

# Utilization of Some Industrial Solid Wastes as Construction Materials and Soil Modification – An Overview

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## Abstract

Generation of industrial wastes is increasing day by day due to installation of new production units and expansion of the existing ones, leading to a number of economical and ecological problems. Solid waste management is gaining importance with the ever-increasing quantities of industrial wastes. Fly ash generated from thermal power plants, red mud (residue generated from Bayer's process) from alumina refineries and slags from pyrometallurgical operations are a few examples of voluminous industrial solid wastes generated all over the world. Some of the industrial waste materials have been widely studied for application in soil modifications and construction materials. Modification of concrete properties by the addition of appropriate materials is a popular field of concrete research. This paper gives an overview of the possible application of coal fly ash, red mud, and steel industry wastes in construction materials and soil amendment. Construction materials partially using coal fly ash have been well accepted by the consumers resulting in about 40% utilization but many difficulties are faced when it comes to the use of red mud. The world utilization of red mud is less than 5% inspite of intensive R and D efforts made in development of products from red mud. The challenges faced in utilization of such wastes are also presented in this paper.

**Keywords:** Industrial Solid Wastes, Coal fly ash, red mud, steel industry wastes, slag cement, soil modification, Construction Materials