

PROJECT REPORT

Of

Plaster of Paris Manufacturing

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Plaster of Paris Manufacturing Unit**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]



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PROJECT AT A GLANCE

- 1 Name of the Entrepreneur : XXXXXXXX
- 2 Constitution (legal Status) : XXXXXXXX
- 3 Father's/Spouce's Name : XXXXXXXX
- 4 Unit Address : XXXXXXXX
- Taluk/Block:
District : XXXXX
Pin: XXXXX State:
E-Mail : XXXXX
Mobile XXXXX
- 5 Product and By Product : **Plaster of Paris Manufacturing**
- 6 Name of the project / business activity proposed : **Plaster of Paris Manufacturing**
- 7 Cost of Project : Rs25lac
- 8 Means of Finance
Term Loan Rs.13.29 Lacs
KVIC Margin Money - As per Project Eligibility
Own Capital Rs.2.5 Lacs
Working Capital Rs.9.2 Lacs
- 9 Debt Service Coverage Ratio : 3.69
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 6 Months
- 12 Break Even Point : 32%
- 13 Employment : 6 Persons
- 14 Power Requirement : 10.00 HP
- 15 Major Raw materials :
- 16 Estimated Annual Sales Turnover : 45.56 Lacs
- 16 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lacs)

Particulars	Amount
Land	Rented/Owned
Building & Civil Work (2500 Sq Ft)	3.50
Plant & Machinery	10.10
Furniture & Fixtures	0.67
Pre-operative Expenses	0.50
Working Capital Requirement	10.23
Total	25.00

MEANS OF FINANCE

Particulars	Amount
Own Contribution @10%	2.50

Term Loan	13.29
Workign Capital Finance	9.20
Total	25.00

	General	Special
Beneficiary's Margin Monery (% of Project Cost)	10%	5%

PROJECT REPORT ON PLASTER OF PARIS



INTRODUCTION

Plaster of Paris which is calcium sulphate with half molecule of water of crystallization ($\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$) and hygroscopic characteristics obtained by duly calcined the raw material i.e. Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$). 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. They are extensively used for writing on black boards and markings on any colored surface. Hospitals and Dental laboratories-pharmaceutical grade, Orthopedic plasters are used by hospitals and clinics for all types of orthopedic cast work such as surgical caste, orthopedic bandages etc

RAW MATERIAL: - Major raw materials require are the Gypsum, maleic anhydride, and Sodium hydroxide. Gypsum available in form of NATURAL GYPSUM, MARINE GYPSUM, DRIED GYPSUM and PHOSPHO GYPSUM.

MANUFACTURING PROCESS

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 160⁰C to 180⁰C. 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).

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 Average capacity utilization basis
- Interest on total capital investment has been taken into account @11.50%.
- 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

PROJECTED BALANCE SHEET

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>SOURCES OF FUND</u>					
Capital Account	2.50	2.50	2.50	2.50	2.50
Retained Profit	9.58	19.96	31.46	43.93	58.65
Term Loan	13.29	9.97	6.65	3.32	0.56
Cash Credit	9.20	9.20	9.20	9.20	9.20
Sundry Creditors	1.42	1.51	1.61	1.70	1.89
Provisions & Other Liab	0.36	0.40	0.44	0.48	0.53
TOTAL :	36.35	43.55	51.85	61.14	73.33
<u>APPLICATION OF FUND</u>					
Fixed Assets (Gross)	14.27	14.27	14.27	14.27	14.27
Gross Dep.	1.90	3.56	5.00	6.24	7.30
Net Fixed Assets	12.37	10.71	9.27	8.03	6.97
Current Assets					
Sundry Debtors	4.56	5.37	5.70	6.04	6.68
Stock in Hand	7.09	7.56	8.03	8.51	9.45
Cash and Bank	9.84	17.16	25.82	35.23	46.57
Deposits & Advances	2.50	2.75	3.03	3.33	3.66
TOTAL :	36.35	43.55	51.85	61.14	73.33
	-	-	-	-	-

