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ABSTRACT

The use of ground fired clays as cement extenders and pozzolans have persisted since the early Roman Empire. Pozzolans are siliceous materials which by themselves do not possess cementitious properties, but do when combined with lime in the presence of water. The cheap manufacture and superior properties in marine and aggressive environments have favoured its use up to today.

Reported herein are the results of a research effort aimed at determining the suitability of ground local clay blocks for use as pozzolan.

Concretes were made using Portland cements containing 10, 20, or 30 percent ground fired clay block. The development of compressive strength of cubes made with these concretes were the primary criteria used to determine pozzolanicity. A survey of existing sources of clay block waste was also conducted.

The results obtained established the suitability of ground local clay blocks as pozzolans. At 20 and 30 percent replacement, compressive strengths at 90 days were within 6% and 18% respectively of the ordinary Portland concretes. There was in addition reduced bleeding and increased cohesiveness of these mixes. Fineness of the ground pozzolan

had a major effect on the rate of pozzolanic activity and its contribution to compressive strength. Feasibility of establishing commercial production of such a pozzolan appear good. Further research and economic studies are therefore suggested.

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