

Utilization of Fly Ash as Backfilling Material in Indian Coal Mines

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Abstract : Fly ash is a solid waste product of coal based electric power generating plants. Fly ash is the finest of coal ash particles and it is transported from the combustion chamber by exhaust gases. Fly ash is removed by particulate emission control devices such as electrostatic precipitators or filter fabric bag-houses. It is a fine material with spherical particles. Large quantities of fly ash discharged from coal-fired power stations are a major problem not only in terms of scarcity of land available for its disposal, but also in environmental aspects. Fly ash can be one of the alternatives and can be a viable option to use as a filling material. This paper contains the problems associated with fly ash generation, need for its management and the efficacy of fly ash composite as a backfilling material. By conducting suitable geotechnical investigations and numerical modelling techniques, the fly ash composite material was tested. It also contains case studies of typical Indian opencast and underground coal mines.

Keywords : backfilling, fly ash, high concentration slurry disposal, power plant, void infilling

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