

PROJECT PROFILE ON FLY ASH BRICKS MANUFACTURING UNIT

1. INTRODUCTION

Fly Ash bricks are made of fly ash, lime, gypsum and sand. These can be extensively used in all building constructional activities similar to that of common burnt clay bricks. The fly ash bricks are comparatively lighter in weight and stronger than common clay bricks. Since fly ash is being accumulated as waste material in large quantity near thermal power plants and creating serious environmental pollution problems, its utilisation as main raw material in the manufacture of bricks will not only create ample opportunities for its proper and useful disposal but also help in environmental pollution control to a greater extent in the surrounding areas of power plants. In view of superior quality and eco-friendly nature, and government support the demand for Fly Ash Bricks has picked up.

2. MARKET DEMAND

The country consumes about 180 billion tonnes bricks, exhausting approximately 340 billion tonnes of clay every year and about 5000 acres of top soil land is made unfertile for a long period. The Government is seriously concerned over soil erosion for production of massive quantities of bricks, in the background of enormous housing needs.

The excellent engineering property and durability of fly ash brick enlarges its scope for application in building construction and development of infrastructure, construction of pavements, dams, tanks, under water works, canal lining and irrigation work etc. Enormous quantities of fly ash is available in and around thermal power stations in all the states. The demand of bricks could be met by establishing small units near thermal power stations and to meet the local demand with less transportation costs.

PRODUCTION TARGETS

Basis of estimation: 300 Working Days in a Year
Single Shift basis
8 hours per shift

	Fly ash Bricks
Quantity (Nos)	1400000
Value (Rs)	1680000

3. MANUFACTURING PROCESS

Fly Ash Bricks are manufactured in the same manner, as Clay Bricks are manufactured. Only difference between the two processes is the basic raw material.

The technologies for the manufacture of fly ash bricks can be classified into the following main technology routes:

Clay – fly ash bricks
Red mud – fly ash bricks
Sand-fly ash bricks
Fly ash – lime bricks
Fly ash – lime/gypsum bricks

Clay fly ash brick manufacturing is most suitable for transition with minimum changes from existing practices and manual moulding of bricks, which is most common. Red-mud should be used where this industrial waste is available. CBRI technology is well tried and tested. These can also have semi-mechanized operations, but manual operations are most effective cost.

The major steps in preparation of bricks by Chimney bhatta process are as follows:-

- 1) Collection of Different clay and Flyash.
- 2) Mixing and preparation of clay-flyash mix.
- 3) Preparation of Bricks through moulds.

- 4) Drying of Bricks.
- 5) Filling of Kiln.
- 6) Burning of Bhatta.
- 7) Cooling of Bhatta.
- 8) Empty & Refilling of Bhatta.
- 9) Inspection and sorting of Bricks according to grades.
- 10) Dispatch.

4. QUALITY CONTROL STANDARDS

The Bureau of Indian Standards has formulated and published the specification for maintaining quality of product and testing purpose. IS 12894:1990.

5. LAND & BUILDING

1.	Covered area	Sq. Ft.	500
2.	Uncovered area	Sq. Ft.	86500
3.	Total area	Sq. Ft.	87000
4.	Whether constructed or Rented		Constructed
5.	If constructed, constructed value including chimney	Rs	250000
6.	If Rented, Rental value (per month)	Rs	

6. MACHINERY AND EQUIPMENT

S.N.	Description	Qty.	Value (Rs.)
1.	Flyash Mixer	1	150000
2.	Semiautomatic Brick Making Machine	1	450000
3.	Material Handling Systems	L.S.	125000
4.	Moulds	Lot.	50000
5.	Chimney Bhatta with Chimney	1 Set	250000
6.	Other Tools	L.S.	10000
7.	Furniture & Fixtures	L.S.	25000
8.	Sales Tax, Freight & Insurance etc.		106000
	Total		1166000

