



# Characterisation of Roman and Mediaeval renderings. The case of the remains found in archaeological excavations in the city of Valencia (Spain)

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## ABSTRACT

Since antiquity man has rendered the interior and exterior of the spaces he has built and inhabited. The detailed analysis of samples of rendering from the Roman and Mediaeval period makes it possible to further explore the techniques used in their execution, in addition to comparing the built fabric and the knowledge presented in treatises. The samples analysed from archaeological excavations in the city of Valencia make it possible to define continuity features between the rendered constructions, especially Roman and Mediaeval interiors, and the characteristics of residential buildings in the city constructed or transformed in the 18th, 19th and early 20th centuries. This article includes the results of the analysis and testing of the characteristics of a total of ten samples of historic renderings from the Roman (5), Islamic (4) and Mudejar periods (1). This eventually led to a morphological, physical–chemical and chemical–mineralogical study of 17 different mortars. However, the remains analysed were not the only source consulted. A detailed historical study based on several bibliographical sources and specific fichas also uncovered interesting aspects of its material and construction. In addition, the information obtained was analysed both globally and individually, establishing relations between different archaeological samples and the renderings of the historic façades of the city, thus revealing important aspects of the technical and material evolution of the continuous renderings in the city of Valencia.

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## 1. Introduction

Since antiquity man has rendered his dwellings both inside and out. This answers aesthetic needs as well as the protection of different fabrics in mud, reeds and other materials requiring a surface finish to ensure weather resistance. Continuous mortar or paste renderings have therefore been used by almost all civilisations or cultures, developing techniques with different degrees of complexity and adapting them to the tastes of each period.

The case of the historic centre of Valencia is no exception. At present, most of the exterior rendering of residential buildings, mainly dating back to the 18th, 19th and early 20th centuries, consists of one or several layers of mortar or paste. This unique feature has prompted detailed research on the surface renderings which currently protect and decorate the historic façades (La Spina, 2015; La Spina et al., 2013a; La Spina et al., 2013b). However, further research was also considered necessary on the chronology of rendering, as well as on the technical and material characteristics of rendering in Valencia from the foundation of the Roman city in 138 BC until approximately the late Middle Ages.

Most of this study results from the scientific analysis of archaeological remains of rendering found in the city and the search for specific information in bibliographical texts and references.

## 2. Research methodology and phases

The methodology followed and the different research phases were defined at all times by both theoretical and practical aspects. The deductive method used combined historic research and specific scientific study. Thus, the first phase of the research consisted in the bibliographical search through general and individual documents on renderings and Valencia for any information that could provide a historical context. In this respect, publications on the history of the city were crucial (Dauksis Ortola and Taberner Pastor, 2000; Dauksis Ortola and Taberner Pastor, 2002; Alonso Monterde et al., 2004 and Alonso Monterde et al., 2008), as were the different historic architectural treatises including that by Vitruvius, who dedicates most of the seventh book, and more specifically the third chapter, to explaining how to execute a rendering (Vitruvio Polión, 1787). However, given the fairly general nature of the information obtained, the second phase of the research consisted in a scientific study, similar to other studies carried out (Crisci et al., 2004; Torracca et al., 2003; Pecchioni et al., 2008; Pecchioni et al., 2014; Blasco et al., 2013), aiming to obtain specific

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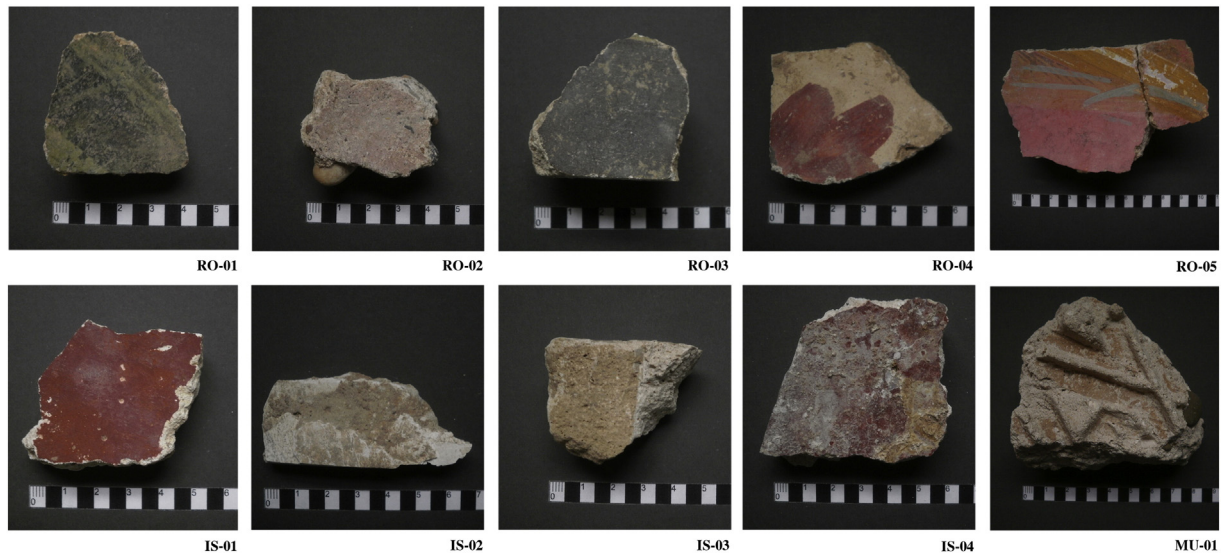


Fig. 1. Images of the samples analysed: RO-01, RO-02, RO-03, RO-04, RO-05, IS-01, IS-02, IS-03, IS-04, MU-01.



Fig. 2. Plan of the city of Valencia showing the location of the archaeological sites (Map: *Nobilis ac Regia Civitas Valentie in Hispania* de Antonio Manceli, 1608).

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