

Strength Studies of Dadri Fly Ash Modified with Lime Sludge – A Composite Material

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Abstract

The aim of the present work is to prepare a new type of fly ash–lime sludge composite totally composed with industrial by-products which can be utilized as road construction material. The lime sludge content was varied from 10% to 50% (at an interval of 10%) and the various composites were tested for unconfined compressive strength after 7 and 28 days curing period. The mix formula of this composite was optimized based on maximum strength and equal utilization of both the by-products. The composite with optimal mix formula (fly ash/lime sludge =1:1) results in highest strength. This paper outlines the characteristics of fly ash and lime sludge, method of preparation of compaction specimen and unconfined compression test specimen, testing procedure and salient results thereof. The strength formation mechanism of this composite is discussed. This composite can be further engineered as road construction material with competitive properties.

Keywords: fly ash, lime sludge, unconfined compressive strength

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