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ENHANCING THE DURABILITY STUDY ON SUSTAINABLE CONCRETE WITH NANO SILICA AND CACTUS GEL

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ABSTRACT: Concrete has been a choice for the construction structures, in all zones such as cold regions and saline zone. However these environmental factors have made a critical damage effect on the concrete Structures. Consequently, this damage will decrease the servicing time of the concrete and Aesthetic view of construction within this environment. In order to evaluate the durability of concrete and the behavior of concrete specimens under the Acid attack, corrosion attacks was studied in this presented work .Nanotechnology is one of the most promising areas of science. The main use of nano particles in concrete is one of the new revolutionary steps in concrete technology. In this paper, an attempt has been made to understand the influence of Nano- silica and cactus gel to increase durability in concrete. An experimental investigation has been carried out to determine the and Durability tests such Acid attack and sulphate attack and Corrosion Test on normal cement concrete and concrete containing Nano- Silica and cactus gel .The ratio mixes were calculated from design code using IS 10262-2019, it can be expected that Nano-Silica and cactus gel should give the improve performance over durability effect.

Keywords: *Nano Silica, Cactus Gel, Acid Attack Test, Corrosion Attack Test*