

BAROQUE TARSIA IN VENICE: TWO CASE STUDIES OF A PARTICULAR MAKING PROCESS

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Foreword

Baroque *tarsia* is a kind of ornamental floor that can be found in every type of building in Venice, whether religious, public or private. Nevertheless, few studies have been carried out in relation to the process of their construction or their development over time. Comparisons between Renaissance and Baroque floors in Venice and more in-depth studies concerning their original materials are still in the early stages, and are still mainly focused on the surface of the floor. This paper aims to shed light on the particular process of creating baroque *tarsia*. Some recent conservation works have brought forth a wealth of information that can be compared with the data gathered during previous works on similar floors. In addition, we would like to present these objects with their tridimensional and complex structures, as there are layers of different materials under the marble slabs that help preserve the floors from moisture and salts. Floors were one of the most expensive types of architectural surface¹ but they are also often subject to erosion, moisture and high tides, so many efforts have been made to retain their aesthetic characteristics and strength.

Basilica di Santa Maria della Salute

The Basilica di Santa Maria della Salute is one of the most iconic Baroque buildings in Venice. It was designed by Baldassarre Longhena, who supervised its construction from 1632 until his death in 1687. Archival research offers us substantial information about its construction process, but very little concerning the floors. Extensive renovations took place inside the church in 2013, during which time large *tarsia* surfaces were detached to allow for conservation measures and to insert an under-floor heating system. This intervention allowed us to observe the construction techniques used for the floor in detail. The following descriptions concern the most interesting technical aspects observed.²

The Sanctuary has a marble floor composed of many types of local limestone and archeological or imported materials. The slabs were inlaid over many different kinds of mortars. *Cocciopesto* was generally used as a unique layer, often using *terracotta* elements to reinforce the mortar. Therefore, the majority of slabs were laid over grouts composed of slaked lime and sands with non homogeneous compositions, applied in two layers.

We often find small fragments of the stone slabs between the two layers, which were clearly perfected one by one *in situ* to obtain an extremely precise settlement. It is important to note that the different mortars were not used in regular ways: they were not chosen according to the thickness of the slab nor to the area of the settlement, and we often found three different grouts side by side.

The floor with the most complex structure is that of the Main Altar. The *tarsia* elements composing stars drawings were laid over bigger limestone slabs, called *steleri*, a solution that served to strengthen the thin and fragile *tarsia* marble elements. The stars are encircled by a square frame of thicker white marble elements, enhanced by thinner slabs of colored breccia. The settlement was mostly achieved by the use of a mixture of rosin and limestone powder³, that was applied while hot. A small number of slabs were laid over a thin, white mortar and were probably the last elements to be settled as the mortar allowed for longer working times, which were useful in terms of refining the elements that finish off the composition.

Basilica dei Frari, S. Antonio Altar

The Sant' Antonio Altar floor in Santa Maria Gloriosa dei Frari has many similarities to that of the Basilica della Salute. The altar was designed by Longhena and the star drawing is very similar to that of the Main Altar in the Basilica della Salute. Unfortunately, we do not have any information about the floor design and its past conservation history. The floor dates back to 1673, and is extremely damaged in the areas next to the church walls and altar steps due to the moisture and salts arising from the ground. Moreover, a large amount of the slabs were re-laid in the past using gypsum binder, which dramatically accelerated their state of preservation.

Detaching these slabs allowed us to observe that the *tarsia* elements were placed over huge Istrian stone *steleri*, each one containing ¼ of a star. The only original binder found was the mixture of rosin⁴, which helps to protect the slabs from moisture thanks to its hydrophobic properties. The Istrian slabs are isolated from the ground thanks to a structure consisting of small brick walls that raise the floor up from the ground.

All these solutions helped to preserve the stone materials from moisture and high tide. Most of them are made up of non local materials and are very thin, and indeed some of the white marble slabs are just 0.4 cm thick. This structure was generally adopted for the altar floors⁵ and stairs, and appears to be suitable for preserving them, as the altar floor is in relatively good condition with the exception of the floor area directly in contact with the ground.

