

Abstract of project work titled

“CONCRETE MIX DESIGN BY PACKING DENSITY METHOD”

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ABSTRACT

Concrete is the most widely used man-made construction material in the world and is consumed second only to water on this planet. It is obtained by mixing the cementitious materials, water and aggregates in the required proportions. However, the various required performance attributes of concrete including strength, workability, dimensional stability and durability, often impose contradictory requirements on the mix parameters to be adopted, thereby rendering the concrete mix design a very difficult task.

This project introduces the concept of Packing Density as a fundamental principle for designing concrete mixes. The concept is based on the belief that the performance of a concrete mix can be optimized by maximizing the packing densities of the aggregate particles and the cementitious materials. Thus by using this Packing Density method, a concrete mix is designed and the compressive strength of the mix is determined.

Later the mix proportion obtained by Packing Density method is compared with the mix proportion designed by I.S code method for the same strength. The effect of change in W/C ratio is also studied alongside. Workability measurements by Compaction factor method and Slump cone method have also been made.