VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM-590014, KARNATAKA

A PROJECT REPORT ON

"DESIGN AND EVALUATION OF HIGH VOLUME FLYASH CONCRETE FOR RIGID PAVEMENT OVERLAYS"

(Approved by Karnataka State Council for Science and Technology, Indian Institute of Science, Bangalore)

Submitted in partial fulfillment of the requirements for the award of degree Of BACHELOR OF ENGINEERING in CIVIL ENGINEERING.

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SYNOPSIS

Now a day's concrete pavements are gaining popularity for its own good paving properties. As such a consumption of cement is increased drastically. As cement demand increases, production also increases. Every tone of production of cement releases approximately one tones of total carbon dioxide. In many industries, including power generation, coal is used as fuel. This generates tones of coal ash, which is very difficult to dispose off, which causes pollution. Thus the production of cement and electricity contributes huge amount of carbon dioxide emissions and coal ash to the environmental pollution.

Fly ash contains reactive constituents and un reactive crystalline matter. Reactive constituents reacts with lime and offers hydrated minerals to impart strength and unreactive matter gives packing effect to the concrete, filling up of pores and thus by increases the strength Here an attempt is being made to consume this pollution causing material to a utility by using it in concrete.

Whenever concrete is used as overlay it should posses certain properties to suit as overlay, like strength, flexural strength, modulus of elasticity etc. because of all these reason here an attempt is being made to design a concrete mixture for M-60 grade, by using high volume fly ash into it.

After design the concrete, the concrete is being evaluated for overlay properties such as compressive strength, flexural strength, modulus of elasticity etc, in the design of high volume fly ash concrete use of chemical admixtures is inevitable, and it is proposed to use the super plasticizer. Since the compatibility of super plasticizer is different with different cement, It is required to tests the compatibility of super plasticizer with cement. Marsh cone test is adopted to check the compatibility.