PROJECTED CASH FLOW STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>SOURCES OF FUND</u>					
Share Capital	2.50	-			
Reserve & Surplus	10.64	11.54	12.77	13.87	16.35
Depreciation & Exp. W/off	1.90	1.67	1.44	1.24	1.07
Increase in Cash Credit	9.20	-	-	-	-
Increase In Term Loan	13.29	-	-	-	-
Increase in Creditors	1.42	0.09	0.09	0.09	0.19
Increase in Provisions	0.36	0.04	0.04	0.04	0.05
TOTAL :	39.31	13.34	14.34	15.24	17.65
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	14.27	-	-	-	-
Increase in Stock	7.09	0.47	0.47	0.47	0.94
Increase in Debtors	4.56	0.81	0.34	0.34	0.64
Increase in Deposits & Adv	2.50	0.25	0.28	0.30	0.33
Repayment of Term Loan	-	3.32	3.32	3.32	2.76
Taxation	1.06	1.15	1.28	1.39	1.63
TOTAL :	29.48	6.01	5.68	5.82	6.32
Opening Cash & Bank Balance	-	9.84	17.16	25.82	35.23
Add : Surplus	9.84	7.33	8.65	9.42	11.33
Closing Cash & Bank Balance	9.84	17.16	25.82	35.23	46.57

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>A) SALES</u>					
Gross Sale	45.56	53.66	57.04	60.41	66.83
Total (A)	45.56	53.66	57.04	60.41	66.83
<u>B) COST OF SALES</u>					
Raw Mateiral Consumed	20.25	21.60	22.95	24.30	27.00
Elecricity Expenses	3.77	4.02	4.27	4.52	5.02
Repair & Maintenance	-	0.54	0.57	0.60	0.67
Labour & Wages	4.75	5.23	5.75	6.32	6.96
Depreciation	1.90	1.67	1.44	1.24	1.07
Consumables and Other Expenses	1.37	1.61	1.71	1.81	2.00
Cost of Production	32.03	34.66	36.68	38.80	42.72
Add: Opening Stock /WIP	-	4.05	4.32	4.59	4.86
Less: Closing Stock /WIP	4.05	4.32	4.59	4.86	5.40
Cost of Sales (B)	27.98	34.39	36.41	38.53	42.18
C) GROSS PROFIT (A-B)	17.58	19.28	20.62	21.89	24.65
	39%	36%	36%	36%	37%
D) Bank Interest (Term Loan)	1.15	1.39	1.00	0.62	0.25
Bank Interest (C.C. Limit)	0.92	0.92	0.92	0.92	0.92
E) Salary to Staff	3.96	4.36	4.79	5.27	5.80
F) Selling & Adm Expenses Exp.	0.91	1.07	1.14	1.21	1.34
TOTAL (D+E)	6.94	7.73	7.86	8.02	8.30
H) NET PROFIT	10.64	11.54	12.77	13.87	16.35
I) Taxation	1.06	1.15	1.28	1.39	1.63
J) PROFIT (After Tax)	9.58	10.39	11.49	12.48	14.71

COMPUTATION OF MANUFACTURING OF PLASTER OF PARIS

Items to be Manufactured

PLASTER OF PARIS

Manufacturing Capacity per day	-	3.00	MT
	-		
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		900.00	MT
Year		Capacity	MT
		Utilisation	
IST YEAR		75%	675
IIND YEAR		80%	720
IIIRD YEAR		85%	765
IVTH YEAR		90%	810
VTH YEAR		100%	900

COMPUTATION OF RAW MATERIAL

Item Name		Quantity of	Recovery	Unit Rate of	Total Cost
		Raw Material		/MT	Per Annum
		MT			(100%)
Gypsum	100%	1,200.00	75%	2,250.00	27.00

Total
(Rounded off in lacs)

27.00

Annual Consumption cost

(In Lacs)

27.00

Raw Material Consumed	Capacity Utilisation	Amount (Rs.)	75%	Production	MT
IST YEAR	75%	20.25	56%		506.25
IIND YEAR	80%	21.60	60%		540.00
IIIRD YEAR	85%	22.95	64%		573.75
IVTH YEAR	90%	24.30	68%		607.50
VTH YEAR	100%	27.00	75%		675.00

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
Finished Goods					
(30 Days requirement)	4.05	4.32	4.59	4.86	5.40
Raw Material					
(45Days requirement)	3.04	3.24	3.44	3.65	4.05
Closing Stock	7.09	7.56	8.03	8.51	9.45

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars			Total
			Amount
Stock in Hand			7.09
Sundry Debtors			4.56
		Total	11.64
Sundry Creditors			1.42
Working Capital Requirement			10.23
Margin			1.02
Working Capital Finance			9.20

