International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.8, pp 88-97, 2017

Use of Portland Cement to Improve the Properties of Self Compacting Geopolymer Concrete

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Abstract : Preparation of Self Compacting Geopolymer Concrete was proved to be tedious as enormous amount of Super plasticiser and heat curing regime hinders the commercial production of geopolymer concrete. Moreover compatibility of Super plasticiser is still an unknown element in the area of Self compacting geopolymer concrete. Here an attempt has been made to stabilise the properties of Self compacting geopolymer concrete by inclusion of Ordinary Portland cement in minimal quantities. Rheology and mechanical properties was studied by incorporating cement at the dosages of 0, 2, 4, 6, 8 % by mass of binder in Self compacting geopolymer concrete. Results showed tremendous change in fresh and hardened properties of concrete for an addition of Ordinary Portland cement in small amount say 5% of binding material. Curing regime was altered to normal external exposure curing which proved benefits of laying geopolymer concrete in tropical climatic conditions.

Keywords : Self compacting geopolymer concrete; Super plasticiser dosage; Mechanical properties; External exposure curing; Ordinary Portland cement.

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