

ROLLER COMPACTED FLY ASH CONCRETE

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ABSTRACT

This investigation was conducted to review the state-of-the-art information on permeable base road pavements. A construction project was carried out to demonstrate use of fly ash in manufacture of permeable base concrete pavement. Past investigations have indicated that adequate drainage is required in producing durable pavements, especially when it is subjected to heavy traffic loads. Pumping is reported to be one of the primary causes of pavement distress and generally occurs in undrained pavement. To help solve this problem, permeable base pavements are used. A properly designed and constructed permeable base eliminates pumping, faulting, and cracking. A permeable base pavement is composed of three components: an open-graded permeable base, a separator layer, and an edge drainage system. The base is designed to have adequate permeability and stability. It is estimated that the use of a permeable base would add to pavement service life by 33% and 50%, for asphaltic and portland cement concrete pavements, respectively. The demonstration project completed in this investigation indicated that fly ash can be used in the manufacture of permeable base concrete pavements. The use of fly ash resulted in a reduced cost of the pavement without compromising its performance.