

An investigation of the production methods: zellijs of Meshouar (XIVth century, Algeria)

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The Islamic monuments of medieval Maghreb or Spain are often covered with zellijs (*azulejos* in Spanish) - which form geometrical — perhaps floral — compositions sometimes complex. These testify to both aesthetics and the science of geometry at the time they were elaborated. The term zellij indicates pieces of glazed ceramic carefully cut, in geometrical motives, and assembled to give traditional forms. The particular art of zellijs has been developed in Morocco since the XIIth century, first for the decoration of minarets, bottom of walls, grounds, of religious, military and funeral building and also architectures. The techniques, the texture and the composition of the material on this context are not or badly known. Here we are interested in searching the physical characteristics of zellijs coming from the site of Meshouar, in Tlemcen, and dating from the middle of the XIVth century. Excavations at Tlemcen have revealed sealed levels with exceptional quality of zellijs. We look for some indications on one or several techniques of their manufacture. The analyse concerned the texture, by optical microscopy and scanning electron microscopy, and the elementary composition of the different phases, by energy-dispersive X-ray spectrometry and or X-ray diffraction. Colouring agents, used to colour the glazes, were identified (iron, copper, cobalt and manganese). For all the examined samples, transparent lead and tin-opacified lead glazes have been used. These data establishes a first repository system useful to compare with other samples from various periods, and from other Algeria buildings.

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Zellijs; glaze; colour; techniques of manufacture; medieval Islamic monuments.