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**Investigation Experimental Of the Concrete
Properties Containing Bentonite and Zeolite as
Natural Pozzolan**

Using pozzolanic materials in concrete manufacturing is intended as an optimal solution to lower the rate of greenhouse gas emission, and diminish energy resources and cement consumption. This research is aimed at evaluating Semnan zeolite and bentonite as partial replacement of cement in concrete. Twelve bentonite and zeolite mixes and control mix were examined. The main variable is the proportion of bentonite and zeolite (5, 10, 15 and 20%) by weight of cement in replacement mode while the amount of cementitious material, water to cementitious material ratio, fine aggregate content were kept constant. To study properties of hardened concrete, compressive strength and splitting tensile strength tests were performed. According to the results of compressive strength test, using bentonite and zeolite results in 5% increase in compressive strength as compared with the control mix (without bentonite and zeolite). By replacing 20% of zeolite with the weight of cement, the compressive strength is reduced by 9%. In most samples, Bentonite and zeolite as partial replacement of cement, it is possible to obtain the compressive strength acceptable. According to the results in mixtures containing zeolite and bentonite, if the amount of zeolite and bentonite are more than 10% by weight of cement, the tensile strength is reduced by 23% compared to control mix.

Keywords: Pozzolan Materials, Bentonite, Zeolite, Compressive, Strength, Tensile Strength

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