

عنوان مقاله:

A LABORATORY INVESTIGATION ON THE EFFECTIVE PARAMETERS OVER THE PENETRABILITY OF ROLLER COMPACTED CONCRETE

محل انتشار:

سومین کنفرانس بین المللی بتن و توسعه (سال: ۱۳۸۸)

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نویسندگان:

V. Khalili Khorram - M.Sc.Student Hydraulic Structures, Islamic Azad University Tehran South Branch

A Mansouri - Assistant professor Hydraulic Structures, Islamic Azad University Tehran South Branch

H.R Vosoughifar - Assistant professor Hydraulic Structures, Islamic Azad University Tehran South Branch

خلاصه مقاله:

Roller Compacted Concrete construction technique has been recently remarkably considered in Iranian academic centers and dam engineering industry. However, research studies can hardly be found in which physico - mechanical properties of RCC have been studied as in a real ongoing project. In this study, permeability of the mass of RCC mixture used in Zirdan RCC dam located in south of Iran, the second large RCC dam in Iran has been investigated. Influences of cementitious material content, water - cement ratio, pozzolan replacement ratio in cementitious material, delay in working time and age of concrete specimens on permeability coefficient have been studied. Moreover, effects of different types of pozzolan on permeability have been examined. results showed that RCC has an equal or even lower permeability coefficient in comparison to an equivalent ordinary concrete. Effect of water content on permeability was considerable and in comparison to cementitious material content, showed a higher degree of importance. The rate of developing permeability coefficient (decreasing) was found faster than the rate of mechanical strength development (increasing). Delay in working time decreased the permeability of RCC. However, decreasing the water content below its optimum limit would result in an excessively high permeability coefficient. Finally, it was observed that silica fume had a significant effect on permeability coefficient.

کلمات کلیدی:

RCC, permeability coefficient, pozzolan, silica fume, working time

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