

## **PROJECT PROFILE ON SANITARYWARE**

**PRODUCT** : **Sanitaryware**

**QUALITY STANDARDS** :

**PRODUCTION CAPACITY** : **Quantity: 1200 MT/Yr.,**  
**(PER ANNUM)** **Value: Rs. 1,52,50,000.**

**MONTH & YEAR**  
**OF PREPARATION** : **Feb. '2011**

**PREPARED BY** : **Br. MSME-DI, Durgapur,**  
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## **1. INTRODUCTION:**

Ceramic Sanitarywares are used for sanitation purposes. Sanitary ware products range from Wash Basins, Closets, Urinals, Sinks, Baths tubs etc. Because of its good properties like good corrosion resistance, good abrasion resistance, glazy surface with different appealing colours, the use of sanitary ware for sanitation purpose has not yet been remarkably replaced by other materials like steel, fibre etc. The ceramic sanitary wares are rather cheap, easy to clean and are available of various colours.

## **2. MARKET:**

The population is increasing day by day and the living standard of people also increasing. The demand of sanitary ware is increasing day-by-day because of its low cost, lucrative value and advancing society and thus the market of it is very bright. With the improved living standard of people these items are essential and an integral part of consuming sectors like Housing, Educational & Research Institutes, Hospitals, Industries, Hotels & Restaurants, Cinemas, Theatres and other public places. As these items are not repairable or re-usable after every installation, it's demand also increases by the renovation and modernisation of the existing systems of the sectors mentioned above.

## **3. BASIS & PRESUMPTIONS:**

Following points have been taken into consideration:

- i. It has been taken into consideration that the unit will be running on a single shift basis for 300 days in a year. The firing operation, however, will be carried out continuously for three shifts.
- ii. 1 to 3 months trial production is required to achieve full plant capacity.
- iii. Interest rate of 13% is considered for Fixed & Working Capital.
- iv. Margin money will vary from 10-20% depending upon the location and scheme adopted by the entrepreneurs.
- v. Operative period of the project is around 10 yrs. considering technology obsolescence rate and loan repayment period.

vi. The cost of land, construction charges, raw materials, machineries & equipments, consumables, salary & wages and other expenses are based on present prevailing conditions.

#### 4. IMPLEMENTATION SCHEDULE:

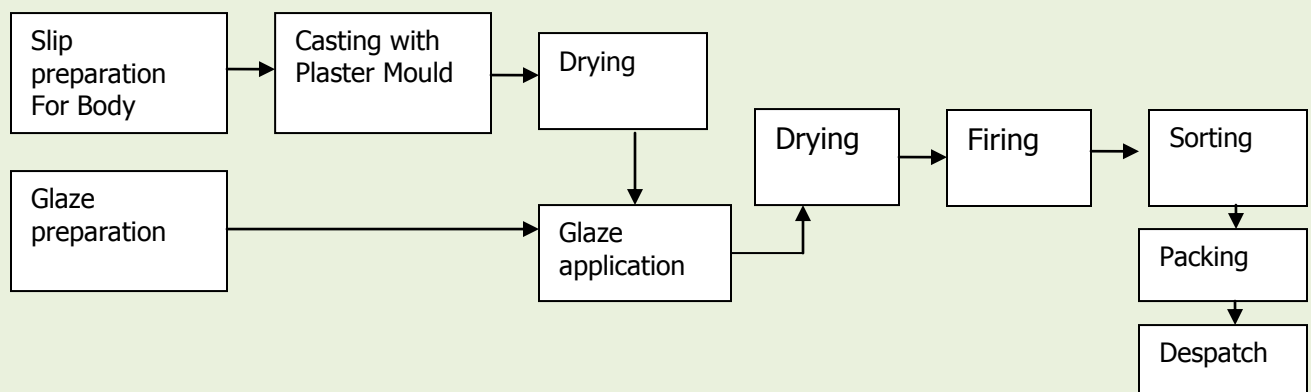
<u>Activity</u>	<u>Period</u>		
	Starting		Completion
1. Survey for data collection in respect of demand, raw materials including Power & fuel, technology availability, Pollution control etc.	0	to	2 <sup>nd</sup> month
2. Margin money arrangement	2 <sup>nd</sup>	to	3 <sup>rd</sup> month
3. Preparation of project document & E.M.	2 <sup>nd</sup>	to	3 <sup>rd</sup> month
4. Finance assistance	4 <sup>th</sup>	to	6 <sup>th</sup> month
5. Site selection & land development	4 <sup>th</sup>	to	6 <sup>th</sup> month
6. Make shift office	-	to	7 <sup>th</sup> month
7. Pollution clearance	3 <sup>rd</sup>	to	6 <sup>th</sup> month
8. Electricity, fuel & water tie-up arrangement:	4 <sup>th</sup>	to	6 <sup>th</sup> month
9. Building construction/modification/ renovation etc.	7 <sup>th</sup>	to	10 <sup>th</sup> month
10. Machine identification & selection	-	to	5 <sup>th</sup> month
11. Order placement for machines	-	to	6 <sup>th</sup> month
12. Transportation & installation of machines & equipments	10 <sup>th</sup>	to	11 <sup>th</sup> month
13. Raw material selection & order placement:	-	to	9 <sup>th</sup> month
14. Receipt of raw materials	10 <sup>th</sup>	to	11 <sup>th</sup> month
15. Installation of laboratory	9 <sup>th</sup>	to	10 <sup>th</sup> month
16. Trial production	-	to	12 <sup>th</sup> month

