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Effect of fly ash with polyester fibre on mechanical properties of roller compacted concrete pavements

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The use of roller compacted concrete (RCC) in pavements are widely used for a variety of industrial and heavy-duty pavement applications that involve low speed traffic. The aim of this investigation is to evaluate the effect of fly ash and triangular polyester fibre on mechanical properties of RCC mixtures addressed. Optimal water content value for the maximum dry density of each RCC mixture is one of main concerns for mix design. In this study, effect of triangular polyester fibre used as 0%, 0.25%, 50% and 0.75% per one cum with fly ash 15%, 30% and 45% by cement weight as a partial cement replacement on optimum water content, mechanical properties was investigated. The optimum water content required of those mixtures was determined using nuclear density gauge meter. As the result of the experimental study, it has been observed that the use of fly ash and triangular polyester fibre in RCC mixtures decreases and increases water requirement and water-cement ratio respectively. The mechanical properties of RCC mix with TPF decreases due to water requirement increase. RCC mixtures with fly ash 30% partial replacement of cement and TPF at 90 days curing should be designed to fulfill the requirement of strength and workability.

Biography

Atul K Desai has completed his PhD at SVNIT. He is the Professor of Applied Mechanics Department since 33 years. He has published more than 100 papers in international journals and more than 50 papers in international conferences.

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