PROJECT PROFILE ON PLASTER OF PARIS

1. Name of the Product : - Plaster of Paris

3. Production capacity : - Quantity: 900 MT / year
Value: Rs.6.18 lakh

4. Month & year of preparation : - February, 2011

5. PREPARED BY : - Glass & Ceramic Division
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Introduction of the Product

Plaster of Paris which is calcium sulphate with half molecule of water of crystallization ($CaSo_4$.½ H_2 o) and hygroscopic characteristics obtained by duly calcined the raw material i.e. Gypsum ($CaSo_4$ $2H_2o$). It possesses outstanding property of setting and subsequent hardening when mixed with water.

Plaster of Paris is extensively used in ceramic industry for preparation models and moulds. It is also used as main raw material in the manufacture of toys & statues, chalk crayons, gypsum plaster boards, and decorative picture frames besides wide range of applications in the interior decoration of buildings and other establishments.

Plant capacity per year: - 1,200 MT

Market & Demand Aspects

As there is growing building construction activity thus requiring large quantities of Plaster of Paris. Demand for the product is also increasing in making mould & models. There is also considerable demand for the plaster of Paris arising from a large number of studies and establishments engaged in making statutes and interior decoration as well as decorative plaster boards for false ceiling etc, which is in turn creating a good scope for setting up new units in this line of manufacture.

Raw material: - Gypsum

Manufacturing Process and Source of Technology

Gypsum is the basic raw material required to manufacture Plaster of Paris. These are cleaned and washed for removal of impurities, dried in sunlight and then pulverized. Gypsum powders are calcined in a rotary drum calcinatory using light diesel oil/firewood/coal as fuel. The low pressure burner is sufficient to reach the calcinations temp. ranges from 160^0C to 180^0C. The process of calcinations is done over a period of about 2 hours, so that 1½ molecule of water is removed to obtain the required properties. After cooling the calcined powder is passed through 150 mesh and packed in airtight polythene lined gunny bags.

This technology is locally available and also can be availed from Central Building Research Institute, Roorke (UP).

Basis of Project Selection:-

An entrepreneur is said to be an opportunity seeker. For the potential entrepreneur his/her first task is to identify, explore and then select the business opportunity.

Presumption:-

- The proposed project envisaged to manufacture 3 MT per day.
- The unit will run on single shift basis per day and 300 working days per year at 75% capacity utilization.
- To achieve production capacity, 15 days trial production is required.
- The salary & wages is considered on the basis of prevailing market rate.
- The break-even point is calculated on full capacity utilization basis.

- Interest on total capital investment has been taken into account @15%.
- 25% of the project cost is to be considered as margin money.
- Cost of machinery & equipment, raw material indicated in the project are to be revised according to the prevailing market rates at the time of actual implementation.

Utilities: 10 HP Power

FINANCIAL ASPECTS

Fixed Capital

Land & Building	**Value (Rs.)**
a) Land: about 1 acre	3,00,000=00
b) Building:	
Office & Stores, etc- 100 sq. mtrs	1,50,000=00
Work shed -150 Sq. mtrs.	1,50,000=00
	6,00,000=00

Machinery and Equipment

Sl.No.	**Description**	**Qty.**	**Value (Rs.)**
1	Attribution disc. Pulverisor 1/2 MT/hr with 7 HP motor & accessories	1	2,50,000=00
2	Rotary cylindrical drum calcinor (fabricated) size 2.5 mtr. (Length) x 2 mtr. (dia), capacity 4 MT / charge mounted on a fuel fired roasting oven made of common bricks provided with firing grates on either side of the oven and an exhaust chimney therewith and complete with a vapour outlet, thermometer, motor, gear and accessories.	1	3,50,000=00
3	Burners & other misc. equipments etc.	LS	1,00,000=00
4	Office equipment, furniture and fixtures	LS	1,00,000=00
	Total		8,00,000=00

Pre-operative expenses 50,000=00

Total Fixed Capital: (6,00,000 + 8,00,000 + 50,000) 14,50,000=00

Working capital (per month):

Salary & Wages

Personnel	**Nos.**	**Salary (Rs)**	**Total (Rs)**
Manager cum Supervisor	1	7500	7,500=00
Chemist	1	4000	4,000=00
Clerk cum Typist / Store Keeper	1	3000	3,000=00
Skilled Workers	2	3000	6,000=00
Unskilled Workers	4	2000	8,000=00
Peon / Watchman	1	2000	2,000=00

+ 15% Perquisites			5,000=00
			35,500=00

Raw Material

Particulars	**Qty.**	**Rate (Rs.) / MT**	**Value (Rs.)**
Gypsum	100 MT	2,000/-	2,00,000=00
Woven bags for packing	LS	-	1,00,000=00
			3,00,000=00

Utilities:	15,000=00

Other misc. recurring expenses

Postage & Stationery	500=00
Repair & Maintenance	5,000=00
Transport charges	5,000=00
Misc. expenditure	5,000=00
	15,500=00

Total Working Capital (per month):

Raw materials	3,00,000=00
Salary & Wages	35,500=00
Utilities	15,000=00
Other misc. recurring expenses	15,500=00
	3,66,000=00
Working Capital (for 3 months)	10,98,000=00

Total Capital Investment:

Fixed Capital	14,50,000=00
Working Capital (for 3 months)	10,98,000=00
	25,48,000=00

FINANCIAL ANALYSIS

Cost of Production (per year)

Total recurring cost per year	43,92,000=00
Depreciation on building @5%	15,000=00
Depreciation on m/c & equipment @10%	80,000=00
Interest on total Investment @15%	3,82,000=00
	48,69,000=00

Annual Turnover

Item	**Qty.**	**Rate (Rs.)**	**Value (Rs.)**
Plaster of Paris	900 MT	6,500/- MT	58,50,000=00

Net Profit (per year)	**9,81,000=00**

Profit ratio on Sales	**16.76%**
Rate of return	**38.50%**

Break Even Analysis (B.E.P)

(a) Fixed Cost

• Depreciation	95,000=00
• Interest	3,82,000=00
• 40% of salary & wages	1,70,400=00
• 40% of other contingent expenses	74,400=00
	7,21,800=00
(b) Net profit per year	9,81,000=00

B.E.P = 42.40%

List of Suppliers Address

Plant & Machineries

1. M/s. Amic Industries, 10, BT Road, Kolkata-36
2. M/s. Durgapur Engineering Co. Ltd. Marshal House, 33/1, Netaji Subhas Road, Kolkata-700001
3. M/s. Wesman Engineers Co. (P) Ltd. 1/2, Allerby Road, Kolkata-20
4. M/s. Continental Thermal Engineers, 806, II Stage, 4th Main, A Block, Rajajinagar, Bangalore-10

Raw Materials

1. M/s. Mysore Minerals, 39, MG Road, Bangalore-1
2. M/s. Shri Venkateswara Products, Vadakku Venganallur, Opp. Raju's College,
3. M/s. Andhra Pradesh Mining Corporation, 6-3-672, Punjagutta, Hyderabad-82
4. M/s. Madras Mineral Suppliers No.2/10, Toovipuram,Tuticorin-3 (Tamil Nadu)

5, Anderson, Habibulla Avenue, Chennai-4

6. Gypsum: Availability in the neighboring country (Bhutan)

Resource Centre of Technology: Manufacture of Plaster of Paris does not require very high technology. This technology can be availed from MSME-DI, Guwahati at free of cost.

List of units set up by using this project profile: Nil