

GEOLOGICAL CONTROLS ON THE CERAMIC CHARACTERISTICS OF A CLAY MINERAL DEPOSIT IN NOVA VENEZA, SOUTHERN BRAZIL

1STANGLER, R.L.; 1STRIEDER, A.J.; 1COSTA, J.F.C.L. 1Dept. of Mining Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.

Geological Controls on the Ceramic Characteristics of a Clay Mineral Deposit in Nova Veneza, Southern Brazil1STANGLER, R.L.; 1STRIEDER, A.J.; 1COSTA, J.F.C.L. 1Dept. of Mining Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. The geological processes normally influence directly the industrial parameters and their spatial distribution on the clay minerals deposits. This paper presents a study on a deposit of this type, located in one of the world's main ceramics production areas. Water absorption and linear retraction, both expressed as percentages, were evaluated, in addition to the thickness of the clay. Depending on the quality parameters, two kinds of clay can be mined: single and double firing. Samples were available from auger holes spread over an area of 64 ha approximately. Geostatistical methodologies were applied. This clay deposit is associated to a quaternary sedimentation coming from a close source of Paleozoic clay-bearing rocks, in a transition to a quaternary coastal plain. Residual contributions were investigated. Two groups of sedimentary features controlled by tectonic structures interact and influence the variables in different ways. A NW-SE structure acts over most of this region and controls most of the local relief and the drainage patterns. It appears in the western border of the study area, controlling the sedimentary features that correspond to the overall trend of the quality variables. A second structure is located in the central north part of the area and trends NNE-SSW. A well defined channel with the thickest clay horizon can be regarded to this direction. The results show the strict relationships between the sedimentary and structural conditions and the spatial disposition of ceramic characteristics of the clay, and can be used to guide exploration works on surroundings.