## 5. TECHNICAL ASPECTS:

i). **Process of Manufacturing:** Sanitary wares are consisting of two types of mixtures of different raw materials. The first type is called body and the other type is called glaze. The body is mainly a tri-axial compound i.e. made of clay, quartz & feldspar. On the other hand the glaze is made of different oxides pertaining to different colours including the basic raw materials of clay, quartz & feldspar etc. For body making the raw materials like china clays, fire clay, ball clay, quartz, feldspar etc. are mixed with water and ground thoroughly to get a uniform slip. They are unloaded in an agitator. The slip is screened, magnetic separated and kept in an agitating tank with addition of required flocculants. The wares are cast in plaster moulds. The cast wares are hard felted and kept on open racks or benches for drying. The dried wares are tested for cracks and then finished. On the other hand glaze is prepared in similar way by ball milling, screening and magnetic separation and then the glaze is used in spray booth to apply on the finished dry body products and the glazed body is sent for drying & then firing. After firing the fired products are sorted out and packed for sale.

ii). **Quality Specification:** The Bureau of Indian Standards has published the following specification for quality & standards: IS: 771-1963, IS: 771-1979 series, IS: 773 to 775, IS: 2556 series, IS: 2781-1964, IS: 2789-1975 etc.

## 6. PROCESS FLOW CHART:



## 7. PRODUCT CAPACITY (P.A.):

a) Quantity : 1200 MT, b) Value : Rs 1,52,50,000/-

**8. POWER REQUIREMENT (APPROX.) : 65 HP**

**9. POLLUTION CONTROL:**

Most of the raw materials used for sanitary wares productions are of powdered form and passed through BS-200 mesh, which creates too much dust within plant. Apart from these oil-fired kilns also produces too much smoke, which consists of hydrocarbons. Hence proper attention is to be given in every operation to control the pollution measures and it is proposed to visit the plant by the concerned authorities once in six months (at least) as a measure of control.

**10. ENERGY CONSERVATION:**

Sanitary ware production unit needs too much energy either in the form of oil or electricity and hence wastage of energy can be avoided by using insulated ceramic fibre in the lining of the dryers & kilns which on the other hand reduce the cost of fuel consumption.

**11. FINANCIAL ASPECTS:**

**A. Fixed Capital**

i. <b>Land &amp; Building:</b>	Area	Rate	<i>Value</i>
	(sq. ft.)	(Rs./ sq. ft)	(Rs.)
Land	10000	75	750000
Building			
Machinery shed	2000	150	300000
Kiln shed	2000	150	300000
Raw material shed	2000	150	300000
Godown	1000	100	100000
Office	1000	100	100000
Boundary wall			100000
		Total:	1950000