7. RAW MATERIAL (PER MONTH)

S.N.	Particulars	Quantity (MT)	Value (Rs)
1.	Flyash*	60	3000
2.	Royalty for Local Clay Suitable for Brick	140	7000
3.	Husk and Sand	L.S.	500
	Total		10500

*: Mean flyash is procured from the nearest thermal power station and only transportation cost has to bear by the promoter

8. STAFF & LABOUR (PER MONTH)

S.N	Particulars	Qty	Rate	Value (Rs)
A	Administrative and Supervisory			
(i)	Manager	1	3000	3000
(ii)	Peon/ Chowkidar	2	1000	2000
B	Technical (Skilled-Unskilled)			
(i)	Skilled Worker	2	2000	4000

(ii)	Unskilled Worker	10	1500	15000
	Sub-Total			24000
	Plus perquisites @ 30% of salaries			7200
	TOTAL			31200

9. OTHER EXPENSES (PER MONTH)

1.	Rent of Building	N.A.
2.	Electricity Charges	10000
3.	Fuel Exp.	15000
4.	Advertisement & Travelling	2000
5.	Transport	3000
6.	Consumable & stores etc.	2000
7.	Potage expenses/ telephones	250
8.	Stationery	250
9.	Repairs & Maintenance's	500
	Total	33000

10. WORKING CAPITAL (FOR ONE MONTH)

SL.NO.	DESCRIPTION	AMOUNT(RS)
1	Raw material	10500
2	Salaries & Wages	31200
3	Other Expenses	33000
	Total	74700

11. TOTAL CAPITAL INVESTMENT

Building & Other Civil Works	250000
Machinery & Equipment	1166000
Working capital for one month	74700
Total	1490700

12. COST OF PRODUCTION (PER ANNUM)

Total recurring cost per year	896400
Depreciation on machinery & equipment	140000
Interest on total investment @ 10%	225000
Total	1261400

13. SALES PROCEEDS (PER ANNUM)

S.N.	Item	Qty (NOS)	Value (Rs.)
1.	Flyash Clay Bricks	1400000	1680000
	Total		1680000

14. PROFITABILITY (BEFORE INCOME TAX)

1.	Annual Gross Profit	418600
2.	% of Profit on Sales	24.91%
3.	Break Even Analysis	
3.1	Annual Fixed Cost	770400
3.2	Annual Sales	1680000
3.3	Annual Variable Cost	126000
3.4	Break Even Point	49.58%

Break-Even Analysis

(% of Total Production envisaged)

$$\frac{\text{Annual fixed cost} \times 100}{\text{Annual sales} - \text{Annual variable costs}} = \%$$

15. Manufactures/ Suppliers of Machinery

1	M/s. Jindal Hydraulics D-203, Sector-10, Noida (UP)
2	M/s. Stark and Co. 17, Najafgarh Road, Near Jakhira Chowk, New Delhi - 110015

16. Suppliers of Raw Materials

From Thermal power station & local suppliers of lime etc.

17. IMPLEMENTATION PERIOD

Proposed Project can commence production with in 6-8 weeks after sanction and first disbursement of term loan.

18. ASSUMPTION FOR GENERATING PROJECT PROFITABILITY

1	Number of Working Days in a year	300 Days
2	Number of Shifts in a day	1 One
3	Hours in a Shift	8 hours
4	Plant Capacity	Consider on Average production capacities of plant.
5	Raw material Estimates	Based upon product Mix
6	Raw Material Availability	Sidhi, Betul, Hoshangabad, Shahdole, Umaria districts of MP
7	Depreciation	Straight Line Method
8	Manpower	According to project Requirement
9	Rent estimate	On the basis of current market prize of the area.
10	Potential Area of Marketing the products	Households & contractors of the area.

11	If project is funded, term loan would be	60-80% of Total investment
12	Moratorium Period	6- 12 months
13	Repayment Period	5-7 years
14	Project may be established under	PMEGP (GOI) / Tribal Self Employment Scheme (NSTFDC) or Rani Durgawati Scheme of MP