Title of Article: Effects of Partial Replacement of Sand With Lateritic Soil In Sandcrete Blocks

Author(s): Joshua, O1, Amusan, L. M1, Fagbenle, O. I.1 & Kukoyi, P. O.2

Abstract: The attention of most researchers is shifting towards the optimization of building materials by using local contents; the use of indigenous materials; and local industrial by-products unique and abundant in certain localities. This study therefore explored ways in which lateritic soil could be utilised in hollow sandcrete block production in Ota, Ogun State, Nigeria. Sandcrete blocks were made with lateritic soil taken from different sources replacing the conventional fine aggregate (local river sand) in steps of 10% up to 60%. Their compressive strengths determined to check for conformity with standard sandcrete block as specified in the Nigerian National Building Code (2006) with a view to determine the acceptable percentage replacement. Soil tests were performed on the lateritic soil samples to characterise the soils. Classification of the lateritic soil samples within Ota, revealed that the lateritic soils are mostly sandy clay of high plasticity and may replace sand by up to 20%, though an approximate linear decrease in strength with increasing sand replacement with lateritic soil was observed. This percentage replacement can be recommended to the block making industries within Ota with a view to encouraging utilization, though it is encouraged to confirm the percentage before embarking on mass block production.