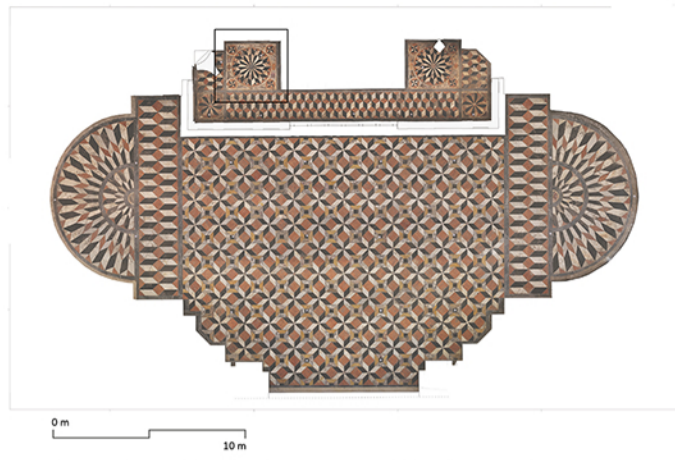
However, the rosin mixture has not been consistently well preserved throughout. It often has a dark brown color instead of its former bright yellow, and is now soft, sticky and completely wet, with its adhesive property mainly lost. Only a small percent looked firm, with a crystalline appearance. These better preserved areas may be due to the use of a smaller quantity of plasticizer, typically honey, wax or molasses, which was non homogeneously blended in the mixture during the settlement. A similar condition was also observed in the Basilica della Salute, where the rosin was dark brown, dusty and brittle with few adhesive properties.

Conclusions

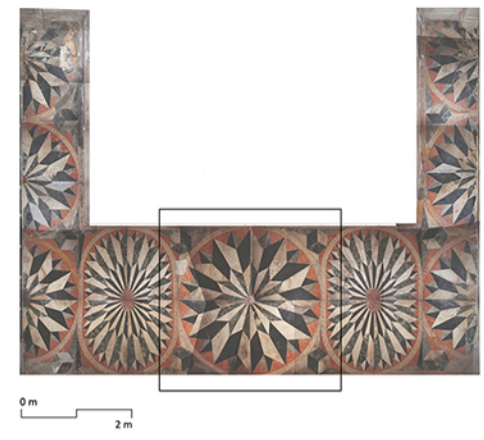
The techniques described thus far are consistent with those implemented for other comparable floors. Indeed, the use of raised structures for altar floors and the wide employment of rosin mixtures are frequently observed in baroque marble floors in Venice. However, this first comparison raises new questions about the beginning and development of these particular construction processes. For example, it is still not known how the employment of large *steleri* to support *tarsia* floors first began and was developed.

An even more interesting issue is that of the widespread use of rosin as a binder. This natural resin has good hydrophobic properties and is a strong adhesive when mixed with a proper plasticizer. Many recipe books from the Renaissance contain instructions on how to use rosin mixture as a glue for stone works, especially for Florentine *commesso*.⁶ Nevertheless, we still do not know how this usage spread and developed in Venice, and how it was adapted so effectively to the environmental characteristics and local aesthetic language. Finally, the good qualities of rosin rapidly deteriorate as the material ages, and we still have no data about the ageing process of rosin used as floor binder when salts and moisture are the main ageing factors. Is it possible to conserve this natural material after centuries or is replacing the former mixture the only way to preserve the floors' structural integrity?

