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## **Ceramic Potential of varying Trinidad Clay-Based Soils**

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**Abstract**—As the Government of Trinidad and Tobago seeks to diversify the economy away from oil and gas, opportunities arise for value added products, made from indigenous raw materials. The traditional ceramic industry, based on clay products can be a growth pole in the medium to long term as products are developed for both local consumption and export. The main clay deposit currently exploited for heavy industrial production is in the geographic region of Longdenville, situated in central Trinidad. This deposit consists of kaolinitic clay mineral; presently extensively utilized in the production of clay blocks, bricks, and tiles. This study examines samples of kaolinitic clays from other sources including Rio Claro, Valencia, Cocoloco, and Caparó along with the Longdenville clay. A 70:30 clay: sand ratio was used as a baseline, as well as formulations with 2.5% more clay and 2.5% less clay than the baseline. All samples were fired to 1075 °C and then subjected to compressive strength, modulus of rupture (MOR) and water absorption tests. Within the composition range tested, the Rio Claro, Cocoloco, and Caparó clay sources yielded maximum compressive strengths, (MOR) in excess of 10 MPa and water absorption between 3.7% and 9.4%. These exceed the TTBS requirements and can be substitutes for the Longdenville clay in the manufacture of construction products. The estimated acreage of the Cocoloco clay is approximately 10 times that of the Longdenville clay and its close proximity to Longdenville can make it a good substitute.

**Key words:** Ceramic, Clay, Compressive strength, Modulus of rupture.