



## **Flexural & Tensile Strength Properties of GGBS and Phosphogypsum Blended Geopolymer Concrete**

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**Abstract:**In order to address environmental effects associated with Portland cement there is need to use other binders to make concrete. An effort in this regard is the development of Geopolymer concrete synthesised from the materials of geological origin which are the byproduct materials such as Flyash,GGBS(Ground Granulated Blast Furnace Slag), Phosphogypsum which are rich in silica and aluminium.The alkaline liquids are used for activation of these materials.The alkaline liquids used in this study for the polymerisation are the solutions of sodium hydroxide which is of 10 Molarity and sodium.This paper presents results of an experimental study on strength properties such as SplitTensile strength and Flexural strength.

The experiments were conducted on Flyash based Geopolymer concrete made by replacing Flyash with GGBS and Phosphogypsum inpercentagesranging from 0, 2.5, 5, 7.5, 10%.The studyinclude assessment of Split Tensile Strength and Flexural Strength of Geopolymer concrete specimens at the age of 28 and 90Days. The results shows that the strength of Geopolymer concrete made by blending withGGBS has increased with increase in GGBS percentage and in case of Phosphogypsum the strength has increased upto certain limit and then the strength decreases with increase in Phosphogypsum percentage.

**Key Words:**Geopolymer, Flyash, GGBS,Phosphogypsum, Alkaline liquids, Split Tensile Strength, Flexural Strength.

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