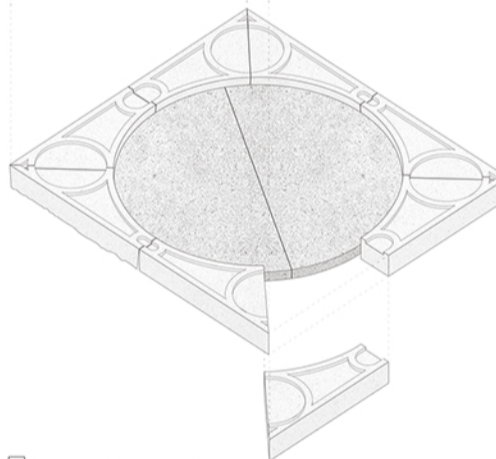
We are still in the early stages of a comprehensive study of Renaissance and Baroque floor. The closer we observe these magnificent objects, the more questions are raised. In order to contribute to this research, our aim is to highlight the complexity of these objects, which is not limited to their surface.



Basilica di Santa Maria della Salute: Sanctuary and Main Altar stone floor

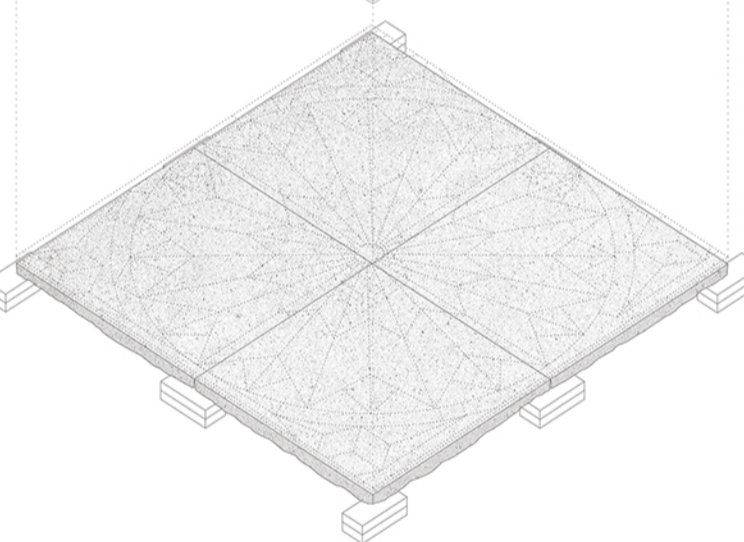
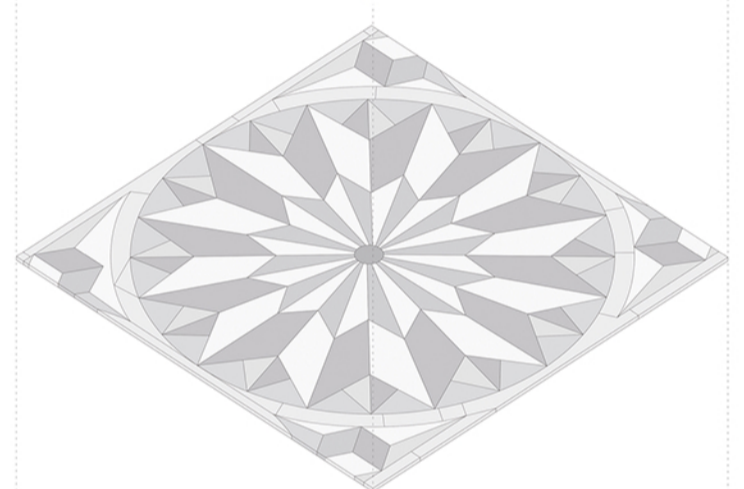


Basilica dei Frari, S. Antonio Altar floor



□ Stone slabs settled on a rosin layer
■ Stone slabs settled on a grout layer

0 m 1 m



Purchaser: Diocesi Patriarcale di Venezia
Ministry of Culture supervision: Arch. Chiara Ferro, Rest. Lucia Bassotto;
R.U.P.: Ing. Michele Artusato
Project management: Arch. Davide Beltrame
Project and supervision: Arch. Giuditta Russo
Execution: Alfier s.r.l.
Chief Conservator: Rest. Elisa Pannunzio

