A STUDY ON LOW COST PHOSPHATE BONDED CLAY BRICKS

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G. M. HAPANWEERA

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G. M. Hapanweera
Department of Physics
University of Peradeniya
Peradeniya
Sri Lanka

The importance of brick as a building material throughout the world can be seen. Also bricks can be appropriately and effectively used as a main alternative material for low cost permanent construction both in rural and urban housing as well as public building.

However, quite a number of brickworks have ceased production because of fuel shortage and / or rising fuel prices. This is a serious problem especially in areas where firewood for firing brick is scare or no longer available.

Therefore, as an alternate, to reduce firing temperature of structural clay bricks, phosphate bonded clay bricks were made. As a result firewood consumption for firing temperature can be reduced up to certain level.

Clay samples were collected from two different areas and small sized brick samples (according to the standard brick size) were made in the laboratory. They were fired up to 200 ^{o} C. The drying shrinkage, firing shrinkage, bend strength, compressive strength, water absorption and density are reported. The highest strengths were obtained for Lewella clay (R) mixes with pH 6.5 fired at 200 ^{o} C compared to unmodified clay heated under similar conditions but at 900 ^{o} C firing temperature. The phosphate bonded products were also of low porosity and improved dimensional stability.