

PROJECT PROFILE

Product : CERMAIC CANDLES
(FOR WATER FILTERS)

Month & Year : May 2010

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CERMIC CANDLES (FOR WATER FILTERS)

A. INTRODUCTION:

Ceramic candles used for water filtering are tubular porous ceramic products closed at the top and fitted with metal 1 part at the bottom and with opening. For filtering water to get it bacteria free, ceramic water filter candles are widely used. These are made of various ceramic raw materials like china clay, alumina, quartz, feldspar and combustible materials. Among the two varieties in use are (i) candles which give bacteria free water and (ii) the other gives water free from suspended impurities. As per rate of filtration the candles are classified as domestic type and community type in which rate of filtration is 2 to 3 litres per hour and 6 to 7 litres per hour respectively.

Interested entrepreneurs may contact central Glass & ceramic Research Institute, P.O. Jadavpur University, Calcutta -700032 for technical know – how for manufacture of candles for getting bacteria free water.

B. MARKET:

The filter candles are mostly imported although few firms are manufacturing these items in Calcutta, Madras, Karnataka, Hyderabad and Delhi. There is not even a single unit in Bihar. The demand of this item is being met from manufactures of Calcutta. The total estimated annual requirement is 12 lakhs against the present status 7 lakhs. The demand may likely to increase further due to the civilized living standards, consciousness hygiene among the common people and also in the replacement of the used candles.

C. BASIC AND PRESUMPTION:

This profile envisages to manufacture candles to get water free from suspended materials. 1. Efficiency & working hours considered for full capacity utilization (i) 80% (ii) 8 hrs/day (iii) 25 days/PM (iv) Operation of kiln will be continuous till its cycle of operation completes. 2. Time required for achieving full capacity utilization – 6 months from the commencement of production 3. Labour wages - skilled worker semi skilled worker 4. Interest Unskilled worker (As per local rates) Fixed capital @ 15% Working capital @ 18%.

5. Margin money - 25%

6. Estimated life of project – 15 years

7. Land & Building – Rs. 375000

8. Machinery & equipment – Rs. 387000

D. IMPLEMENTATION SCHEDULE:

- (i) Preparation of project report – 30 days.
- (ii) Selection of site _ 15 days.
- (iii) SSI Registration – 6days.
- (iv) Finance sanction – 45 days.
- (v) Building construction – 75 days.
- (vi) Procurement of machinery, erection & installation – 90 days.
- (vii) Raw materials procurement – 45 days.
- (viii) Personal recruitment – 45 days.
- (ix) Trial run -12 days.

E. PROCESS OF MANUFACTURE:

The manufacture of these candles is similar to that of the manufacturing technique followed in any pottery plant.

Non Plastic materials like quartz, felspar, calcined alumina are ground to required fineness in ball mill and mixed with other raw materials like china clay, fire clay, than clay, coal dust in requisite proportion. Casting chip is prepared by the addition of electrolytes and the candles are cast in plaster of paris moulds. These are then dried, finished and fired at suitable temperature to get the desired rate of the filtration. These are then checked and given a special chemical treatment developed by CGCRI, Calcutta. The candles are fixed with metallic plasters to become finished product and for marketing.

F. INSPECTION AND QUALITY CONTROL:

BIS has formulated and published IS: 7402 (part II) 1975 to follow various parameters for ceramic water filter candles.

Approximate motive power 39 HP.

Pollution Control

The unit may be visited once in six months by the concerned local pollution authorities to guide the unit for pollution control.

Energy conservation

This unit needs energy conservation in fuel as well as power.

The kiln may be built with insulation bricks for energy conservation.

G. PRODUCTION CAPACITY PER ANNUM:

Saleable ceramic water filter candles 1,08,000. 16/-each ---- Less 10% sales commission.

H. FINANCIAL ASPECTS:

1. FIXED CAPITAL :

(a) Land & Building:

Rs

S.No.	Description			Amount
01.	Built-up area 200m2			30,000
02.	Land 1000M2			50,000
03.	Water Provisional and supply linings arrangement			25,000

Total 105,000

(b) Machinery and Equipment:

Rs.

S.No.	Description	QTY	RATE	Amount
01.	Agitator cement tank capacity 1000 lit.with access ories & motor – Ind.	1	27,000	27,000
02.	Ball Mill 4` x 4` with accessories and motor-Ind.	1	78,000	78,000
03.	Blunger vat 1000 lit capacity with motor – Ind.	1	27,000	27,000
04.	Electrical drying over 6` x 6` x 3`-Ind	1	45,000	45,000
05.	Grinding machines with motor-Ind.	2	7,500	15,000
06.	Office Furniture & Equipments		LS	12,000
07.	Oilfired rectangular/ DD one tone capacity kiln-Ind.	1	150,000	150,000
08.	Plaster of paris moulds-Ind.	500	24	12,000
09.	Pre-operative expenses			387,000
10.	Installation & Electrification			74,100

