

an 18th C. faience's workshop, fribourg (switzerland)

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A faience's workshop dating from the 18th century has been discovered in Fribourg and excavated between 1989 and 1990. The collected material is really exceptional because both technical ceramics and faience have been unearthed. This paper has the following aims:

- to know the composition of the raw material and its provenance
- to determine the techniques of manufacture (mix of clays and firing temperature)

To answer that, we analyzed 116 samples of technical ceramics, biscuits and faiences by optical microscopy, X-ray fluorescence (XRF) and X-ray diffraction (XRD). In detail: 5 bricks, 4 tiles, 7 small and 31 big saggars, 8 heating plates, 2 spacers, 2 coils, 1 lute and 1 crucible, 1 piece of furnace, 7 clays, 26 biscuits and 21 faiences (of which 8 are collection objects).

From the technological point of view, the observations of thin sections, together with the results of XRF, show the use of at least two clays, a calcareous and a non-calcareous, one used in mixing or pure. The variations of compositions are due to the different proportions of each of clays used. Mixing of two clays is confirmed by the observation of laminated or veined textures. But also the ceramics showing homogeneous textures, suggest a mixing of two clays, because their chemical compositions plot on a correlation line connecting both clays end members. Such quaternary clays have been found in the surroundings of Fribourg.

XRD results show that the majority of the samples have been fired between 950°C and 1050°C. One sample, a brick, has been fired between 860°C and 950°C, and six samples have been overfired: four of them (one small saggarr, two heating plates and one tile) have been fired between 1050°C and 1100°C and two (one big saggarr and one flour-tile) above 1100°C.