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Experimental investigation on Self-Curing Concrete incorporated with Polyethylene glycol and Rice Husk Ash Powder

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Abstract: *The necessity of concrete is increasing year by year. In present, cement is now becoming a non-renewable material because of lack of limestone deposits. Also, while the production of cement (OPC) a lot of CO2 emission causes to global warming and air pollution. Even though Water curing is the most effective curing method to promote continuous hydration of cement and cement supplementary material in concrete. In practice, this ideal curing condition is provided for a limited period in concrete construction. Hence, Self-curing concrete is relatively a new chemical admixture to improve the water retention in concrete. The project work discusses the expected result of an experimental investigation into the evaluation of a concrete mix with replacement of cement by Rice Husk Ash with 5%, 15%, 20% and PEG-400 is to be taken 1.0% on M30 Mix. It is expected that a self-curing admixture will be a useful ingredient in concrete mixes and will increase the workability of concrete mix. Also, it is expected that use of this combination i.e., Rice Husk Ash and PEG-400 will eliminate the errors in conventional curing and overall economy will be achieve.*

Keywords: Self-curing Concrete, Rice Husk Ash, Polyethylene Glycol 400 (PEG400)

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[3]. "Enhancement of Self-Curing Efficiency in High-Performance Concrete with Rice Husk Ash and Polyethylene Glycol" by R. Nagarajan, M. Santhanam, and S. Shunmugasundaram. This paper discusses the use of RHA and PEG to enhance self-curing efficiency in high-performance concrete.
[4]. "Mechanical Properties and Durability of Self-Curing Concrete Incorporating Rice Husk Ash" by M. Ramezanianpour and M. Esmaeili. This paper investigates the mechanical properties and durability aspects of self-curing concrete with RHA.
[5]. "Influence of Rice Husk Ash and Polyethylene Glycol on Properties of Self-Curing Concrete" by A. B. Dhawale, S. D. Charkha, and S. G. Kolte. This study examines the influence of RHA and PEG on the properties of self-curing concrete, including strength, durability, and workability.
[6]. "Development of Self-Curing Concrete Using Rice Husk Ash and Polyethylene Glycol" by A. R. M. Youssef, M. E. El-Hawary, and H. M. Abd-El Gawwad. This paper presents the development and characterization of self-curing concrete incorporating RHA and PEG.
[7]. "Effect of Polyethylene Glycol and Rice Husk Ash on Strength and Durability Properties of Self-Curing Concrete" by M. S. Shirule and A. S. Kadam. This research paper investigates the effect of PEG and RHA on the strength and durability properties of self-curing concrete.