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**Topic 3: Mortars in archaeological sites.
Construction history. Archaeometry.
Dating of historic mortars.**

MORTARS OF THE ROMAN FRONTIER ON THE DANUBE

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Keywords: Roman mortars, Danube Limes, mortar characterization, conservation mortar, conservation science

Abstract: The mortars have been always one of the most interesting topics for the researchers of Roman building constructions. The knowledge on this complex building material used in Roman architecture is mostly based on the research of the monumental structures in the territory of today Italy. However, many mortar examinations were executed by the researchers of provincial Roman archaeology as well, who tried to find evidence of the quality of building activities in the provinces. The territory of today's Serbia, except for the existence of scarce studies, was never in the research focus. Even the monumental bridge over the Danube, built at the beginning of the 2nd century that made Trajan's conquest of Dacia possible, was not researched thoroughly enough when we speak of its building materials. During the last few years, the interest in the Roman buildings at the Danube territory has grown. Mortar Design for Conservation – Danube Roman Frontier 2000 Years after (MoDeCo2000) project is funded by the Science Fund of the Republic of Serbia. Its aim is to investigate the mortars used in Roman buildings along the former Danube Limes in Serbia, as well as to offer mortar recipes for building conservation practice. The project includes 24 archaeological sites, dating to the period spanning from the 1st to the 6th century, with more than 120 different mortar samples that originate from 40 buildings of military and civilian function. The project results are intended to be an important contribution to the nomination dossier of a cultural property tending to be included in the UNESCO World Heritage List, named "Frontiers of the Roman Empire – Danube Limes in Serbia". Conducted laboratory analyses showed a great diversity of mortar samples. Immensely important are the results offering the characterization of some local raw materials known to date as used for masonry, as important components of the mortars, but also the possibility to conclude that the mortars for the most important buildings in this territory were made using the rare or imported raw materials. After sampling and research, laboratory models of mortars were done, the most promising recipes were chosen, and the application of new mortars was performed in real environmental conditions and on historic walls. The project results formed a database on archaeology, architectural and construction history, conservation science, technology, geology, and chemistry of raw materials and mortars, that will contribute to heritage protection in Serbia, as an exceptionally important input for conservation practice. The objectives of the MoDeCo2000 project are connected to the research of physical elements and social aspects of the creation of Roman fortresses and cities in Serbia, as well as to the conservation practice and contribution to contemporary engineering. Its biggest scientific significance is in the revealing of different aspects of building technologies in the Roman period at the mentioned territory, but also of the economy, trade, and everyday life of its inhabitants.

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