

The glass mosaics tesserae of "Villa del Casale" (Piazza Armerina, Italy): a multi-technique archaeometric study

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Glass tiles from mosaics of the roman "Villa del Casale" (Piazza Armerina, Enna, Italy) were characterized from the chemical and textural point of view, with the aim to provide archaeometric information on the raw materials and on the manufacture techniques used in this archaeological site of paramount importance. The samples are colored, opaque or translucent, glass and include both tesserae from mosaics and erratic tiles conserved in the Villa store. The textures and the chemical compositions of colorant and opacifier agents were determined by means of a multi-technique approach based on scanning electron microscopy, X-ray diffraction, electron microprobe analyses for major elements and inductively coupled plasma mass spectrometry for trace elements. Classification based on major element contents shows that the samples are natron-based silica–lime glasses that fall mainly in the Romani Europei, and subordinately, in the Levantine I fields. The trace elements distribution is compatible with the hypothesis that the raw glass could be imported from a production center located in the Mediterranean basin. As regard as the opacifiers/colouring materials, results indicate a large use of Pb antimonate in the yellow and green tesserae, of Ca antimonates in the white and blue ones, and of metallic copper in the red tiles.