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(54) Title of the invention : A CUSTOMIZABLE AND ECO-FRIENDLY GEOPOLYMER CONCRETE COMPOSITION COMPRISING OF BINDER MATERIAL SELECTED FROM FLY ASH AND RED MUD AND GGBS

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(57) Abstract :

The present invention relates to a novel mix design methodology and development of strength versus alkali activator solution (AAS) to binder ratio relationship for geopolymer concrete by employing class F fly ash, red mud and GGBS all together as binder materials. The invented mix comprises said class F fly ash, GGBS and red mud in the select ratio of 50:30:20 and is ambient curable without needing additional heating for curing and provides concrete with compressive strength up to 72 MPa. This is the first report having substantial amount (20%) of red mud in the geopolymer composition. The design mix is customizable and provides an opportunity to the user to choose between the strength or AAS to binder ratio from the developed strength versus alkali activator solution (AAS) to binder ratio relationship.

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