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# Investigation of the effect of bentonite paste index on modulus of elasticity, compressive strength and performance of plastic concrete

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## ABSTRACT

*Plastic concrete have been used for some four decades in watertight structures. In these four decades, plastic concrete has been successfully used in engineering control projects for seepage. Plastic concrete is produced by mixing of cement, bentonite, aggregates and water. Presence of bentonite and high water-cement ratio is difference between plastic concrete and conventional concrete. These two factor cause plastic concrete, besides possession of water tighting property, have a very lesser comperssive strength and modulus of elasticity in comparsion with conventional concrete and therefore be more deformable. Researches that fulfilled on this type of concrete in the word and especially in Iran, were not extensive and most of done works have been typical studies on relative projects. In order to make more economical plastic concrete, it is necessary to evaluate the effects of changes in the properties of bentonite, and in particular the effect of its plastic index change, and given that there is no extensive research in this field in our country, we try to move toward this goal in this these. Therefore after primary stduies and test, ۵۱ mix designs were teseted and compressive strength, modulus of elasticity and workability of them were determined. Based on the results, with increasing amount of plastic index of bentonite, compressive strength, elasticity modulus and workability decrease.*

**Keywords:** *Plastic concrete, Bentonite, Dough mark, Compressive strength, Modulus of elasticity.*