

## Effect of Crashed Stone on Properties of Fly Ash Based-Geopolymer Concrete with Local Alkaline Activator in Egypt

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**Abstract :** Green concrete are generally composed of recycling materials as hundred or partial percent substitutes for aggregate, cement, and admixture in concrete. To reduce greenhouse gas emissions, efforts are needed to develop environmentally friendly construction materials. Using of fly ash based geopolymer as an alternative binder can help reduce CO<sub>2</sub> emission of concrete. The binder of geopolymer concrete is different from the ordinary Portland cement concrete. Geopolymer Concrete specimens were prepared with different concentration of NaOH solution M10, M14, and, M16 and cured at 60 °C in duration of 24 hours and 8 hours, in addition to the curing in direct sunlight. Thus, it is necessary to study the effects of the geopolymer binder on the behavior of concrete. Concrete is made by using geopolymer technology is environmental friendly and could be considered as part of the sustainable development. In this study the Local Alkaline Activator in Egypt and dolomite as coarse aggregate in fly ash based-geopolymer concrete was investigated. This paper illustrates the development of mechanical properties. Since the gained compressive strength for geopolymer concrete at 28 days was in the range of 22.5MPa - 43.9MPa.

**Keywords :** geopolymer, molarity, sodium hydroxide, sodium silicate

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