

Prospects of utilization of fly ash and red mud as construction materials

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Abstract

Building materials industry is a fast growing sector, where a large quantity of natural resources is being used to meet the requirements. During the industrial activities, huge quantities of wastes are generated. Disposal of these materials not only occupies the valuable land but also causes environmental pollution. At present, Utilization of industrial wastes like fly ash and red mud in making building materials has received more attention to conserve the natural resources and minimize the environmental pollution. Manufacture of building bricks without burning of solid fuel is one of the options for utilization of these waste and also reduction of CO₂ emission. A considerable amount of research is being carried out at IMMT, Bhubaneswar to establish alternative methods of energy saving processes in making building materials. Innovative and sustainable processes such as mineral cementation have been developed for manufacture of cold setting building bricks by utilizing the industrial wastes like fly ash and red mud. In this process the binding strength develops by hydraulic reaction in presence of water. This process can be applied to some industrial wastes and tailings to formulate the building products.

Key words: Industrial wastes, fly ash, red mud, Mineral cementation technology, construction materials.