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Improving the Strength of the Concrete by Replacing of Cement with Fly Ash and Fine Aggregate with Laterite

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Abstract: In the present scenario, several buildings are being constructed ranging from ordinary residential buildings to sky-scrap structures. Invariably in all the structures, concrete plays a vital role in construction. Generally concrete is a mixture of cement, fine aggregate (River sand), coarse aggregate, water and type of admixtures used depends upon the situations. Now-a day's good sand is extracted and transported from river bed being in a long distance. The extraction of sand has become a serious issue, posing environmental degradation, thereby causing serious threats of flood or diversion of water flow. Never the less the resources are also exhausting very rapidly and economical. To overcome from this crisis, partial replacement of cement with fly ash and fine aggregate with Laterite can be an economic alternative. This project focuses on investigating the characteristics of M60 grade of concrete with cement partially replace with fly ash 0%, 5%, 10%, 15%, 20% and fine aggregate replace with laterite of 20% respectively. The compressive strength of concrete is increases at 10% of fly ash and 20% of laterite replacement.

Keywords: laterite, fly ash, M60.