BREAK UP OF LABOUR

Particulars		Wages	No of	Total
		Per Month	Employees	Salary
Skilled Worker		8,000.00	2	16,000.00
Unskilled Worker		5,000.00	4	20,000.00
				36,000.00
Add: 10% Fringe Benefit				3,600.00
Total Labour Cost Per Month				39,600.00
Total Labour Cost for the year (In Rs. Lakhs)				4.75

3.00

BREAK UP OF SALARY

Particulars		Salary	No of	Total
		Per Month	Employees	Salary
Manager		12,000.00	1	12,000.00
Accountant		8,000.00	1	8,000.00
Sales		10,000.00	1	10,000.00
Total Salary Per Month				30,000.00
Add: 10% Fringe Benefit				3,000.00
Total Salary for the month				33,000.00
Total Salary for the year (In Rs. Lakhs)				3.96

3.00

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	TOTAL
Rate of Depreciation		10.00%	15.00%	10.00%	
Opening Balance	Leased	-	-	-	-
Addition	-	3.50	10.10	0.67	14.27
	-	3.50	10.10	0.67	14.27
Less : Depreciation	-	0.35	1.52	0.03	1.90
WDV at end of Ist year	-	3.15	8.59	0.64	12.37
Additions During The Year	-	-	-	-	-
	-	3.15	8.59	0.64	12.37
Less : Depreciation	-	0.32	1.29	0.06	1.67
WDV at end of IIInd Year	-	2.84	7.30	0.57	10.71
Additions During The Year	-	-	-	-	-
	-	2.84	7.30	0.57	10.71
Less : Depreciation	-	0.28	1.09	0.06	1.44
WDV at end of IIIrd year	-	2.55	6.20	0.52	9.27
Additions During The Year	-	-	-	-	-
	-	2.55	6.20	0.52	9.27
Less : Depreciation	-	0.26	0.93	0.05	1.24
WDV at end of IV year	-	2.30	5.27	0.46	8.03
Additions During The Year	-	-	-	-	-
	-	2.30	5.27	0.46	8.03
Less : Depreciation	-	0.23	0.79	0.05	1.07
WDV at end of Vth year	-	2.07	4.48	0.42	6.97

REPAYMENT SCHEDULE OF TERM LOAN

11.5%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
IST YEAR	Opening Balance						
	Ist Quarter	-	13.29	13.29	-	-	13.29
	IInd Quarter	13.29	-	13.29	0.38	-	13.29
	IIIrd Quarter	13.29	-	13.29	0.38	-	13.29
	Ivth Quarter	13.29	-	13.29	0.38	-	13.29
					1.15	-	
IIND YEAR	Opening Balance						
	Ist Quarter	13.29	-	13.29	0.38	0.83	12.46
	IInd Quarter	12.46	-	12.46	0.36	0.83	11.63
	IIIrd Quarter	11.63	-	11.63	0.33	0.83	10.80
	Ivth Quarter	10.80		10.80	0.31	0.83	9.97
					1.39	3.32	
IIIRD YEAR	Opening Balance						
	Ist Quarter	9.97	-	9.97	0.29	0.83	9.14
	IInd Quarter	9.14	-	9.14	0.26	0.83	8.31
	IIIrd Quarter	8.31	-	8.31	0.24	0.83	7.48
	Ivth Quarter	7.48		7.48	0.21	0.83	6.65
					1.00	3.32	
IVTH YEAR	Opening Balance						
	Ist Quarter	6.65	-	6.65	0.19	0.83	5.82
	IInd Quarter	5.82	-	5.82	0.17	0.83	4.98
	IIIrd Quarter	4.98	-	4.98	0.14	0.83	4.15
	Ivth Quarter	4.15		4.15	0.12	0.83	3.32
					0.62	3.32	
VTH YEAR	Opening Balance						
	Ist Quarter	3.32	-	3.32	0.10	0.83	2.49
	IInd Quarter	2.49	-	2.49	0.07	0.83	1.66
	IIIrd Quarter	1.66	-	1.66	0.05	0.55	1.11
	Ivth Quarter	1.11		1.11	0.03	0.55	0.56
					0.25	2.76	