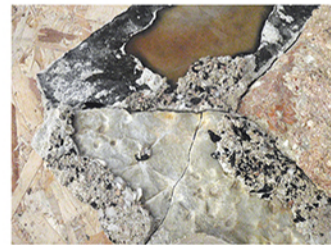
Purchaser: Parrocchia di Santa Maria Gloriosa dei Frari
Ministry of Culture supervision: Dott.sa Grazia Fumo, Rest. Lucia Bassotto
Execution: Alfier s.r.l.
Chief conservator, project: Rest. Elisa Pannunzio

Poster floors drawings: Arch. Davide Favaron

1 W. Walters, *Pavimenti rinascimentali a Venezia*. In: *Pavimenti lapidei del Rinascimento a Venezia*, a cura di L. Lazzarini, W. Walters. Cierre Edizioni, Venice 2010, p. 31.
2 For more detailed descriptions see: E. Pannunzio, *Il restauro delle pavimentazioni barocche della Basilica della Salute: distacco e ricollocamento*. Atti del convegno "I pavimenti barocchi veneziani", 22-23 October 2015. Forthcoming publication.
3 FT-IR analyses of the vegetal resin verified the presence of abietic acid, which is characteristic of rosin. *Ibidem*.
4 Analysis performed by LAMA Laboratory, IUAV University, Venice.
5 G. Pellizzari, S. Vianello, *Il restauro del pavimento ad intarsio nella chiesa di San Pantalon a Venezia*. Atti del convegno "I pavimenti barocchi veneziani", 22-23 October 2015. Forthcoming publication; T. Favaro, *Chiesa di Santa Maria Assunta dei Gesuiti a Venezia, restauro del pavimento marmoreo*. Grafiche veneziane, Venice 1999.
6 A. Del Riccio, *Istoria delle Pietre*. Edited by R. Gnoli, A. Sironi. Torino, Allemandi 1996; C. Cennini, *Il libro dell'arte*, edited by F. Brunello, Vicenza 1971, p. 112. There are few examples of *commesso* floors in Venice. The first and richer example of *commesso* floor in Venice is inside Frari Church: in front of the main altar, Francesco Contarini's funeral monument is a richly carved headstone with floral elements of marbles and lapis lazuli laid over a thick layer of vegetal resin. It is a very early example, dated 1579 and for its characteristics it is credited to the Florentine community of craftsmen whose studio was next to the Church building. Cfr. A. Augusti, *Il Monumento Contarini alla Basilica dei Frari*. In: *Le chiese di Venezia*, edited by A. Augusti. Roma, Editalia 2000.



Sanctuary area: use of different kinds of mortars, employed side by side with no differentiation, to settle the marble slabs.



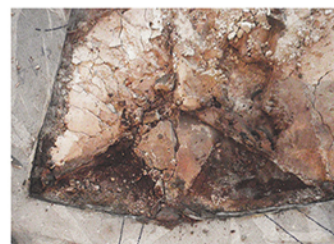
Sanctuary area: fragments of mortar behind the stone slabs. Between the two mortars' layers there are numerous stone fragments. These can be due to the use to perfect the slabs one by one *in situ* before the settlement.



Altar front side: where the floor is isolated from the building structures, the stone slabs are in quite good conditions. Fractures and deformation occurred just alongside the *steleri* edges.



Altar right side: alongside the building structures, moisture and salts cause visible damage to the very thin *tarsia* slabs. Under them, the rosin mixture is often dusty and poorly conserved.



Main Altar: It is visible the use of rosin mixture and white slaked lime mortar to glue the thin *tarsia* slabs on the surface of the *steleri*.



Main altar: the rosin mixture employed for the slabs settlement was extremely fragmented and dusty.



Altar left side: rosin mixture state of preservation. The vegetal resin was the only original binder found while gypsum and concrete mortars were employed during several maintenance past events.



Altar front side: Istrian stone *steleri* under the *tarsia* slabs.