

Understanding and revision of the technical aspects of lustre inscription- Kashan 7th & 8th Hijri C

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Introduction

Among researchers majored in luster works, many have focused on the methodology of making glaze, the origins of its production, the implications behind motifs, or its style and form; few paid attention to the production and the actual physical features of these tiles. The diversity of different styles, whether using the pottery wheel or the mold method, is evident in the varieties of different tiles having been remained. The discovery of several molds both for making dishes and for creating embossed tiles, especially the in above-mentioned styles observed in tiles with embossed inscriptions, has put forward the idea that they were done using molds. The purpose of this article is to re-examine the methods used for writing inscriptions; it also undertakes a technical review and analysis of the shortcomings of this method: using molds for creating patterns for the decorations of luster inscription tiles of the 7th and the 8th centuries Hijri. In this way, this research seeks to answer the following questions: a) how can the execution method of writing inscriptions in the golden altars of the 7th and the 8th centuries of Hijri in Arais al-Javahir be explained? b) how can it all be feasible using scientific steps and experiments according to the laboratory standards?

According to the current theory, each of the tiles with inscriptions had a separate mold. Thus, if there were no mold, the method used for the repeated inscriptions would remain a mystery.

Materials and Methods

Small dishes, tiles, and seals made of stone paste can be found in large and small civilizations. The quality of the pigmentation that the glaze gets in this mixture, in terms of the brightness, transparency, as well as the strength of the glaze-coating both on the surface and on the body has a noticeable superiority compared with the red clay constructions. With the advancement of civilization in Iran, one can witness the decreased use of earthenware dishes (including glazed tiles, stone paste crockery, and clay pottery dishes) and their replacement with metal and terracotta, plaster, and stone items. In the palace Darius the Great, the walls were decorated with glazed tiles. The archeological findings of Bukan and Ghalichi, as Kambakhsh Fard notes, also show the extensive use of glazed clay in the Mana and Median civilizations.

Throughout the time, however, these stone-relief decorations of the Achaemenid era and the plaster version common in the Sassanid era all changed.

With the arrival of Muslim Arabs in the lands under the Sassanid rule and with the import of pottery from the eastern neighbors with perfect glass-like glazing, instilling elegance like precious metals, and including delicate motifs, a movement in these lands was developed, which embodied in the early luster works and the molded pottery of the central Iran. Then, it eventually became a worthy substitute for various artefacts leading to the creation of the refined and luxurious enamelware in KambakhshFard's view. The pottery artefacts that were produced and offered in Nishapur, Shush, and Samarra in the first centuries had prominent high relief works. They were designed with colorful paintings on them and were delicately elegant. These qualities were due to the combination of a thin white film that was like glazing in terms of composition; in terms of hardness, they could be placed somewhere in between the toughness of glass and its body's malleability. In the following centuries, this method with updated techniques provided the ability to produce the surface with the ability that offered the possibility to be worked on and to be shaped in large size molds. At that time, in pottery industry, it was possible for artists to create large pieces of pottery with resistance like a stone, flexibility like a plaster, transparency like a mirror/glass, and metallic polish like gold. It was time to build many altars, tombstones, and inscriptions with these material, which was confirmed by the remaining works. The research method in the theoretical part is descriptive/analytical, and in the laboratory and workshop part, it is experimental; data collection undertook using library study and available historical documents.

Results and Findings

The use of stone paste brought about a great transformation in the pottery of Islamic civilization. This method, based on archeological findings, was used in Iran in the 5th century and provided plenty of opportunities to the artisans to the extent that they were able to make large and thick pieces from great alters to fine dishes. In this article, an attempt was made to test an alternative hypothesis by combining both the accepted mold method while creating patterns on the tiles in the free hand. To achieve this, the tile pieces were made in the workshop in practice and step by step. In the first step, the types of earthenware mixtures in Iran and different types of patterns shaping and creating with these mixtures were scrutinized. In the second step, by examining the written documents of the 8th century (Arais al-Jawahar), the findings in those documents were analyzed and compared; an attempt was made to understand and compare those writings with the evidential works of that era. In the third step, the remaining works from that era were analyzed to clarify the findings put forth by previous researchers. For this purpose, the procedure was subjected to a detailed, technical investigation and was applied methodically. For the accuracy of this experiment and to test the findings, following the mentioned methods, tiles with prominent inscriptions were reproduced with the proposed method, and was decorated as they would have been historically. Finally, the research method shared in this article embodied practical connotations in its nature, using laboratory process and scientific steps. Also, it is historical in terms of the use of broad and analytical approach, to set it within its period. The term 'historical' is emphasized since it is a

topic that is subject to various historical biases that need clarification. According to the findings of the researcher, accurate historical facts have not been raised until now, and in this way new findings will be introduced.

Conclusion

This research can be concluded as follows: tiles with raised inscriptions are organically made and, in many cases, improvised using the skill set of the artist and a special type of stone paste. This was used on the tiles already made using a special mold with the repeating parts already baked on them. An old premise classified ceramic works with embossed inscriptions as molded tiles. Researchers have also expressed that every piece of tile with an inscription must have a separate mold. In this article, by focusing on archaeological and written evidences, an attempt has been made to find the real production method of this type of tiles. To test this new hypothesis in a practical and scientific way, using the available historical and theoretical documents, the tiles were reproduced using the new proposed methods; the results can confirm that the findings can replace the old theories to a large extent.

Keywords: Kashan pottery, Middle Islamic period, lustertiles, relief inscription, stone paste body.