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DEPARTMENT OF CIVIL ENGINEERING

A Project Report On

"GEOPOLYMER MORTAR"

(KSCST Sanctioned Project)

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ABSTRACT

This report presents a comprehensive summary of the extensive studies conducted on fly ash-based Geopolymer mortar. Test data were used to identify the effects and salient factors that influence the properties of the Geopolymer mortar in the fresh and hardened states.

The fly ash was brought from Thermal Power Plant Raichur and the physical properties of fly ash were determined. According to the design, the mixing of mortar was carried out and the mix was casted in the moulds of 70x70x70mm size. The curing of mortar cubes was done on an average temperature of 50°C. The curing process was carried out for 1, 3 and 7days. These results were utilized to propose a simple method for the design of Geopolymer mortar mixtures.

The testing of hardened cubes was carried out in compressive testing machine. The testing of cement mortar was carried out as same as Geopolymer concrete, to tally the strength. Graphs are plotted to check the variation of strength of 1, 3 and 7days.The maximum compressive strength of Geopolymer mortar is 23N/mm^2.

The last part of the article describes the application of the Geopolymer mortar in the construction industry. The economic merits of the Geopolymer mortar are also mentioned.