ARCHAEOMETRIC INVESTIGATIONS ON SELECTED ROMAN DOMESTIC POTTERY OF THE VILLA GRÜNAU, STYRIA, AUSTRIA – A MULTI TECHNIQUE APPROACH

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The archaeometrically investigated Roman domestic pottery fragments originate from various excavations carried out in the years between 1988 and 1997 in the area of the Villa Grünau. Above all parts were exposed in the western area of the villa, where a part of the main building was located as well as the courtyard of the villa (POCHMARSKI, 2005). The fragments are from the 1st to 3rd century, with a focus on the second century. An archaeological arrangement in groups was performed with reference to the vessel shape, the size of the temper particles and the pore size. No detailed studies have so far been carried out on the firing temperature and the raw material used. With respect to the firing temperature of the ceramic fragments there is only an estimate which assumes a temperature between 700 ° - 800 ° C. The firing conditions had been both oxidizing as well as reducing whereby mixed fires also existed. (LAMM, 2011). For the study, 29 different ceramic fragments were selected with the archaeological grouping of LAMM (2011) served as a basis. The study aims to achieve through the application of different mineralogical, petrological and chemical methods new insights with respect to the raw materials used, the firing temperature and a potential differentiation of the ceramic fragments into different groups. In addition, the aim is to determine the provenance of the domestic pottery of the Villa Grünau. For this reason, two ceramic fragments from Kalsdorf and eight more from Lassenberg were additionally included in the study. Analytical methods were used, the optical polarization microscopy, X-ray powder diffractometry, X-ray fluorescence spectroscopy and the micro probe.
The summarized results of the study are: The mineralogical and chemical composition of the ceramic shards is quite similar, with few exceptions. The main mineral phases are quartz, mica/illite, feldspar, in some shards additionally calcite and dolomite and in very few cases amphibole, pyroxene and garnet. Based on the mica / feldspar ratio, 3 different groups can be detected. The estimated firing temperatures for most of the ceramic shards are between 650° to 850°C whereby the ceramic samples form Kalsdorf display indicators for a higher firing temperature (> 900°C). Ceramic fragments form the sites Villa Grünau, Karlsdorf and Lassenberg, with just a few exceptions, are CaO-poor ceramics supposedly with illitic based clay material and rock fragments and/ or sand used for tempering. With regard to the provenance the study shows, that the ceramics of the Villa Grünau could come partly from the Vicus von Gleisdorf (KLAMMER et al., 2000).

KLAMMER, D., KOLLMER, H., SCHINDLER-KAUDELKA, E. (2000): In JESCHEK, G. (eds) Die grautonige Keramik aus dem Vicus von Gleisdorf, 73-82.
LAMM, S. (20011): Dissertation, Karl-Franzens-Universität Graz.
POCHMASKI, E. (2005): SchSt., 18, 79-91