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Title:	Performance of self-compacting geopolymer concrete containing different mineral admixtures
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Keywords:	Self-compacting geopolymer concrete;Fly ash;Silica fume;Ground granulated blast furnace slag
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Abstract:	Self-compacting geopolymer concrete is an innovative concrete that does not require vibration for placing and compaction. It is able to flow under its own weight, completely filling formwork and achieving full compaction, even in the presence of congested reinforcement. In this paper fly ash was replaced by different mineral admixtures, which reduces the cost of self compacting geopolymer concrete especially if the mineral admixtures are waste or industrial by-product. This paper presents an experimental investigation on strength aspects like compressive, flexural and split tensile strength of self compacting geopolymer concrete containing different mineral admixtures and workability tests for different mineral admixtures (slump, L-box, U-box and T <sub>50</sub> ) are carried out. The methodology adopted is that mineral admixtures GGBFS and silica fume are replaced by 10%, 20%, 30% and 5%, 10% and 15% respectively for fly ash and performance is measured and compared. The influence of mineral admixtures on the workability, compressive strength, splitting tensile strength and flexural strength of self-compacting concrete is investigated. It is observed that when mineral admixtures used in self-compacting geopolymer concrete, only 6% of super-plasticizer necessary to achieve a given fluidity. From this view point, a cost effective self-compacting concrete design can be obtained.
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