Total 827,100

2. WORKING CAPITAL PER MONTH :

(a) Raw Material Per Month:

S.No.	Description	QTY	RATE	Amount
01.	Calcine alumina powder-Ind. (in kg.)	850	12,000	10,200
02.	China clay-Ind (in kg.)	500	2,100	1,050

03.	Coal dust-Ind (in kg.)	150	900	135
04.	Felspar powder (200 mesh) – Ind. (in kg.)			
05.	Fire clay – Ind. (in kg.)	750	1,500	1,125
06.	Metal parts – Ind. (in kg.)	10000	4,800	48,000
07.	Packing material – Ind. (kg.)		LS	6,000
08.	Quartz powder (200 mesh)-Ind(kg.)	750	1,800	1,350
09.	Than clay – Ind (kg.)	500	2,100	1,050

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Total 69,990

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(b) Salaries & Wages per Month :

S.No.	Description	QTY	RATE	Amount
01.	Ceramist – cum- manager	1	3,300	3,300
02.	Clerk-cum- typist	1	1,000	1,000
03.	Semi Skilled labour	2	810	1,620
04.	Skilled labour	3	900	2,970
05.	Unskilled labour	2	270	1,440

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Total 10,330

Perquisites 15% 1,550

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Total 11,880

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(c) Utilities per Month:

S.No.	Description	QTY	RATE	Amount
01.	LL 1. 5 KL@ 6750/kt			10,125
02.	Power			4,875

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Total 15,000

(d) Other expenses per Month :

S.No.	Description	QTY	RATE	Amount
01.	Advertisement & publicity			600
02.	Consumables			1,200
03.	Miscellaneous			1,200
04.	Postage & Stationery			600
05.	Repairs & maintenance			15,00
06.	Transport Charges			900

Total 6,000

WORKING CAPITAL PER MONTH : 69,990 + 11,000 + 15,000 + 6,000
= Rs. 102,870

(e) WORKING CAPITAL FOR 3 MONTHS = 102, 870 * 3 = 308,608

(f) TOTAL CAPITAL INVESTMENT :	Rs.
FIXED CAPITAL	932,100
WORKING CAPITAL FOR 3 MONTHS	308,608
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Total	1,240,708
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(g) Cost of production per Annum : Rs.

S.No.	Description		Amount
01.	Depreciation on Machinery and Equipment @ 10 %		74,100
02.	Depreciation on office Furniture @ 20 %		2,400
03.	Depreciation on Tools @ 25%		0
04.	Recurring expenditure		1,234,434
05.	Interest on capital investment @ 18%		223,328
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	Total		1,534,262
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(h) Sales per Annum:

Saleable ceramic water filter candles 1,08,000 Qty. 16 /- each Less 10% sales commission.

(i) Profit per Annum:	Rs.
Sales per Annum	1,728,000
Cost of Production per annum	1,534,262
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Total	193,738
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(J) Profitability Analysis :

(a) % of profit on sales	=	$\frac{\text{profit / annum} * 100}{\text{Sales / annum}}$
	=	$\frac{193,738 * 100}{1,728,000} = 11.21 \%$

$$\begin{aligned}
 \text{(b) \% of profit on sales} &= \frac{\text{profit / annum} * 100}{\text{Total Capital investment}} \\
 &= \frac{193,738 * 100}{1240708} = 11.21 \%
 \end{aligned}$$

(c) Break Even Point :

(1) Fixed cost per annum :	Rs.
Depreciation	76,500
Interest on investment	223,328
40 % of salary and wages	57,022
40 % of other expenses & Utilities	100,800
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Total	457,650
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(2) Profit per annum = Rs. 193738

$$\begin{aligned}
 \text{Break Even Point} &= \frac{\text{Fixed Cost/annum} * 100}{\text{Fixed Cost/annum} + \text{profit/annum}} \\
 &= \frac{457,650 * 100}{457,650 + 193,738} = 70.26 \%
 \end{aligned}$$

(k) List of Supplier's of Raw Materials :

01. M/s Bharat Grinders,
91, Lenin Sarani, Calcutta – 700013
02. M/s Oxide (India) Pvt. Ltd.,
D-176 – Shastri Avenue, Bidhan Nagar, Durgapur – 713212.
03. M/s. Rajmahal China Clay & Silica Works,
Rajmahal, Dist: Sahabganj, Bihar.
04. M/s Indian House, Field Marshal Kariappa Road, Bangalore – 560001.

(l) List of Suppliers of Machinery & Equipments:

01. M/s. Amicd Industries (P) Ltd.,
10, B.T. Road, Calcutta – 700056.
02. M/s Hindustan Engineering Co.,
123/7 Gopal Lal Tagore Road, Calcutta – 700035.
03. M/s Keshab Machineries Pvt. Ltd.,
25 Swallow lane, Calcutta – 700001
04. M/s Saraswati Engineering,
Sarkarpara, PO Sheorapluly, Hooghly – 712223.