

## Accepted Manuscript

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PII: S0261-3069(14)00363-X

DOI: <http://dx.doi.org/10.1016/j.matdes.2014.05.001>

Reference: JMAD 6479

To appear in: *Materials and Design*

Received Date: 7 February 2014

Accepted Date: 2 May 2014

Please cite this article as: Deb, P.S., Nath, P., Sarker, P.K., The effects of ground granulated blast-furnace slag blending with fly ash and activator content on the workability and strength properties of geopolymer concrete cured at ambient temperature, *Materials and Design* (2014), doi: <http://dx.doi.org/10.1016/j.matdes.2014.05.001>

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**The effects of ground granulated blast-furnace slag blending with fly ash  
and activator content on the workability and strength properties of  
geopolymer concrete cured at ambient temperature**

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**Abstract**

Inclusion of ground granulated blast-furnace slag (GGBFS) with class F fly-ash can have a significant effect on the setting and strength development of geopolymer binders when cured in ambient temperature. This paper evaluates the effect of different proportions of GGBFS and activator content on the workability and strength properties of fly ash based geopolymer concrete. In this study, GGBFS was added as 0%, 10% and 20 % of the total binder with variable activator content (40 and 35%) and sodium silicate to sodium hydroxide ratio (1.5 to 2.5). Significant increase in strength and some decrease in the workability were observed in geopolymer concretes with higher GGBFS and lower sodium silicate to sodium hydroxide ratio in the mixtures. Similar to OPC concrete, development of tensile strength correlated well with the compressive strength of ambient-cured geopolymer concrete. The

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