CALCULATION OF D.S.C.R

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>CASH ACCRUALS</u>	11.48	12.05	12.93	13.72	15.78
Interest on Term Loan	1.15	1.39	1.00	0.62	0.25
Total	12.62	13.44	13.93	14.34	16.02
<u>REPAYMENT</u>					
Instalment of Term Loan	3.32	3.32	3.32	2.76	2.76
Interest on Term Loan	1.15	1.39	1.00	0.62	0.25
Total	4.47	4.71	4.33	3.38	3.01
DEBT SERVICE COVERAGE RAT	2.82	2.85	3.22	4.24	5.33
AVERAGE D.S.C.R.			3.69		

COMPUTATION OF SALE

Particulars	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
Op Stock	-	50.63	54.00	57.38	60.75
Production	506.25	540.00	573.75	607.50	675.00
	506.25	590.63	627.75	664.88	735.75
Less : Closing Stock	50.63	54.00	57.38	60.75	67.50
Net Sale	455.63	536.63	570.38	604.13	668.25
Sale Price per MT	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
Sale (in Lacs)	45.56	53.66	57.04	60.41	66.83

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION			
Total Working Hour per day	Hours	8	
Electric Load Required	HP	10	
Load Factor		0.7460	
Electricity Charges	per unit	8.00	
Total Working Days		300	
Electricity Charges (8 Hrs Per day)			1,43,232.00
Add : Minimim Charges (@ 10%)			
(B) D.G. SET			
No. of Working Days		300	days
No of Working Hours		2	Hour per day
Total no of Hour		600	
Diesel Consumption per Hour		8	
Total Consumption of Diesel		4,800	
Cost of Diesel		65.00	Rs. /Ltr
Total cost of Diesel		3.12	
Add : Lube Cost @15%		0.47	
Total		3.59	
Total cost of Power & Fuel at 100%			5.02
Year	Capacity		Amount (in Lacs)
IST YEAR	75%		3.77
IIND YEAR	80%		4.02
IIIRD YEAR	85%		4.27
IVTH YEAR	90%		4.52
VTH YEAR	100%		5.02

BREAK EVEN POINT ANALYSIS

Year	I	II	III	IV	V
Net Sales & Other Income	45.56	53.66	57.04	60.41	66.83
Less : Op. WIP Goods	-	4.05	4.32	4.59	4.86
Add : Cl. WIP Goods	4.05	4.32	4.59	4.86	5.40
Total Sales	49.61	53.93	57.31	60.68	67.37
Variable & Semi Variable Exp.					
Raw Material & Tax	20.25	21.60	22.95	24.30	27.00
Electricity Exp/Coal Consumption at 85%	3.20	3.41	3.63	3.84	4.27
Manufacturing Expenses 80%	1.09	1.72	1.83	1.93	2.14
Wages & Salary at 60%	5.23	5.75	6.32	6.96	7.65
Selling & administrative Expenses 80%	0.73	0.86	0.91	0.97	1.07
Intt. On Working Capital Loan	0.92	0.92	0.92	0.92	0.92
Total Variable & Semi Variable Exp	31.42	34.26	36.56	38.92	43.05
Contribution	18.19	19.67	20.75	21.76	24.32
Fixed & Semi Fixed Expenses					
Manufacturing Expenses 20%	0.27	0.43	0.46	0.48	0.53
Electricity Exp/Coal Consumption at 15%	0.56	0.60	0.64	0.68	0.75
Wages & Salary at 40%	3.48	3.83	4.22	4.64	5.10
Interest on Term Loan	1.15	1.39	1.00	0.62	0.25
Depreciation	1.90	1.67	1.44	1.24	1.07
Selling & administrative Expenses 20%	0.18	0.21	0.23	0.24	0.27
Total Fixed Expenses	7.55	8.13	7.98	7.90	7.97
Capacity Utilization	75%	80%	85%	90%	100%
OPERATING PROFIT	10.64	11.54	12.77	13.87	16.35
BREAK EVEN POINT	31%	33%	33%	33%	33%
BREAK EVEN SALES	20.59	22.29	22.04	22.02	22.08

PLANT & MACHINERY

	PARTICULARS	QTY.	RATE	AMOUNT IN RS.
1	Attribution disc. Pulverisor 1/2 MT/hr with 7 HPmotor & accessories	1	3,60,000.00	3,60,000.00
2	Rotary cylindrical drum calciner (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		5,00,000.00
3	Burners & other misc. equipments etc.	1		1,50,000.00
				10,10,000.00

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