

ASSESSMENT OF THE INDUSTRIAL POTENTIALS OF SOME NIGERIAN KAOLINITIC CLAY DEPOSITS

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ABSTRACT

Nigeria has appreciable level of distribution of industries engaged in metal and process industries. Therefore the need for raw materials to support their growth has become necessary. In this research clay samples from Cross River State (Idere and Ito) were characterized. Linear shrinkage, apparent porosity, cold crushing strength, drying and firing, bulk density as physical properties and chemical compositions were determined. The results of the physical and chemical properties of both Idere and Ito clay samples showed that, these clays can be used for brick making, floor tiles and stoneware. This is based on the comparable values obtained most of which agrees with internationally acceptable values such as; thermal shock resistance 21 cycles for Ito, cold crushing strength 13.33MN/m^2 for Idere, apparent porosity of 29.41% for Idere and 27.27% for Ito, permeability of 88% for Idere and 67% for Ito and linear shrinkage value of 9.20% and 7.73% for Idere and Ito respectively. The chemical values are also in agreement with standard values.

Keywords: Cross River State, Southern Senatorial District, Physical and Chemical Properties, Aluminum Oxide, Silicon Oxide, Clay, Nigeria.