عنوان مقاله:
ROLLER COMPACTED CONCRETE TENSILE STRENGTH

محل انتشار:
تخستن کنفرانس بین المللی تکنولوژی بتن (سال:1388)

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خلاصه مقاله:
Roller compacted concrete (RCC) presents a relatively recent development in the concrete technology of lowcement content for construction of dams, which in turn developed for application in concrete pavements of roads and storage yards, but with higher cement content. It is important to fully understand the characteristics and physical properties of concrete in order to predict the response of concrete structures. Compressive strength is used as a reference of the overall quality of concrete. For this reason, it is the principal property employed in the design of concrete structures. However, compressive strength is not the only characteristic influencing the behaviour of concrete structure and, in particular, gravity concrete dams where the determination of compressive, tensile and shear strength capacities is imperative. Those can be obtained using eitherlaboratory-cast cylinders or drilled cores or sawn blocks from a test section. This paper describes two tensile strength tests, namely, the direct tensile test and the splitting test were cylindrical specimens were casted and compacted using vibrating hammer following the soil approach method. Cylindrical specimens were prepared in two layers or lifts, and then the cylinders were cured in water for 09 days, to be subjected for different testing procedures. The obtained results were tabulated and discussed as relationships between direct tensile and indirect tensile versus compressive strength. The Splitting tensile strength has ranged between 4.8 to 0.41% of compressive strength, while direct tensile test results were lower than that of splitting tensile. Direct tensile test was more difficult to conduct for parent concrete than splitting tensile tests, and values obtained by it ranged from 0.1 to 9.4% of the compressive strength. The values of direct tensile strength have ranged from 0.55 to 0.67% of splitting tensile strength.

کلمات کلیدی:
Roller Compacted Concrete, Direct Tensile Test, Splitting Test, Compressive
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