

What Comes to Mind When You Hear Mosaic? Conserving Mosaics from Ancient to Modern

THE MOSAIC OF THE FIGHTERS IN OSTIA ANTICA Historic data through the conservation work

Anna Borzomati*, Claudia Fiorani**

*Restorer, graduate IsCR, Via Padre Angelo Paoli, 24 00144 Rome, Italy, claudiafiorani@hotmail.it

**Restorer, graduate IsCR, Viale Libia 25 00199 Rome, Italy, anna.borzomati@gmail.com

Abstract

This contribution describes the conservation work carried out in 2015-2016 on the 2nd century A.D. floor mosaic named "Lottatori" (fighters), located in the Archaeological Site of Ostia Antica. The mosaic floor is made of white and black tesserae and has been modified and restored since the late antiquity. The state of conservation of the mosaic was strongly compromised due to degradation factors characteristic of the artifacts located outdoor and exposed to adverse weather conditions. These factors have caused, during the centuries, the detachment of a large number of tesserae from their setting bed and the alteration of previous conservation interventions.

The study of the previous restoration, the comparison with the documentation and the archive photos allowed to select the methodologies and materials that were more suitable for the conservation of the Roman mosaic. The lifting and repositioning of several areas of the mosaic, the depth consolidations of the remaining parts, the relocation and re-adhesion of many erratic tesserae, the repeated biocidal treatments and the ultimate protection were performed.

The conservation work-site has attracted considerable interest and has renewed the curiosity of tourists and scholars improving the approach, especially didactic, towards this work, really important for the site of Ostia Antica and for our history.

The "Lottatori" mosaic belongs to the 2nd century AD, and is located on the east side of the Gym within the Terme di Nettuno - IV Region complex.

The decoration consisted of four pairs of athletes practising boxing and the fight known as pancrazio as shown in the details of clothing and equipment typical of such disciplines.

The mosaic of 56 mq was made of white and black tiles with an irregular shape of approximately 1,00 x 1,20 cm. White tiles are made of limestone, black tiles of basalt stones.

The figures are emphasized with black tiles and the anatomical details are highlighted with a row of white tiles. The characters stand on a white background delimited by a black band followed externally by an alternation of additional white and black bands.

The preparatory layers consist of a first layer of mortar made of lime, sand, pumice, broken stones and bricks (rudus) and a second layer of mortar made of lime, sand and coarse grain with coarse granulometry (nucleus).

The tiles are enticed to the nucleus with a mortar probably made of calcium lime and calcium carbonate.

The "Lottatori" mosaic has undergone several restorative interventions over the centuries. The oldest, presumably maintenance, should date back to the 4th century and were highlighted in areas with white and black tiles in scattered order.

In recent times, among the best known is the one in the '70s where the figure of the wrestlers was removed and replaced by 4 rigid reinforced concrete panels. The panels were placed on a binder-free sand layer following the original placement of the figures. There are, however, no definite dates on the execution of large grit and cement fillings in the absence of the three figures on the south side. According to the historical photos taken in the Photographic Archives of the Superintendency, they were already present at the time of the implementation of reinforced concrete panels.

The most recent conservative intervention dates back to 2003 and, in addition to the partial reconstruction of the sitting athlete and the boxer standing on his left, it included reconstruction of some perimeter areas as well as the repositioning of some parts that showed significant deformations of the mosaic cloth.

The state of conservation of the mosaic was particularly critical, already during the first inspection. Different vegetative phenomena (microorganisms and upper plants) had interfered with the mosaic surface up to the tiling bed. There was a general and widespread impairment of the adhesion of the dowel to the lining layers, with hundreds of detached tiles.

In addition, there was a large amount of dust transported by the wind and rain especially in areas with irregular surfaces.

The damage resulting from the colonization of the biological patina was evident especially with regard to the disintegration of the mortars caused by the mechanical stresses of the radical apparatus. The microorganisms and the upper vegetation were remarkably developed at the perimeter zones and on the border brick walls of the area.

The mechanical action of the biological patina together with the chemical / mechanical action of water and wind, coupled with the overheating that undergoes the mosaic apparatus in the summer months, have resulted in the disintegration and spraying of the preparatory layers (rudus and nucleus) and the detachment of a considerable amount of weave from their lute mortar.

The most significant degradation form was related to a general and advanced loss of adhesion of the mosaic over the laying bed.

The surface was characterized by a considerable amount of areas that had concave and convex deformations. The first due to the complete disintegration of the original nucleus and the backdrops with inevitable collapse of the mosaic rug. The second ones, concentrated along the perimeter of the panels that were set up in the 1970s, were the result of a repositioning of tiles during the 2003 restoration campaign.

Very important was the deformation that was on the north side at the top of the right boxer and involving his face, right arm, and part of the left arm.

