

## Effect of Poly Naphthalene Sulfonate Superplasticizer on Constructibility of Roller-Compacted Concrete Pavement

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**Abstract :** The use of Roller-Compacted Concrete Pavement (RCCP) in public and private applications has been increasing steadily in the past few decades due to its cost saving. This eco-concrete pavement shares construction characteristics from asphalt pavement and material characteristics from the conventional concrete pavement. Due to its low binder and water content, the consistency of Roller-Compacted Concrete (RCC) is typically very stiff. Thus, it is crucial to control the consistency of this concrete. Without appropriate consistency, required density may not be achieved in actual construction for RCCP. The purpose of this study is to investigate the effect on Poly Naphthalene Sulfonate (PNS) superplasticizer on the consistency of RCC as well as its compactibility in actual construction. From this study, it was found that PNS superplasticizer can effectively reduce the stiffness of an RCC mixture and maintain it for a sufficient amount of time without compromising its strength properties. Moreover, it was observed from field test specimens that the use of this admixture can also improve the compaction efficiency throughout the whole depth of pavement.

**Keywords :** roller-compacted concrete, consistency, compactibility, poly naphthalene sulfonate superplasticizer

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