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INFLUENCE OF NATURAL ORGANIC ADDITIVES WITH NANO INCLUSION IN CEMENT MATRIX COMPOSITES FOR SUSTAINABLE CONCRETE PRODUCT

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ABSTRACT: Nanotechnology is one of the most promising areas of science. The main use of nano particles is one of the new revolutionary steps in concrete technology. In this paper an attempt has been made to study the mechanical properties of concrete by using mineral admixture and natural organic additives. Concrete production requires huge amount of cement and aggregates which eventually increases carbon emission and contaminates environment. Hence fly ash is partially replaced for ordinary Portland cement. But usage of fly ash in OPC deviates concrete strength. Therefore Nano-silica is added as an admixture to draft the deviation, thereby improving the strength of concrete and organic additives such as cactus gel is used to increase the workability of concrete. In this experimental study the binding material cement were replaced by 60% and 30% of fly ash in a beam structure, with and without the usage of mineral admixture and natural organic additives. The comparison of mechanical properties of conventional concrete and concrete with admixtures is to be done.

Keywords: *Nano-Silica, Cactus gel, Fly ash, Sustainable Concrete*