

### **3.0 Various usage of ash**

Considering the pozzolanic, mineralogical, geo-technical and other properties of fly ash, it has various applications in following areas:

1. Manufacture of clay ash bricks, fly ash lime/ cement and other building products
2. Manufacture of Portland Pozzolana Cement & Performance improver in Ordinary Portland Cement (OPC).
3. As a part replacement of OPC in cement concrete and asbestos cement products.
4. Construction of high volume fly ash concrete and concrete roads
5. Roller Compacted Concrete used for dam & pavement construction.
6. Construction of road embankment, low lying areas development & structural fills.
7. Construction of sub-base & base course of roads.
8. As flowable fill material in restricted areas where compaction is difficult.
9. Back filling of mines and stowing of under ground mines.
10. As a source of micro nutrients / soil amendment in agriculture and wasteland development.

However, in spite of availability of technology, standards and large quantity of fly ash, its utilization was negligible during Ninety's. In order to demonstrate the technology of fly ash use in various applications, Department of Science & Technology, Ministry of Environment & Forests and Ministry of Power created

the Fly Ash Mission in the year 1994. Under this Mission large number of demonstration projects had been carried out in association with Research Institutes, user organization and power utilities. In the year 1999, Ministry of Environment and Forests (MoEF) had issued Gazette Notification on fly ash utilization. Subsequently necessary amendment to this notifications was issued in August 2003. All these activities has helped to develop confidence among engineers, builders, construction department etc. which resulted in country's fly ash utilization has reached from 1% in 1994 to about 12% in 1999-2000.