Most probably such deformation is due to the failure panel's resistance to the weight of the iron frame drowned within the cement substrate. The reinforcement iron rods traced inside the cement panels are of a much smaller thickness than those used in the areas. The structure was found to be less rigid and more easily attacked by oxidation and rust corrosion over the years.

The deterioration of the original mortar, with consequent loss of matter, had partly caused the expansion of the interstitial spaces between the tiles, especially in areas that had been detached in previous years.

The restoration intervention carried out between September 2015 and April 2016 was carried out in several phases.

Preliminarily, the removal of dry inconsistent surface deposits with soft brushes, scalpels and small brushes was carried out with particular attention to the areas with obvious detachment of the musive tesserae.

Subsequently, biocidal treatment was performed in two consecutive steps at a distance of 7 days. For the microorganisms a 3% solution of quaternary ammonium salts was used, while for the weeds a 2% herbicide.

Patterns and weeds were subsequently removed mechanically and where possible the surface was rinsed with a highly diluted surfactant.

Along the entire perimeter outside the mosaic, the ground accumulated over time has been removed and a gradient is made to allow the water to drain away, avoiding stagnation on the misty surface or in the immediate vicinity.

At the first stage of removal of superficial deposits and biological patinas, the consolidation of the entire fabric was carried out, with the exception of the areas involved in posting operations.

The consolidations were carried out with injections of a low-level hydraulic mortar supported by a rapid intervention of plastering support for movable tiles.

The detachment and repositioning of completely disassembled tiles to the preparatory layers were carried out in two different operating modes:

- direct method or by enticing the tiles one by one on a suitable mortar laid in the pavement lacuna
- indirect method, instead placing the opposite (head) tiles on a transparent transparency sheet with an adhesive tip and then folding them all together within the mosaic lacquer.

At this stage, transparencies were created that would guarantee the correct repositioning of weaving files over the surrounding parts.

The advanced state of degradation and the complete loss of planarity of many parts of the mosaic fabric forced the choice to perform detachments of large mosaic areas.

The detachment operations were demanding and complex and the choice of the materials used was conditioned by the environmental conditions at which the article was exposed.

The decorative surface was covered with acrylic adhesive in solution and detached with the help of metal lances and wooden support boards for the overturning of the pieces. In order to be able to insert the chains it was necessary to open gates, "sacrificing" a few rows of tiles subsequently repositioned.

The back of the dissected portions, which are also quite large, has provided various types of mechanical cleaning with the aid of scalpel, chisel and hammer, microtrapani and frull for thicker cement mortars.

The bonding mortar in most of the affected areas was completely disintegrated and no longer curable, and was then removed after documenting its degradation by taking photographs.

Prior to the realization of new screeds, the surface, in part degraded, was consolidated with a microacrylic resin applied in two phases. The screeds were made with a mortar that provided the use of a specific hydraulic lime for the thicknesses needed.

The mortar prepared for the repositioning of the stacks was instead made using materials that allowed the correct plasticity of the dough. Each staggered portion was mapped on the charts. In particular, at the central zone with the characters, scales of 1 : 1 were used to keep the figurative bands running and the perimeter reference.

The cuts made have highlighted the underlying situation by highlighting the presence of numerous metal elements. Iron rods where possible have been removed and elsewhere have been treated with an oxidation inhibitor and then painted with an acrylic resin in solution to make them waterproof and slow down their degradation.

After cleaning and consolidation operations, cleaning operations were carried out.

The removal of partially adherent deposits was carried out with water, sponges and brushes. In some areas, inorganic salts have been used.

After the repositioning of the shutters, organic solvents were needed to remove bandages / wrapping. The final phase of the restoration project provided for interstitial plastering on the totality of the surface, which gave a uniform reading of the product.

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After the repositioning of the shutters, organic solvents for the removal of bandages / bleaching had to be used. The final phase of the restoration project provided for interstitial plastering on the totality of the surface that provided uniform texture reading. Two chrome-plated mortars were created to distinguish white patches from those with black tiles. The mortars were made with a mixture of inerts combined with a hydraulic premix.

Along the perimeter, the few gaps of mosaic tiles were filled with an imitation mortar of the nucleus, slightly undercut.

The plastering and perimeter grouting have given readiness to the article.

In order to prolong the result obtained and to remedy as far as possible the damage caused by the meteoric waters, a hydrophobic siloxane protecting was followed, followed by a final biocidal treatment.

Restoration works were completed in April of 2016.

In the present conservative conditions of the site (lack of coverage and an adequate rainwater outflow system) conservative intervention cannot be considered as a solution to the deterioration phenomena found.

It is suggested, as already pointed out and in agreement with the Directorate of Works, to plan regular maintenance, which involves the control of superficial deposits, the treatment of biological patinas and the verification of the presence of the protector.



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