ii. **Machinery & Equipment:**

<i>Sl No.:</i>	<i>Description</i>	<i>Qty.</i>	<i>Rate (Rs.)</i>	<i>Value (Rs.)</i>
1	Ball Mill (6' X 6'), complete with Porcelain lining, media, accessories & 10 HP motor	2	100000	200000
2	Ball Mill (3' X 3'), complete with accessories & 7 HP motor	2	75000	150000
3	Slurry pump, capacity 1000 lit, complete with accessories & 2 HP motor	1	25000	25000
4	Spray booths complete air compressor spray guns etc.	2	10000	20000
5	Electromagnetic separator	1	15000	15000
6	Agitator, complete with accessories & 5 HP motor	3	55000	165000
7	Testing equipments	LS	25000	25000
8	Oil Storage tank fitted with pump & heating system	LS	75000	75000
9	Deepwell pump set with 2 HP motor	LS	50000	50000
10	Drying Racks, working table, Misc. Tools, dies, trolleys, weighing platform etc.	LS	75000	75000
11	Office Furniture & equipment.	LS	50000	50000
12	Electrification & installation	LS	80000	80000
13	Ceramic lined shuttle kiln, complete with accessories	2	1000000	2000000
			Total	<u>2930000</u>
iii. <b>Pre-operative expenses</b>				<u>70000</u>
<b>TOTAL FIXED CAPITAL (i+ii+iii)</b>				<u>4950000</u>

## **B. Working Capital (Per month)**

### **i) Salary & Wages (Per Month):**

Sl No:	Personnel	Nos.	Salary (Rs.)	Value (Rs.)
1	Manager	1	10000	10000
2	Supervisor (Tech & Non-Tech)	3	7000	21000
3	Skilled Workers	6	4000	24000
4	Semi-Skilled Workers	8	3200	25600
5	Unskilled Workers.	10	2800	28000
6	Peon	1	2500	2500
7	Watchaman	2	2500	5000
8	Perquisites @15% of salaries			17415
				<u>133515</u>

### **ii) Raw Materials (Per Month):**

Sl No:	Item	Qty.(MT)	Rate	Value (Rs.)
1	Quartz/ Silica Sand	28. MT	@ Rs.1,000/- per MT	28000
2	China Clay	15. MT	@ Rs.2,000/- per MT	30000
3	Ball Clay/ Fire Clay	40. MT	@ Rs.2,500/- per MT	100000
4	Feldspar	32. MT	@ Rs.2,000/- per MT	64000
5	Glaze Materials	3. MT	@ Rs.9,000/- per MT	27000
6	Plaster of Paris	8. MT	@ Rs.1,200/- per MT	9600
7	Stains & Colours	LS	10000	10000
8	Kiln Furniture	LS	10000	10000
9	Packing Materials	LS	10000	10000
10	Fuel (Furnace Oil)	35. KL	@ Rs.15,000/-	<u>525000</u>

		per KL	
		Total	813600
iii)	<b>Utilities (per month)</b>		
			<i>Value</i> <i>(Rs.)</i>
1	Electrical Power (≈50 KWHr x Rs.5.20 x 8Hrs. x 25 Days)	52000	52000
2	Water	LS 2000	2000
			54000
iv)	<b>Other contingent expenses (Per Month) :</b>		
			<i>Value</i> <i>(Rs.)</i>
	Postage, Stationery, Telephone etc.		2000
	Transport Charges.		2000
	Repair & Maintenance		3000
	Advertisement/ Publicity		1000
	Other Misc. Expenses		2000
			10000
v)	<b>Total Working Capital (per month)</b>		
			<i>Value</i> <i>(Rs.)</i>
1	Salary & Wages		133515
2	Raw Materials		813600
3	Utilities		54000
4	Other contingent expenses		10000
			1011115
vi)	<b>Working Capital for 3 months</b>		3033345
vii)	<b>Total Capital Investment</b>		
			<i>Value</i> <i>(Rs.)</i>
i)	Fixed Capital		4950000
ii)	Working Capital		3033345
			7983345



## 12. FINANCIAL ANALYSIS:

### 1 Cost of Production (per year)

		<u>Value (Rs.)</u>
Total recurring cost (per year)		12133380
Depreciation on Building @ 5%	5%	60000
Dep. on machinery & equipment @ 10%	10%	72500
Dep. on office equipment @20%	20%	10000
Dep. on Racks, Tools etc. @25%	25%	18750
Depreciation on Kiln @20%	20%	400000
Interest on capital investment @ 13%	13%	1037835
		<u>13732465</u>
	or say,	<u>13732500</u>

