation curve as a function of time

Conclusion :

As a conclusion, the mosaic reassembling operation on a new support whatever its type damages the mosaic by losing a large part of the original materials, also flatten and inevitably enlarges the surface of the tessellatum which results in a loss of authenticity.

This practice unfortunately continues today even though it is considered inappropriate.



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