Abstract Title: EXPERIMENTAL STUDY ON FLY ASH AND GGBS BASED GEOPOLYMER AND ITS COMPARISON WITH COUNTRY BURNT BRICK

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Abstract (not more than 300 words)

The construction industry currently faces a number of challenges due to the depletion of conventional and non -renewable resources, accessibility and affordability, waste disposal and resulting environmental degradation. Cement is a widely used man-made material and an inevitable component of the industry. The cement manufacturing is both highly energy intensive and resource intensive process and their industry is one of the largest producers of carbon dioxide. The concept of geopolymer is introduced as an alternative for cement, complying with the notion of sustainability in construction. This demands alternative materials that minimize the environmental impacts as well as utilising waste by products. This paper aims to find a sustainable building material using the concept of geopolymer which is on par with the conventional bricks in terms of strength and durability. Various proportions of ground granulated blast furnace slag and fly ash are used to form the binder specimens and samples are cast. The samples are then compared with the conventional burnt clay bricks based on their strength characteristics and durability.

This research established the potential of fly ash and ground granulated blast furnace slag as a source material for geopolymer binder to replace cement. In addition, application of geopolymer in building blocks, as a sustainable alternative to conventional building blocks and it's suitability in structural and sustainable construction were also verified through the study

Keywords— Geopolymer, geopolymer binder, sustainable construction

Professional Biography (100-150 words)

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