### 2 Turnover per year

<i>Sl No:</i>	<i>Item</i>	<i>Qty.(MT)</i>	<i>Rate(Rs.)</i>	<i>Value (Rs.)</i>
I	Sanitaryware of 1st Quality	700	15000	10500000
II	Sanitaryware of 2nd Quality	500	9500	4750000
			Total	<u>15250000</u>

### 3 Net Profit per year (Before taxes)

	<u>Value (Rs.)</u>
Total Sales - Cost of Production	<u>1517500</u>

### 4 Net Profit Ratio

Net Profit per Year x 100

9.95%

Turnover per Year

**Say, 10%**

**5 Rate of Return**

Net Profit per Year x 100

19.01%

Total Capital Investment

**Say, 19%**

**6 Break-even Point**

Fixed Cost:

Total Depreciation

561250

Total interest on capital investment

1037835

40% on salaries

640872

40% of other contingent expenses

48000

2288000

$$\text{BEP} = \frac{\text{Fixed Cost} \times 100}{(\text{Fixed Cost} + \text{Profit})} = 60.12\%$$

**Say, 60%**

13. **NAME & ADDRESS OF MACHINERY & EQUIPMENT SUPPLIERS:**

1. M/s Vincent Industries, Convent Road, Kolkata-1
2. M/S Amic Industries (P) Ltd., 85 D, Dr. S.C.Road, Kolkata
3. M/s Perfect Machine Tools Corpn.,1,Smith Road, Chennai-1
4. M/s Jaysee Trader, 12, Gitanjali, 1<sup>st</sup> Floor, P.No.378, Mumbai-5
5. M/s Bengal Lion Industrial Furnace Ltd., 27 B, Camac Street, Kolkata-16
6. M/s Hindustan Engineering Company, 123/7, G.L.Tagore Road, Baranagar, Bonhoogly, Kol-35
7. M/s Kay Iron Works (Yamuna Nagar) Pvt. Ltd, Jagadhri Road, P.O- Yamuna Nagar-135001 (Haryana)
8. M/s Sharma Kiln Technology Pvt. Ltd., 4, Gujarati House, Opp. Victoria Garden, Lal Darwaja, Ahemadabad-380 001
9. M/s Modern Engg. & Fabricating Works, B/h Kubeshwar Mahadev, Saijpur (Ambavadi), Ahmedabad
- 10.M/s Dayal Machine Mfg. Co., (Opp. Dariyapur Gate) Swaminarayan Godown, Ahmedabad-4

14. **NAME & ADDRESSES OF RAW MATERIALS SUPPLIERS:**

1. M/s Tahla Ram & Sons, Ralhhkhna, Bikaner (Rajasthan)
2. M/s Multani Minerals, Station Road, Thangadh (Gujarat)
3. M/s Udayar Enterprises, 1, Gandhi Road, Salvan –676 007(T.N.)
4. M/s Ferro Casting & Colours Ltd., Post Joka, 24 pgs. (Kolkata) (W.B.)
5. M/S S.K.Lime Products, Mahassaati Ward, Bhataoara, Dist. Raipur(MP)
6. M/s Wolkam (P) Ltd., Mewar Indl. Estate, P. Box No.21, Udaypur, Rajasthan
7. M/S Rajarajeswari Mineral Ltd., Pipeline Road, Viijayanagar, Bangalore-40
8. M/s Oriental Prospective Co., 1880/2, Opp. Desai pol, Khadia, Ahmedabad
9. M/s United Mineral Ltd., Common Bldg., 102-E, Netaji Subhas Road, Kolkata
- 10.M/S Duff Aryan Mineral, (P) Ltd. Jayalakshmi Chambers, 2<sup>nd</sup> Floor, 57 Presidency Road, Bangalore-25

15. **RESOURCE CENTER OF TECHNOLOGY:**

i. Govt. College of Engg. & Ceramic Technology, Kolkata, ii. CGCRI, Kolkata, iii. CMERI, Durgapur, W.B. – 16, iv. Br. MSME-DI, Durgapur, W.B. – 12, v. NIT, Durgapur, W.B. – 16, vi. NIT, Rourkela, Odissa etc

**16. LIST OF THE UNITS SET UP BY USING THIS PROJECT PROFILE:**

In this region, there are some units to produce such products. However, this project profile is prepared considering the present trends.

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