P125 Bedding mortars from medieval ceramic flooring from the Alcobaça Monastery in Portugal

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Abstract

Bedding mortars are fundamental materials to ensure the stability of tiles, especially in the case of flooring, which withstand the impact of people circulation. In a church, the quality of mortars, tiles pieces and their maintenance over time can be decisive for pavement durability. Inside the church of Santa Maria de Alcobaça Monastery, stone slabs are currently the main and the most applied type of paving in terms of covered area. However, it can still be found *in situ* in the ambulatory of the church a ceramic pavement with simple shaped pieces, some of them graffitied. A significant part of this floor is composed of original pieces from the medieval period. During the rehabilitation works of the church of the Alcobaça Monastery that occurred between the 1930s and the mid-1940s, other areas of the headboard and transept were discovered to be also coated with ceramic pieces below the stone slabs. In this latter case, they showed various formats and many had traces of glaze. In these areas, the ceramic pavement was removed at the time and is currently stored in reserve, often preserving part of the fixing mortars on the back and sides of tiles. Further studies on this ceramic pavement suggest that they are original pieces of the thirteenth century [1,2]. Although the chemical characterization of the mortars does not answer questions about the precise dating of this material, their chemical-mineralogical variations may indicate that the samples belong to the same set or to a later reflooring, for example. The study of these mortars may contribute to other related historical issues of materials production technology, as well as to the development of compatible materials in the case of future conservation interventions. For this study, 20 samples of primitive ceramic pavement bedding mortars were collected and characterized by WDXRF, XRD, μ-Raman, TG-DTA and optical microscopy. The results indicate that the pavement bedding mortars are mostly composed by air-lime binder and quartz sand aggregates. Although there are variations in the elementary chemical percentages of the samples, the mineralogy identified and the characteristics of the aggregates are consistent with each other, indicating that the samples may correspond to the same working period.

References

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