

## FLY ASH SAND LIME BRICKS

In presence of moisture, fly ash reacts with lime at ordinary temperature and forms a compound possessing cementitious properties. After reactions between lime and fly ash, calcium silicate hydrates are produced which are responsible for the high strength of the compound. Bricks made by mixing lime and fly ash are, therefore, chemically bonded bricks. These bricks are suitable for use in masonry just like common burnt clay bricks. These bricks have the following advantages over the clay brick

1. Possess adequate crushing strength as a load bearing member.
2. Have cement colour in appearance, are uniform in shape and smooth in finish, require no plastering for building work and consume less mortar.
3. Are lighter in weight than ordinary clay bricks.
4. They can be produced in colours if desired

### **Proposal:**

Non availability of clay of suitable quality and increase in fuel prices are resulting in escalation of burnt clay bricks. Wherever Fly ash, sand and lime are available within 40 to 50 KM radius of a major market, fly ash sand lime bricks are a viable and economic alternative. Such units can be set up at few locations in A.P.

### **Product mix:**

Fly ash sand lime bricks of 225 x 112 x 75 mm size                      60000 per day

### **Market:**

Construction activity is growing in all major cities and suburbs. Selling 60000 bricks per day should be easy if the cost of production is controlled and the bricks offered at competitive price.

### **Manufacturing process:**

Fly ash sand lime bricks are manufactured by mixing fly ash, sand and lime in desired proportion which may be followed by chemical accelerator during wet mixing. This mixture is molded under pressure.

The green bricks can be air cured for 24-48 hours and then steam cured in autoclave at desired pressure and temperature. The green bricks may be steam / hot water cured at atmospheric pressure also.

**Technology:**

Proven technology is available from multiple sources

**Plant and Machinery:**

Mixer, hydraulic press, tunnel dryer and autoclaves are the main machinery. All the machinery is indigenous.

**Raw materials:**

The raw materials required are fly ash, sand and lime.

Bricks are made with the composition of 80 % fly ash, 10 % lime and 10 % sand.

Accelerators are added in some cases

**Utilities:**

Main utilities required are Power, Steam (10 – 12 Kg / sq.cm pressure) and water. Steam generation using concentrated solar heat collectors may prove economical if land is available at low price.

**Project cost :**

About Rs.120 lakhs

**Turnover and profitability:**

Annual turn over will be about Rs. 2 crores. Net profit margin will be 25 to 30 %

**Suggested location:**

Near a thermal power plant and close to a major urban center.

**Entrepreneur profile:** suitable for entrepreneurs associated with building and construction Industry.

**Apitco's consultancy:**

1. Technology tie-up
2. Project planning