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# CONSTRUCTION OF GEOPOLYMER CONCRETE ROAD

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# ABSTRACT

Geopolymer concrete is fly ash based alkali-activated concrete. Cement is eliminated by using fly ash and ground granulated blast-furnace slag. Water is used only to initiate the polymerization process and has no use after the initiation. The water gets expelled out once the concrete sets. There are no Indian standard codes for the mix design of geopolymer concrete. Hence, NTPC-NETRA and CSIR-Central Building Research Institute, Roorkee, have developed high strength fly ash based geopolymer concrete for the construction of the road as per IRC specifications. A Geopolymer concrete road stretch of 50 m length and 3 m width with 40 MPa concrete strength had been laid successfully at CSIR-CBRI, Roorkee using NTPC Dadri fly ash, first of its kind in India. The second trial road was 100m long and 6.5m wide at NTPC Dadri plant. The first-ever road after the trials was 500m long at NTPC RAMAGUNDAM, recently completed.

This project is majorly based on the practical aspects of the construction of Geopolymer Concrete Road. Hence it includes measurements taken for billing, quantity estimations, cost analysis, and physical and chemical requirements raw materials should meet to be used in Geopolymer concrete.

**Keywords**: GeoPolymer Concrete, NETRA, CSIR-CBRI