

Mosaic marble tesserae from the underwater archaeological site of Baia (Italy): Determination of provenance.

D. Barca (1), M.F. La Russa (1), S.A. Ruffolo (1), M. Ricca (1), N. Rovella (1), S. Ricci (2), B. Davidde (2), and G.M. Crisci (1)

(1) Department Earth Science, Via Pietro Bucci, Cubo 12B, University of Calabria, (2) Istituto Superiore per la Conservazione e il Restauro, Via di San Michele 23, 00153 Roma

This work is a research aimed to improve the knowledge of the Roman underwater Archaeological Park of Baia, Naples.

In particular, this investigation is focused on provenance studies of archaeological marble samples belonging to floor slabs of opus sectile recovered in the underwater Archaeological Park of Baia, Naples (Italy). Baia was founded by the Romans between the I and II century BC and currently it is submerged due to the phenomenon of bradyseism.

Several analytical techniques have been applied to establish the provenance of ancient marbles in order to confirm the importance of the archaeological site. In particular petrographic, geochemical and isotopic analyses have been implemented.

Petrographic analysis has made it possible to determine textural characteristics and evaluate the maximum grain size (MGS). Geochemical methods were applied to evaluate trace and ultratrace elements, in detail determination of Mn amount was carried out by means of laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS). Finally, isotopic determination of O and C, and $^{87}\text{Sr}/^{86}\text{Sr}$ ratio were measured by mass spectrometry (MS). Results show that for mosaic realization several precious marbles from Mediterranean area were used.